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## OURSELVES.



IT is customary on first issuing a new paper to "take the public into confidence" and to explain the policy, aims, and objects of the new journal, as well as to make promises for the future. We are not altogether in accord with this custom, as it has been our experience that the promises of elaborate future developments so frequently a leading feature in such cases are more often than not of such a fragile and ephemeral nature that they fail to materialize. We therefore intend to depart from customary practices in this particular and to refrain from setting out any promise for future fulfilment. We will content ourselves with endeavouring to deserve the confidence of all interested in motor road locomotion. Every advance in automobilism and every investigation into its many problems will find ready acknowledgment at our hands.

In regard to the aims of THE MOTOR-CAR JOURNAL it is the wish of the proprietors that it shall be a connecting link between the manufacturer, inventor, and experimenter on the one hand and the general public on the other. It does not profess to be classed amongst the technical or scientific journals, but it does propose to fill the hiatus between the dry technicalities of experts and the commonplaces of the non-technical press or daily newspapers. Beyond all, it professes to be *independent*.

We are entirely untrammelled by any connection with companies, financiers, or groups of inventors. We own no interest in any undertaking whose business it is to make, sell, or loan motor-vehicles, and are entirely free from any

bias in favour of any system of propulsion, of design, or of method.

For the rest we have been for many years, and still remain, very deeply interested from a personal point of view in the advance of self-propelled vehicular traffic, while the work of the proprietors of this Journal in drawing public attention to the subject by means of exhibitions, and in other ways, is a matter of common knowledge.

We hold that many problems of daily life will find their solution in the adoption of self-propelled vehicles, and believe the motor-car industry has so great a future before it that, in the time to come, the closing years of the Nineteenth Century will be chiefly celebrated in history by reason of the revived interest in this branch of mechanics.

In conclusion, and in reference to the present issue, we may say that the news we have omitted, owing to want of space, amounts very nearly to the quantity we have inserted, and we think our readers will agree that we are giving sixteen pages of good matter and not charging a prohibitive price for the new MOTOR-CAR JOURNAL.

### Motor-Vehicles Wanted in Victoria.

MESSRS. PHILLIPS, ORMONDE & Co., of 533 Collins Street, Melbourne, Victoria, write us as follows:—"For years past we have been persistently advocating the use of motor-vehicles in Australia, with the result that we have now been favoured with an inquiry for motor delivery vans from one of the most powerful and influential organizations in the Colony—an organization which would soon have many followers. Two classes of vans are required—one to carry from 20 to 30 cwt., and the other from 10 to 15 cwt. Some steep grades have to be encountered, and the power is restricted neither to steam, to electricity, nor petrol. Will some of your friends, therefore, kindly furnish us with such particulars that we shall be in a position to secure the order for them." We need only add that British makers may have perfect confidence in Messrs. Phillips, Ormonde & Co., who have been known to us for several years.



## COMMENTS.


**The French  
Exhibition  
of Motor-Cars.**

It is at last definitely settled that the French Automobile Club will hold its exhibition in the Tuileries Gardens, Paris, during the period from June 13th to July 9th. It is evident that the French Club have but little sympathy with the Automobile Club of Great Britain's exhibition in London, or with that to be held under the direction of the proprietors of this Journal at the Agricultural Hall in July next, for the dates fixed interfere seriously with both shows. The dates of the Agricultural Hall Exhibition were chosen especially with a view not to interfere with the Paris exhibition, which last year closed on July 1st. However, the effect in France will be equal to that here. Fewer French firms will probably show in London, and it is certain that the English firms showing in Paris will be many less than would have been the case had the dates not clashed.

**The Daily Press  
and Mechanical  
Locomotion.**

THE tone of the daily newspapers in regard to automobilism and motor-cars generally is fortunately much less ridiculous and sensational than was the case some little time ago, but there is still room for improvement in some quarters. We certainly hear less of "exploding electric cabs" "gushing forth violet streams of forked lightnings," but when a slight breakdown does happen to a motor-vehicle the very most is made of it, whilst accidents occurring to horse-drawn vehicles are, of course, now so common that but little attention is paid to them unless very serious injuries or actual death results to human beings. The increased prominence given to motor-car accidents arises solely from their rarity, and not from the reason that the damage to life or limb is more serious. Indeed, until the lamentable and altogether inexplicable accident at Harrow the other day, we do not believe that accidents to motor-vehicles in Great Britain have resulted in either injury or death to any person travelling in them excepting on one occasion.

**Electric Cabs  
in  
London.**

THE London Electrical Cab Company have now completed their new charging plant, consisting of two complete sets of Babcock and Wilcox boilers, Willans' engines, and General Electric Company's dynamos, having a total horse-power of 500. They have found this plant a great convenience, and by its means have effected a considerable saving in the cost of current, which previously was taken from the Supply Company's mains. Besides this, under the old arrangement it was only possible to charge the batteries during a few hours after 1 a.m., and consequently many batteries were improperly charged, or the current was put into the batteries too rapidly. By means of the new plant it is possible to continue the charging throughout the day and night if desired, and thus considerable convenience is gained. We understand that the Company are about to shut down their works for a fortnight or so, and to call in all the cabs now in the streets. This is for a two-fold reason. First, all the cabs now in the streets are to be over-hauled, repaired, and re-decorated; and, secondly, more new cabs are to be equipped and fitted up. Slight alterations are also to be carried out at the depot. About the first week in April the company will again start active operations with at least 80 vehicles plying for hire. In addition they are fitting up a superior form of brougham, the intention being to let out a large number of these vehicles as private broughams for balls, dinner-parties, theatres, etc. We are glad to record

that the freedom from breakdowns is now absolute, and all annoyance on this head is a thing of the past. In addition, most of the difficulties experienced in running the cabs are now removed, and they are being run at a profit, though not a very large one at present. Mr. Walter C. Bersey has now been elected chairman and managing director of the Company, and we trust that the experience gained in the past will permit the making of good profits in the future.

**"To-Day" on a  
Motor-Car.**

*To-Day* gives vent to the following anent a "runaway motor-car in the Riviera":—"I have always thought that one of the many advantages of a motor-car was that it would wait patiently outside your hotel while you went in to see a man about a canary, that it would not catch cold from long waiting, and that it would not bolt from impatience. Well, one by one all our illusions leave us! Prince Lubomirskri's motor-car had been left outside the Hotel Beau Rivage. It seems to have been one of those full-blooded, nervous, excitable motor-cars, and something may have scared it, or it may have felt that it was time to get home. Anyhow, it bolted. According to the report, the driver went in pursuit, and was knocked down and run over. This looks very much as if the driver, from sheer force of habit, had tried to hang on to the animal's head, and found out, all too late, that there was not any head. The right spot to jump for in stopping a motor car has yet to be clearly indicated. The car, further maddened, no doubt, by the pursuit, ran into a carriage and pair belonging to the late Baron de Reuter, went for an Englishman and his wife, who dodged it, and finally banged into the entrance of the Hotel des Anglais. Having thus expressed its contempt for all foreigners, it seems to have subsided. Both the motor-car and the driver were injured, and one hears without a pang that the former cannot recover. If a motor-car will not consent to wait five minutes outside a very good hotel in a warm Southern climate, it is of no use, and ought to be dead." Of course, such an accident could only occur through the most gross carelessness, even under the most trying conditions.

**Sleepy  
Dorchester.**

DORCHESTER is evidently not yet quite up to date, for the *Dorset County Chronicle* thinks it worth while to chronicle, in its columns of the 2nd inst., the fact that a motor-car passed through the town on the previous day, and recording the fact that this was "a sight still rare enough to cause a wild sensation in the streets."

**A New  
Electrical  
Vehicle.**

DURING a recent visit we were shown the photograph and drawing of a vehicle which is set to do a really marvellous task. The vehicle is an electrical one, and is propelled by two distinct motors, one geared to each rear road-wheel. It is asserted for this vehicle that it is matched to travel between New York and Philadelphia, a distance of over ninety-three miles, and at its journey's end to still carry in its accumulators sufficient current to propel it at full speed, on a level road, for four hours. This will, of course, at once appear as a bit of Yankee exaggeration, but in due time we are promised unassailable evidence of the tests. It need hardly be said that the batteries are of an entirely new type, but the vehicle is not specially built for the trip, although it will carry 50 per cent. more batteries than its normal capacity. We are sure our readers will await confirmation of this marvellous performance with interest equal to that of ourselves.

**Motor-Tricycles  
and  
Quadricycles.**

By a visit to the French capital one is able to form some idea of the immense boom that exists at present in France in all branches of the motor-car industry, and more especially in motor-tricycles and quadricycles. These light and handy vehicles are in evidence everywhere; in fact, during one half-hour there recently passed us in the Avenue de la Grande Armée forty-eight of these light vehicles. In England, too, we are glad to note a corresponding activity in this class of vehicle. It is rather an open question whether British manufacturers did not commence at the wrong end in first seeking to put upon the market the heavy and expensive carriages with Daimler engines. The British people are a conservative race, and are chary of expending large sums of money in what, after all, is to them an untried and unknown thing, and it is open to argument whether it would not have been better policy to introduce the motor-tricycle at its comparatively low price in order to encourage progress. The motor-tricycle, whether fitted with tube or electric ignition, is a vehicle perfectly under control, possesses few complications, and is more easily understood and readily manipulated by the novice in motor-car matters than is the infinitely more complicated and heavier type of pleasure carriages. That a boom in the direction of motor-tricycles and quadricycles is in progress in England we are firmly convinced. The works of De Dion and Bouton are crammed with orders both for motors only and for the complete vehicle; and to our own knowledge a similar, though not so gigantic, demand is springing up amongst cycle engineers and manufacturers in England. That the De Dion motor is the best yet brought out for such vehicles is beyond contradiction, and the Motor Manufacturing Company, of Coventry, are extremely wise, therefore, to be first in the field in producing these motors in large quantities for immediate delivery to cycle makers for attachment to vehicles of their own construction. One small firm assured us the other day that they had passed an order to the Motor Manufacturing Company for ten of these motors, and also that an additional half-dozen had been ordered the following day—and each one of these was required for vehicles ordered by customers. We understand that the company are making these motors both with electric and tube ignition devices. We are quite certain that the coming season will see a huge development in this class of vehicle in England, and we are also convinced that no one who has enjoyed the exhilarating effects of riding these light motor-vehicles will be content until he possesses a carriage of a larger type in which he can also give enjoyment to his friends. Thus the demand for one type will create a demand for another.

**Liquid Air  
for  
Motor-Vehicles.**

PROFESSOR CHARLES E. TRIPLER, of Brooklyn, claims, according to an United States contemporary, to have solved the problem of employing liquid air as a source of power for motors of all kinds. In his own words he states: "I am happy to announce that, after years of experiment, my process for manufacturing liquid air cheaply and in large quantities is not only successful, but I have solved the problem of harnessing this great power to machinery. My engine for this purpose works, and it requires only the perfection of a few mechanical details to realize its enormous utility as a motor for all kinds of machinery—for railway trains, steamships, motor-vehicles, in short, wheresoever great force is required." Unhappily, however, according to the Professor's own admission, "the perfection of a few mechanical details" is still required, and we all know that it is these final "mechanical details" which present problems so difficult of solution. However, we wish Professor Tripler success.

**Charging and  
Repair Stations.**

It is reported that a company has been formed in Belgium to inaugurate and maintain electric-power charging stations and motor-car repair shops on all the principal high-roads of Europe. It is asserted that at such stations there will be a bar, a restaurant, a repair shop, and charging conveniences both for cars actuated by electricity and petroleum spirit. The scheme is, we fear, too grandiose, however, for fulfilment. There will shortly exist a need for such stations both on the Continent and in the British Isles, however, and the "motor posting stations" should prove remunerative if run on commercial lines.

**Motor-Vehicles  
and  
Accidents in  
France.**

IN France serious accidents are much more frequent in the motor-car world than is the case in England. This arises not only from the fact that motor-cars are much more numerous in France than in England, but also for the reason that utterly reckless speeds are permitted, whilst "rules of the road" are either entirely ignored or are non-existent. The latest recorded incident occurred in the Riviera. From reports it appears that a Parisian gentleman and three companions were returning from Monte Carlo to Nice in a motor-vehicle, and when on a steeply embanked road the car suddenly plunged down the slope, seriously injuring two ladies and M. Bouhey, the owner. The driver, who jumped from the car, escaped unhurt. According to Press telegrams the accident arose from the driver giving a wrong movement to the steering lever. But although this may be so, it is more probable, we think, that the steering lever was jerked from the driver's hand, owing to the steering wheels meeting some obstruction in the road, or else through the car suddenly "skidding." It is an open question whether the old lever steering of the Panhard style of cars is quite safe. For our own part we would much prefer the later wheel steering, especially for such high speeds as are customary in France.

**The Automobile  
Club's Easter  
Tour.**

THE Automobile Club of Great Britain has formulated the programme of its second Easter tour, and the route at present suggested is as follows:—Thursday afternoon, 31st March, to Reading; Good Friday, to Salisbury; Saturday, to Lyndhurst *via* the New Forest; Easter Monday, to Winchester *via* Romsey; Easter Tuesday, to London *via* Basingstoke. The problem with which the committee is confronted in organizing these tours is the question of the ability to obtain sufficient hotel accommodation. It is not every country hotel that can "dine and sleep" sixty customers in addition to its ordinary clientèle, and the problem is even worse in regard to luncheons, for the route is generally so arranged that large towns are avoided during the day. Motor-car trips undoubtedly make one hungry, and it is a *sine qua non* that the participants should be well catered for in regard to food. The difficulty is so great that several routes otherwise delightful have had to be discarded, and from all we can gather it would appear that if the popularity of the Club's tours increases at the present rate, some division of forces will inevitably have to take place. This is objectionable from the point of view that perhaps the most pleasant features of the tours are the "after-dinner chats" and comparisons of experience, but we fear that in the near future these will have to be conducted amongst the members of two, or possibly even three, groups.

**Provincial Exhibitions.**

THE plethora of combined cycle and motor-car exhibitions which are being held in the provinces are, we fear, not commercially profitable to the motor-car exhibitors, owing to the expense of transport and attendance. They do much, however, to popularise motor-vehicles with the general public, and thus prove useful. At the recent shows in Manchester and at Cambridge, we hear that good business was done; in fact, from what we ourselves observed in the latter town it would appear that both temporary and permanent residents are "motor-car mad" for the moment. Previous to the show there was some prejudice against motor-vehicles on the part of the police, but as we saw the Chief Constable on several occasions riding in one of the latest forms of the Motor Manufacturing Company's vehicles, we presume this prejudice has been swept away.

**Motor-Cars in the Isle of Man.**

WE are glad to note that the House of Keys has at last passed the Bill which it had under consideration for controlling the running of motor-cars in the island. The conditions imposed are not too onerous, and we hope that no automobilist will suffer any grave inconvenience from the provisions of the Bill. During the discussion of the amendments, a Mr. J. R. Cowell proposed the insertion of a clause empowering the road authorities to recover the cost of extra repairs in cases where extraordinary heavy traffic passed along roads, but exception was taken to it as being foreign to the subject of the Bill, and it was rejected. Ultimately the yearly license fees were fixed as follows: Not exceeding half a ton in weight, 10s.; not exceeding one ton, £1; not exceeding two tons, £2 2s.; over two tons, £3 3s. Clauses were also passed giving local authorities powers to make regulations for controlling the use of motor-cars in their respective districts.

**Motor-Vehicles in the Provinces of the U.S.A.**

A SPRINGFIELD, MASS., contemporary, in discussing the advance of motor-vehicles in the United States, advances the opinion that it will "take half a century of progressive road building and improved paving before any but the few largest cities in the United States could utilise motor-waggon for the ordinary purposes of traffic." Our contemporary continues:—"The recent tremendous snow-falls remind us that conditions are likely from time to time to arise in all northern cities under which the motor-waggon would be as helpless as a bicycle on a sandy road. It was more than 24 hours after the recent nine-inch snow-fall in New York before even the main avenues of travel in the business section of the metropolis were cleared of snow, and it was several days later before the rest of the city proper was cleared, to say nothing of the other boroughs of Greater New York. The spectacle must have given Mr. Croker and the other would-be revolutionists of the trucking and passenger carrying business in New York a very bad half hour's reflections. If their plan had been effected and motor-carriages and waggon had entirely supplanted horse-drawn vehicles in this city, there could not have been a pound of freight or a single carriage passenger moved in the city for many hours, and the blockade of traffic and delay of business would have been perfectly intolerable." We cannot agree with all our contemporary advances, but with the first contention, that the condition of the provincial roads of the United States are a bar to the advance of motor-vehicles in that country, we cordially concur, for their state is truly execrable.

**Motor-Vehicles on Hire.**

CONSIDERABLE profits have been derived in many places by firms running services of motor-waggonettes or *char-a-bancs* as hackney vehicles. We believe, however, that even greater profits might be derived by letting out motor-vehicles to private hirers by the day, or perhaps for even shorter periods. We hear that such a scheme is on foot at Cambridge, and that as no licences will have to be obtained, there is every possibility of its proving successful. We are also informed that a Sevenoaks gentleman contemplates inaugurating a service between Canterbury and Herne Bay during the summer.

**The Building of Motor-Cars.**

AN American technical contemporary devoted to electrical matters recently discussed the question of the building of motor-cars in its columns, and a very thoughtful article was the result. Carriage building is one of the oldest of the artistic trades and handicrafts. It has grown up through many centuries, and has formed a separate industry with workmen, traditions and reputations of its own. Probably its prosperity was at the height during the stage-coach days, but it is not unlikely that the growth of private wealth has maintained it on the whole plane of activity during the whole of the century now closing. Although the railroad companies did not long go to the coach builders for their cars, there was an enormous increase in the number of private vehicles of all classes, and thus the loss of the stage-coach was not seriously felt by the carriage builders. At the present moment, however, as the century closes, an entirely new prospect opens up, and one is led to conjecture whether the changes in carriage building may not become so revolutionary as to cause the industry to pass into new hands, unless the former directors of it are alert enough to adapt themselves promptly to the latest conditions. It is the motor-car that is the instrument of this new departure, and the outward sign of a change as great as that from bows and arrows to breech-loaders and machine guns. To state the case broadly, the carriage builders of the past have all been, practically, workers in wood. Now, while it is possible that not a little wood enters into the composition of a motor-car, it is easy to picture such vehicles, and good ones at that, into whose construction not a particle of wood enters. The modern motor-car is a thing of steel tubes, while its body may preferably consist of aluminium, light sheet steel, and a few trimmings not necessarily of leather. The motor-car embodies other problems than those of a vehicle that is hauled. It lifts itself into speed from a dead rest; it is steered within itself; its motive power is a matter of mechanism, and the questions that arise at each step are radically different from those relating to the carriages of our fathers. Our contemporary asks:—"How many carriage builders in the United States are there to-day who have given any proof of their desire and intention to head the new procession, and to be the chief beneficiaries of the new tendencies? We are constrained to answer, not one so far as we know. Some of the carriage builders are making wooden bodies to fit the running gear of various motor-cars, but, as we have suggested, that is a precarious tenure, with little promise of permanency in the new art. It does look, at this moment, as though a new crop of manufacturers must come to the front, recruited, perhaps, to some extent by the more enterprising of the old carriage builders, but consisting very largely of concerns trained in the fields of bicycle building and electricity." Whilst agreeing in some measure with this view, so far as England is concerned, we are glad to record that several of the British carriage builders are interesting themselves in the problems relating to properly built motor-cars, and the same is also true of French carriage builders.

**Motor-Car  
Wheels  
and Tires.**

THE various reports of motor-car touring and racing received from France and elsewhere, especially that of the Paris-Amsterdam journey, all show that wheels as at present constructed are not all that could be desired for motor-car work. The accident at Harrow brings this home to us in a serious manner. To construct a wheel that shall be equal to rough use, age, and violent shock is a task that no doubt many a wheelwright would undertake if not restricted as to weight, and if the carriage is to be drawn by horses. But when the wheels have to drive the car, circumstances are altogether changed, a fact not sufficiently realised. That this has not been quite neglected, however, is evident from the various devices of tangent spokes, dished plates, etc. The real difficulty, however, seems to be in the tire. Nobody would question the comfort of a rubber tire or the luxury of a pneumatic tire, but unfortunately both are costly and dangerous. The fatality at Harrow was evidently due to the tire first giving way, fouling with the brake block and the ground, and causing a general rip-up. No wonder that in France many good builders of motor-cars use old-fashioned wheels with iron tires! Is there not a middle course available, however, viz., rubber tires securely guarded by steel shoes? Of course, the resiliency would not be so good as with the bare rubber, nor would the tire be able to accommodate itself so easily to the little inequalities of the road; but the interposed rubber would give all the cushion really necessary to relieve the felloes and spokes from road shock. Perhaps no detail connected with motor-cars needs more immediate attention, and if a good solution can be found it would be readily welcomed. Of the conditions pertaining to an effective and reliable tire we shall say something more in subsequent issues. We shall also be glad to have the experience and views of our readers.

**New Styles  
of Cars.**

STIRLINGS MOTOR-CARRIAGE CO., LTD., of Hamilton, N.B., send us photographs of several of their recently designed vehicles, which for grace of design and excellence of finish are a considerable advance on previous productions. We hope to illustrate some of these in our next issue.

**The Depreciation  
of Scares  
from Motor-car  
Accidents.**

WE are glad that *To-Day* looks so sensibly on the matter of accidents to motor-cars, and their influence on the progress of the movement. Our contemporary says:—"Accidents such as these (the Harrow accident) are likely to create in the public mind a prejudice against the motor-car far beyond what is reasonable. There are accidents, I suppose, to people riding horses and to horse-drawn vehicles every day in the week, and many of them are fatal accidents, but they do not get a third of a column in the *Daily Telegraph*. The motor-car is comparatively new, and its success and failures are recorded at length in consequence. If it could be shown that motor-cars produced more accidents, in proportion to the number running, than horse-drawn vehicles, there would be a good ground for something more than prejudice, though even then we might remember that the motor is at present in its initial stage. But one or two accidents, though of a serious nature, prove nothing, and one might as fairly conceive a prejudice against railways, trains, or hansom cabs." It would be extremely difficult to prove that accidents are proportionately more numerous with motor vehicles than with horse-drawn vehicles or cycles, and we recognise the fairness of our contemporary in its temperate tone.

**Liverpool Self-  
Propelled Traffic  
Association.**

THE last meeting of the Liverpool Self-Propelled Traffic Association for the present session will be held on April 11th, when Messrs. D. H. Simpson and H. Bodman will contribute a paper. The trials of heavy vehicles inaugurated by the Association will take place from July 31st to August 2nd next, and subsequent to these dates the annual general meeting of the Association will be held.

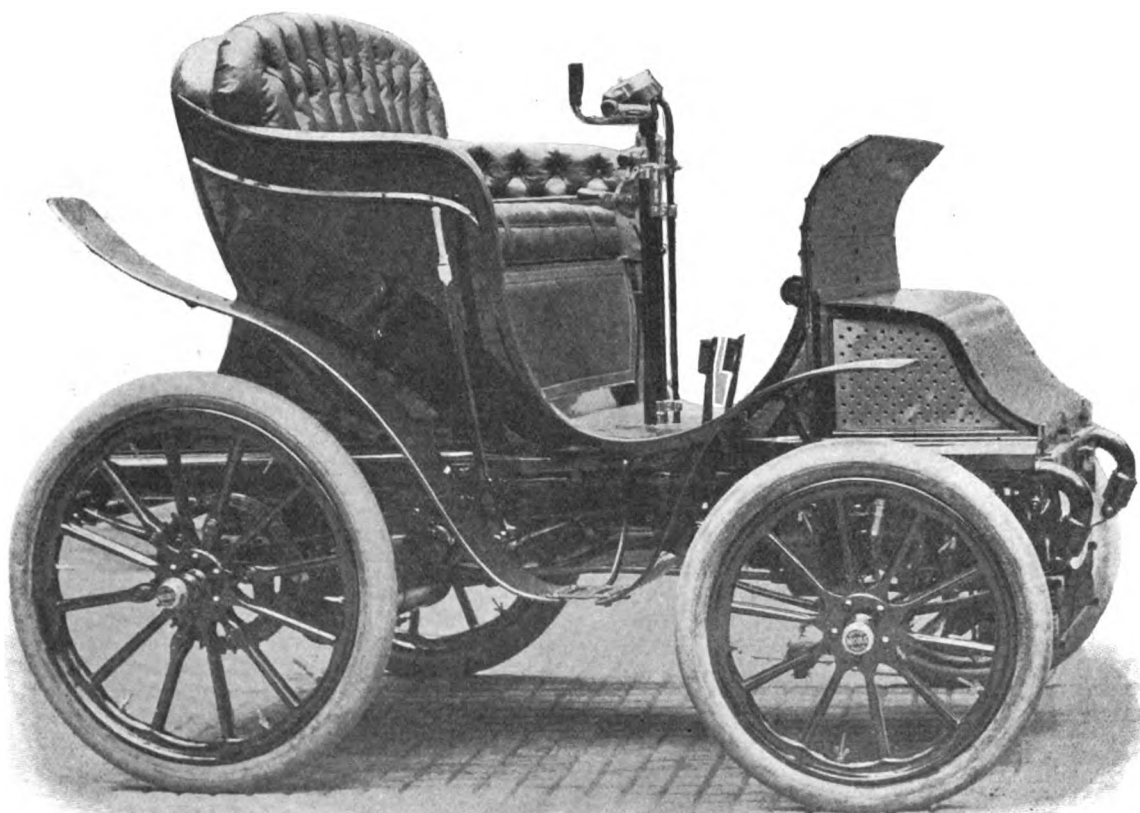
**Electric Cabs  
in New York.**

THE Electric Vehicle Company of New York is arranging to place orders for the construction of 200 more cabs. There are to be 25 of the ordinary coupé pattern, 75 hansom cabs, 50 full-extension broughams seating four persons each, and 50 three-quarter extension broughams accommodating three persons each, the last two being new styles of vehicles. All are to be delivered by June 1st. A new building in Forty-second Street, near Third Avenue, is to be used as a construction and repair shop, and a charging station is to be built down town, and another on the east side, the Company to operate 100 vehicles from each station. From mail advices just to hand, it would appear that the shares and stock in this Company are rapidly rising. The ordinary stock a month ago was quoted at 17 dollars, and a fortnight since at 58 dollars; now a rise of ten points has taken place, and the price is 68 dollars. The preference stock a fortnight ago stood at 90 dollars. A keen New York broker calculates the accrued profits to the stockholders as follows:—"A subscriber of 10,000 dollars for the stock of the Vehicle Company received 100 shares of preferred and 225 shares of common. The preferred is now worth 90 and the common 65. This shows 23,625 dollars returned on the original investment of 10,000 dollars, or 13,625 dollars profit. Furthermore, the original subscription carried with it a call entitling the holder to the privilege of repeating the first operation two or three times more, so that the profit on the original outlay becomes something extraordinary in view of the amount of the investment."

**"Land and Water"  
on the  
late Motor-Car  
Accident.**

OF course, everyone sincerely regrets the recent fatal accident at Harrow, and naturally everyone connected with the motor-car movement is anxious to ascertain the cause in order to apply a remedy or preventive. It is evident, however, that much help cannot be expected from those outside the movement, judging from the "argument" advanced by a writer in our old-established contemporary, *Land and Water*. After alluding to the accident and the consequent verdict of the coroner's jury, the writer in our contemporary, who writes over the pseudonym "B.," continues as follows:—"At the inquest a witness stated that the tire of one of the wheels first flew off, and that then the car capsized. That was probably the real cause of the accident, though the jury imputed it to the rottenness of the spokes of one of the wheels. I have always thought that there must be some danger in using rubber tires on oil motors or steam-driven carriages. The heat from the lamps or fires must have a decided effect upon the rubber, and it seems to me that in this case the melting or softening of the tires to the point of bursting was the real cause of the disaster." It is quite evident from the truly ludicrous comment that the writer in question knows nothing whatever of the subject on which he writes. If "B." cares to accept an invitation to inspect a similar car, we will demonstrate to his satisfaction that it is impossible for the tires to receive any heat from the motor.

## The New Mors' Carriage.



NEW TWO-SEATED CAR, WITH TWO-CYLINDER ENGINE.



THE four-seated petroleum-spirit motor carriage made by the Société d'Electricité et d'Automobiles Mors, of 48 Rue du Théâtre, Grenelle, France, is now well-known in England. Now, however, the Mors Company has taken up the construction of a new type of carriage to seat two persons, which differs materially from its fore-runners and of which we are now able to give an illustration, together with a few brief particulars. To deal first with the motor, this is of the horizontal type, comprising two cylinders so arranged opposite to one another as to drive a central shaft by means of a single crank. In the larger Mors vehicles the motor, as is already fairly well known, is located in the rear portion of the vehicle; in the new two-seated carriage it is placed in the fore part, transversely with the frame. The motor is of 4 e.h.p., the ignition being electrical, on the Mors Company's peculiar system. The carburettor employed is of the well-known standard Mors constant-level float type. Ample provision is made for regulating the quantity of pure air allowed to pass into the carburettor, while a valve is also provided whereby the carburetted air drawn into the compression chamber by the suction stroke of the piston may be rarefied as desired.

The cylinders, in addition to being furnished with radial cooling discs, are also water-jacketed, the circulation of water

being maintained by a small pump. The heated water, ere it returns to the storage tank, is made to pass through a series of ribbed condensing tubes arranged in the fore part of the carriage.

Coming now to the transmission of the power of the motor to the rear road wheels, very little information is unfortunately so far available. In the large Mors carriages belt driving is employed, but in the two-seated vehicle under notice we learn that this has been discarded in favour of gear-wheels. Three forward speeds and one backward motion are provided. All the controlling gear, speed-change levers and electrical switches are mounted on the steering standard, so as to be within convenient reach of the driver. Steering is effected by means of the front wheels, which are mounted on the usual short vertical pivots. A friction clutch is introduced in the transmission mechanism, so that by means of a foot pedal the motor can be instantly put out of gear; a second foot pedal controls a hand-brake on the differential shaft, while a hand lever at the side controls brakes on the rear wheel hubs. The carriage, which is fitted with pneumatic-tired wood wheels, is neatly upholstered, and weighs complete 350 kilog., or rather less than 7 cwt.

None of these carriages have as yet been shipped to England, and the English agents of the Company, the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, W., inform us that none will be delivered for at least a fortnight. We have the pleasure, therefore, of giving our readers the earliest possible description and illustration of this excellent car.

AGRICOLA.



## Leaders in Mechanical Road Locomotion.

### No. 1.—GOTTLIEB WILHELM DAIMLER.

THE name of Gottlieb Daimler is so closely associated with the great progress made during recent years in the development of the motor-car industry that some sketch of his career will be of general interest.

He was born at Schorndorf, in Germany, in 1834, and very early showed remarkable aptitude in mechanical matters. When he left school he served an apprenticeship in an engineering works, and worked in many of the principal factories in Germany. Then he spent a few years in England, where, at the Whitworth Works, he added to his practical and sound knowledge of mechanical construction.

After visiting several foreign countries he joined Dr. Otto in an attempt to develop the gas engine, and in 1872 they, with the help of Herr Langen, a councillor of Cologne, established the Gas-Motoren Fabrik at Deutz, Herr Daimler being the manager. He initiated Messrs. Crossley Brothers, of Manchester, into the principles of gas engine construction on the Otto plan, and in 1882 relinquished his direction of the works at Deutz in order to devote all his time and thought to the introduction of a light and high-speed petroleum motor. The results of his efforts were subsequently seen in the now well-known Daimler motor.

In 1886 he succeeded in applying his motor to a bicycle for the first time with success, and, in the following year, he adapted it to a vehicle with eminent satisfaction, not only to himself but to other experts. Of course, he did not rest content with that, but has since introduced many improvements, with the result that the Daimler motor has been adopted by many of the principal motor-car constructors in France, notably by Panhard and Levassor, Peugeot, etc. In fact, the demand of late has been so great that Messrs. Panhard and Levassor, who enjoy the sole French rights of Daimler's patent, have been compelled to withhold any supplies to

other firms, retaining the privilege of using the Daimler motor only on their own cars.

It has often been thought that the "Phoenix" motor, which is slightly different to the original Daimler motor, was the invention of and was introduced by the late M. Levassor, but Herr Daimler has proved to me that such impression is erroneous, he himself having originated this improved form.

Five years ago the subject of this sketch left the Daimler Motoren Gesellschaft, and formed a new company to work the new invention which he had patented—viz., the "Phoenix" motor just referred to. This proved so successful in superseding the earlier invention that after a short time the older concern saw the wisdom of amalgamating with the newer company.

Such is the history of the introduction of the Phoenix motor. English readers well know the success that has been attained by manufacturers of their own country who have adopted these motors and the Levassor transmission method in constructing their cars.

A love of work has always characterised this well-known inventor, and from his apprenticeship he has continually devoted himself to the work of developing the motor-car industry. Esteemed by all who have had dealings with him in business affairs Herr Daimler well deserves the success he has attained as the result of his own skill and hard work.

D. FARMAN.

HERR GOTTLIEB WILHELM DAIMLER.



At a meeting held in Brussels, a mixed committee was appointed for the defence of the common interests of the cycle and automobile. The primitive programme of the separate organizations has not been changed, but an evolution has been produced in the function and attributes of the members composing that committee. The title of the new defence committee is "The National Belgian Cycle and Automobile Council." Each federation will appoint four delegates.

## MOTOR-CARS ON THE CONTINENT.

### The Inventor of the First Petroleum Spirit Motor-Car.

which is just now attracting considerable attention in French motor-car circles.

### Berlin Motor-Car Exhibition.

WE have received a copy of the prospectus which has just been issued by the Mid-European Motor-Car Club regarding the International Motor-Car Exhibition that body is organizing. The dates fixed for the exhibition are September 3rd to 28th next, and the *locale* the Exerzirhause, 34 and 35 Karlstrasse, Berlin.

### Connection Outfit for Charging Electrical Vehicles.

SOME time ago it was announced that a commission had been appointed by the Syndicat Professionnel des Industries Electriques, L'Association Amicale des Ingénieurs Electriciens, L'Automobile Club de France, and Le Syndicat des Usines d'Electricité to inquire into and report upon the means to be taken to provide charging stations in all parts of the country where owners of electrical motor-vehicles can promptly have their accumulators recharged. This commission organized a competition for the design or manufacture of a portable chest fitted with universal connections for attachments to electricity supply mains, a premium of 400 fr. (£16) being offered to the competitor whose chest is adjudged as best fulfilling the requirements set down. The chest must be so constructed that it can be carried on the outside of motor-vehicles. It must contain (1) a voltmeter, with double commutator permitting of the testing of the polarity and tension of the source of electrical energy and of the battery to be charged; (2) an electricity meter; (3) a rheostat with bi-polar interrupter; (4) be provided with a universal connection (with 2-conductor cables). All the apparatus employed must be capable of working with a current of from 70 to 80 amperes at 120 volts, while the chest must be as small and compact as possible, and be perfectly insulated. Each competitor must also submit the cost of the apparatus, and also, separately, of the connections. The apparatus submitted will remain the property of the competitors, but the commission reserves the right to exhibit and to publish descriptions of them. Full particulars of the competition may be obtained from the President du Syndicat Professionnel des Industries Electriques, Hôtel des Ingénieurs Civils, 19 Rue Blanche, Paris. It was originally intended to close the competition on 1st March last, but now the time has been extended until 1st May.

### An Italian Motor-Car Fete.

AN automobile fête is to be commenced at Verona, Italy, on Saturday next, the 11th inst., to extend over several days. On Saturday morning there will be a run from Verona to San Martino Buonalbergo and back, after which the vehicles will be placed on exhibition. On Monday there will be competitions in driving and manœuvring motor-carriages; on Tuesday a race to Mantona and back, a distance of 100 miles; on Wednesday the vehicles will again be placed on exhibition, the fête being brought to a close in the evening by the distribution of prizes, a number of which are being offered.

### Motor-Car Chains in France.

It is an acknowledged fact that self-moving vehicles have found their regeneration in late years in France and Germany, and it is therefore extraordinary that even until the present day motor-car chains are measured and called by English denominations instead of by metrical denominations, although actually made in France or Germany. Lately an attempt has been made by the French chain-makers to break away from this rule, and they have urged the adoption of metrical dimensions. The combination of English and French measurements must necessarily cause the French motor-car manufacturers considerable annoyance and trouble, as the metrical measurements become so involved when taken in conjunction with the measurement of the pitch, etc., in English inches. We fear, however, that the efforts of French chain-makers, although aided as they are by the Touring Club of France and the French Automobile Club, will not result in the builders' emancipation from these troubles, for it is impossible to compel the users to adopt the metrical system. This arises from the necessity of being able to procure in any spot a chain which will fit the sprocket wheels in the case of a breakdown without unnecessary delay or difficulty. This under the present system is the case over the whole of Europe; but if the standards suggested by the Commission of the Touring Club of France are adopted this convenience will disappear, for none of the standards suggested will synchronise with English measurements, as may be judged from the following table, which gives the suggested standards in millimetres and in inches to eight places of decimals:—

#### SUGGESTED STANDARD DIMENSIONS.

| Single Roller Chains.         |                     |                 |
|-------------------------------|---------------------|-----------------|
| Pitch.                        | Inside width.       | "Plein."*       |
| Mm. (inch).                   | Mm. (inch).         | Mm. (inch).     |
| 25 (.98426975) ...            | 13 (.51182027) ...  | 11 (.43307869)  |
| 30 (1.1811237) ...            | 15 (.59056185) ...  | 13 (.51182027)  |
| 35 (1.37797765) ...           | 20 (.7874158) ...   | 16 (.62993264)  |
| 40 (1.5748316) ...            | 20 (.7874158) ...   | 18 (.70867422)  |
| 50 (1.9685395) ...            | 25 (.98426975) ...  | 22 (.86615738)  |
| 60 (2.3622474) ...            | 30 (1.1811237) ...  | 27 (1.06301133) |
| 75 (2.95280925) ...           | 35 (1.37797765) ... | 33 (1.29923607) |
| Block and Twin Roller Chains. |                     |                 |
| 35 (1.37797765) ...           | 20 (.7874158) ...   | 24 (.94489896)  |
| 40 (1.5748316) ...            | 20 (.7874158) ...   | 28 (1.10238212) |
| 45 (1.77168555) ...           | 20 (.7874158) ...   | 32 (1.25986528) |
| 50 (1.9685395) ...            | 20 (.7874158) ...   | 36 (1.41734844) |
| 60 (2.3622474) ...            | 25 (.98426975) ...  | 42 (1.65357318) |
| 70 (2.7559553) ...            | 30 (1.1811237) ...  | 48 (1.88979792) |
| 85 (3.34651715) ...           | 35 (1.37797765) ... | 60 (2.3622474)  |
| 100 (3.937079) ...            | 40 (1.5748316) ...  | 70 (2.7559553)  |

\*[By this term is meant the length of the block in block chains, and the diameter of the roller in single roller chains, or practically what may be termed the length of the tooth spaces in the chain wheels. In the twin roller chain the "plein" is equal to double the diameter of the rollers, plus the space between the twin-rollers—this space being fixed at 2 mm.—Ed. M.-C. J.]

### A Brake-Cooling Device.

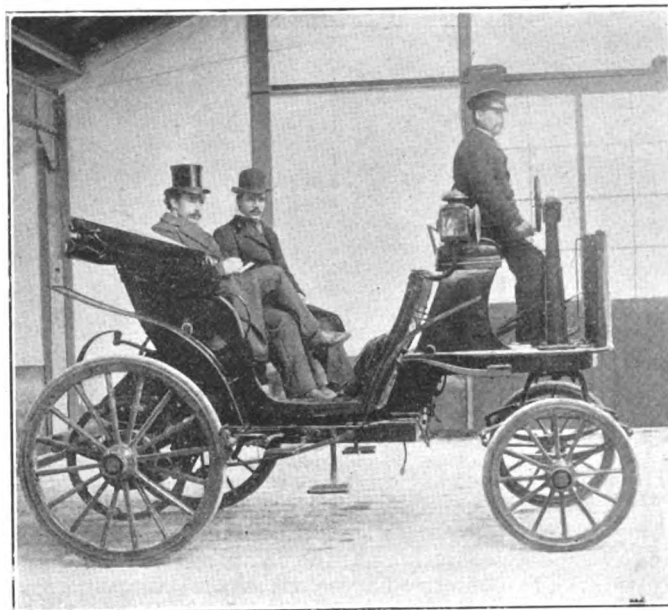
HERR G. DAIMLER, in conjunction with Mme. Veuve Levassor, has lately taken out a patent in France for a device the object of which is the cooling of the band-brake disc or drum on motor-vehicles. It consists of a small water tank and conduit, which conveys water drop by drop to the drum. This is done only when the brake is in use, the lever by means of which the brake is applied being so connected to the valve on the tank as to open the valve when the brake is applied, and to close it when the brake is released.

## Electric Cabs for Paris.

IN France the claims of pleasure are so frequently placed before those of business that it was not surprising to find French builders of motor-cars giving their first consideration to light, comfortable, and speedy vehicles for excursions, etc. This contrasted strongly with the aim of English makers to attain success in the introduction of vehicles for ordinary public traffic before they thought of the lighter and less necessary self-propelled pleasure conveyances. And so, notwithstanding the efforts of M. Bixio, the general manager of the Compagnie Générale des Voitures, to introduce them in Paris, the first service of self-propelled cabs for general use was tried in the English capital.

Frequent have been the rumours as to the introduction of electric cabs into Paris, and many have been the disappointments at their non-appearance after having been heralded in the Press. Nothing of the extensive character suggested has, however, been done up to the present, and the old-

electric four-wheelers familiar to London, important differences existing in many features, although they are certainly modelled on some of Mr. Bersey's lines.



THE OPEN COUPÉ.

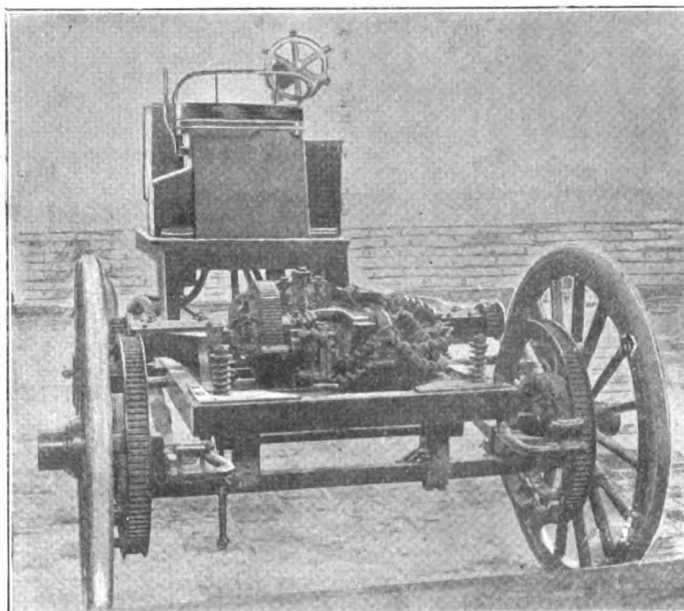
It is the intention to commence the new service with three different models—the landaulet, the open coupé, and the closed coupé, illustrations of which accompany this article.



THE LANDAULET.

fashioned conveyances have continued to monopolise the means of ready transit to and from various parts of the city.

At length, however, there is a prospect of an early service of these desirable cabs in Paris, 150 being now in course of construction at Aubervilliers, whither I have been, by the courteous permission of M. Bixio, to confirm this latest rumour which will soon be converted into actual fact. At the outset it should be understood that the cabs to be placed on the Parisian boulevards are not exactly like Bersey's



THE STANDARD VEHICLE FRAME.

In all three models the frame is exactly the same, any description of body being interchangeable. The method of transmission is very similar to that adopted in the London cabs,

and the storage battery is hung under the vehicle in the same way. A special commutator controls the current, which is thus allowed to pass gradually into the electric motor.

The cab weighs 2,000 kilogrammes, of which the accumulators account for 800; this weight will probably be reduced. Beneath the driver's seat is the commutator, controlled by a lever on the left hand; on the right is a steering wheel, which communicates the direction to the fore-carriage. The maximum speed attainable is 15 kilometres. Pneumatic tires are fitted on the front wheels and solid rubber tires on the rear wheels, the former being provided in the hope that the life of the accumulator will be considerably extended.



AN AVENUE IN THE DEPÔT.

The motor is placed at the rear of the frame, and conveys power to the differential shaft through the action of cog-gearing to the intermediary shaft; the pinion is made of raw hide to secure quiet working at the comparatively high speed necessary. The intermediary shaft carries the differential gear, and power is transmitted to the road wheels through the two chains, of Renold's design but of French manufacture. The employment of such chains on the driving wheels is, perhaps, not to be commended, seeing that they

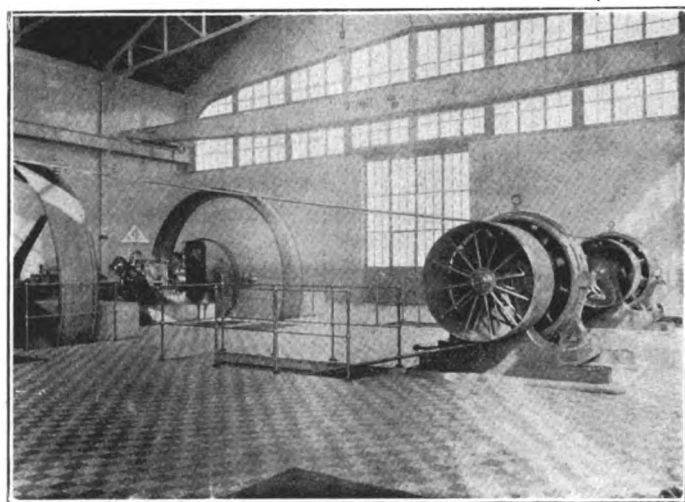


THE BATTERY CHARGING ROOM.

are considerably exposed to the corroding influence of dust and mud. Indeed, we understand that Mr. Hans Renold has himself condemned the use of his chains for such purposes.

Although the motor and every other part of the vehicle has been made in France, a study has evidently been made of the English system, and some of its features have been imitated. For instance, the control of the current is very similar to that in Bersey's cab. The armature of the motor and the electro-magnets are wound in two separate circuits. Without acting on the connections of the

battery, four different speeds ahead, two electric brakes, and a reverse speed are obtained. When the vehicle is stopped, or when the mechanical brake is brought into play, no connection whatever exists between the battery and the motor. When the controlling lever is in the first position, current at 80 volts pressure is sent through the artificial resistance, travelling through the induction coils and the two windings of the armature connected in series. In the second position—corresponding to the second speed—the current is applied through the armature and induction coils, the resistance being thrown out of circuit. When the lever is brought to the third position, the current passes through the two windings of the induction coils and through the two windings of the armature connected in parallel. The fourth speed is obtained in connecting in parallel the armature and induction coil windings, the current passing through these two combinations grouped in series. The first electric brake is obtained by short circuiting all the windings in series through the resistance, and the second by cutting out the resistance from the short circuit. To obtain the reverse speeds the direction of the current in the armature is changed.



THE POWER HOUSE.

The buildings at Aubervilliers devoted to this new section of the business of the Compagnie Générale will ultimately have a capacity for 1,500 electric cabs, but, as already mentioned, only one-tenth of that number is under actual construction for the service about to be inaugurated. The station occupies a piece of ground covering 40,000 square mètres. Some idea of the general design of the cabs will be gleaned from the illustrations. A view of the dépôts for the cabs is also given, as well as of the charging station. This latter has two plants, each of 250 h.p., the steam-engines having been supplied by MM. Pignet and Company, of Lyons, and the dynamos built by Alioth. The dynamos generate current at 125 volts and 1,200 ampères. The steam generators are of the Bonnet-Spazin water-tube type. The current is transmitted from the switchboard to the charging floor by eight cables, four for each dynamo. A very ingenious automatic hydraulic device has been adopted for taking the batteries from the cabs and switching them into the charging chamber. The "Julien" cells have been adopted by the constructors as being best for the hard work that will be expected of these cabs.

Before finally deciding upon the style of the cabs now constructed, many experiments were made and several electric cars and cabs were examined, with the result that the company and its chief engineer, M. A. Cauzonne, have every confidence in the success of the innovation. D. FARMAN.



## SCOTTISH NOTES.



### A Bit of History.

Two and a half years ago the motor-car was an unknown animal or thing in the land of "brown heath"—and other excellent things; except for the apparition that a very few people are believed to have seen a few months earlier in the form of "something on wheels without a horse," driven about in certain localities after night-fall by a gentleman, whom the police after a while ventured to lay hold of, and who turned out to be—not the dark gentleman that some of the superstitious old ladies took him to be—but that most enthusiastic of Scotch motor-carists, Mr. T. R. B. Elliot, of Kelso. To this gentleman, I think, belongs the honour of being the first Scotch owner of a modern motor-car. Naturally he had to pay the penalty of his temerity, and this in the form of a fine inflicted by the Berwick magistrates, the charge being proved that he had failed to employ a fore-runner with the "red flag." This car was a Paris-built "Daimler" imported before the Light Locomotives Act of 1896. November of the same year, as all the world knows, gave us "Emancipation Day," with which began the dawn of a new era in the history of road locomotion in the British Isles, and opened the way for the establishment of a new industry of vast and far-reaching importance. North-countrymen were alive to the possibilities thus presented, and rumours were then as prevalent as influenza is now of the great things in the motor line, which various people more or less mechanical in various parts of Scotland had up their sleeves, and with which they would shortly startle the world; and so the country waited.

### The First Motor-Car Built in Scotland.

In January, 1897, the first commercial motor-car built in Scotland was completed. An old-established firm of coachbuilders had a man at its head who saw better and further than other men, and had been at work quietly. At this early date he appears to have taken a firmer grasp of the problems of the mechanical carriage than many engineers of note, who now, after spending thousands of pounds on fruitless experiment, are beginning where Stirlings, of Hamilton, began two years since. In the history of the new movement, the name of John Stirling, of Hamilton, will be conspicuous as the pioneer of the motor industry in Scotland, and it is commonly acknowledged in the North that but for Mr. Stirling there would have been no motor industry here, or, at any rate, it would not have reached anything like the large proportions it has so quickly attained. Mr. Stirling, at the outset, settled with himself the first great point, that was, that he knew nothing whatever about mechanical carriages; and, second, that the French knew a great deal. Forthwith he decided to take up the best that the French had produced. He selected the Daimler-Panhard system; and the wisdom of his selection time has confirmed. With the Daimler motor, therefore, he started, and in the short space of two years very large numbers of Stirling-Daimlers have been distributed all over the country, doing excellent service.

### A Scottish Club.

A MOVEMENT is at present on foot having for its object the formation of a Scottish Motor-Car Club, and several of the leading lights are, I believe, giving it their hearty support. The proposal is a good one, and a well-organised club is certain to do much to increase the public interest in the business and pastime of automobilism. I hope to be able to say more on this subject next week.

### Motor-Car Shows.

At the Edinburgh cycle and motor-car show last month the motor-car section was undoubtedly the chief attraction, and there is little wonder, for here were exhibited examples of nearly every system, and in the large Waverley Market a special track was screened off for showing the vehicles in motion. The largest and finest display was that of Stirling's Motor Carriages, Limited, who had a tastefully decorated stand some 60 feet long, and showed six handsome carriages fitted with improved Daimler motors, comprising a brougham, family omnibus, with movable top, hooded stanhope, two dogcarts, and a waggonette for six. All the designs were quite new and very elegant. A steam omnibus to seat twenty and a steam waggon to carry four tons were also exhibited, and last but not least a line of new Pennington cars, including the well known "Victoria," also an exceedingly pretty car to seat three or four persons, with body of polished walnut, and the price (135 guineas) surprised everybody. A new Pennington double-cylinder car and two Pennington tricycles completed this highly important exhibit. I understand Messrs. Stirling have secured the sole right for the sale of Pennington motors in Scotland. Next in line was the Madelvic Motor Company, Limited, of Granton, who had on show several well-designed and finished electric cars, which, however, were not shown in motion. They comprised an elegant double brougham, two gigs, two light delivery vans, and several light parcel carriers, all of them fitted with the Company's patent leather tires. The Edinburgh Auto-car Company showed two carriages built by the Motor Manufacturing Company, Limited, and fitted with motors on the Daimler system, a Bollée, a tricycle, and a quadricycle by the Beeston Motor Company. The Benz Motor Company, of Aberdeen, exhibited two cars on the well-known Benz system—a single-cylinder sociable and double-cylinder dog-cart, both elegant and well-finished.

### Mors versus Pennington.

A LIVELY interest is being taken here in the challenge issued by the Automobile Association, Limited, of London, in which they allege that their Mors car is the fastest road carriage in this country. Messrs. Pennington & Baines have accepted the challenge, but as difficulties might arise with the authorities in conducting a speed contest in the public highway, they suggest that one of the steepest gradients should be selected, and that the competing cars should ascend and descend the same (the descent not to be at a greater speed than the ascent) a hundred or more times. The car ascending the oftenest in a given time to be declared the winner. One hill, I observe, suggested by Mr. Pennington is that leading up to Arthur's Seat, Edinburgh. The general opinion here is that a motor-car could be put to no severer test, and hope is expressed that no quibbles may be raised by either party to prevent the carrying out of so interesting and instructive a contest.

### Heavy Motor-Vehicles in Burns' Land.

THE adoption of heavy motor-vehicles for transport purposes has been slower here than in the south, but there is evidence this year that some of the leading contractors and large carrying concerns will make a trial of mechanical traction, and I have no doubt if steam waggons, such as are built by the Steam Motor Company, Leyland, are introduced, their general adoption will be but the matter of time. Altogether the horseless-vehicle movement in Scotland is in a vigorous and healthy condition, and the industry having been saved from the bane of the voracious company-monger, has been established on a thoroughly sound foundation.

BROWN HEATHER.



## CORRESPONDENCE.



## THE PENNINGTON CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—At a time when so much interest is centred in the Pennington car, perhaps a few words concerning a run on the same may be of interest to your readers. I was much impressed with the Pennington car, and was deliberating in my mind whether to buy one or not, when it struck me I should like to make a thorough trial before I finally decided. Mr. Pennington granted this, so I accordingly set out for King's Lynn on Saturday morning. The weather was very bad—rain in the early morning, and snow and frost and bitter wind later on. This in no way affected the motor, which behaved excellently throughout, covering the 130 miles from Manchester to King's Lynn in ten hours. A fast time was out of the question, as I had several times to stop and warm myself. I mounted some very stiff gradients round Chesterfield, and no other motor that I know of would have gone up them at the pace the Pennington did. Arrived at Lynn, I made some hill-climbing tests with a well-known motorist, weighing 16 stone, on board, and he was astonished at the pace on the hills, declaring it went up hill almost as fast as it went on the level. I may add I purchased a Pennington motor.

Yours sincerely,

DUDLEY GRIERSON.

20 Gloucester Square, Hyde Park, W.

## A CHAMPION CYCLIST AND MOTOR-TRICYCLES

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been interested in motors since their first appearance, and have made considerable use of them for pacing purposes in France during the past two years. I am at present the owner of a motor-tricycle which I believe to be the fastest in England, and it was with this I carried off the motor-cycle tests of speed and hill-climbing powers at the recent Liverpool show against all competitors in so easy a fashion. Many times I have done thirty-three miles in the hour on this machine. Since I have been located in Manchester, I have often seen the Pennington motors running about the town. Several times had I been informed that these motors were capable of doing wonderful speeds, but I thought their capabilities were really over-estimated. During the Manchester show I went to the Botanical Gardens with a view of testing their speed against my tricycle in a friendly way. I was fortunately able to arrange for a speed race for a distance of several miles. In starting out, I took the lead and kept it for some short distance, when, to my surprise, Mr. Pennington came along with a tremendous burst of speed, and left me out of the running completely. With three people up, as Mr. Pennington had on his machine, I believe he was travelling at a speed of 45 miles an hour, and ordinary hills did not seem to make any difference. As I won the Liverpool contest so easily, and have also had an impromptu race with my tricycle against the Mors car, and easily beaten it, it amuses me that the Automobile Association should talk about racing the Pennington with a Mors. I should like to say a word about the Pennington cylinders. After the run I have mentioned I looked at the cylinders, and they were as cool as if they had done no work at all, and the water remained quite cool; and, if there is a motor capable of running with a small amount of water, it is the Pennington. I admit that I was most sceptical as to the work the Pennington motor was capable of doing till I had seen for myself and thoroughly tested them.

I believe I am correct in stating that I am the only one to give any idea of the speed of the Mors and Pennington, having had the chance of riding at fast speeds with both makes.

Yours faithfully,

C. G. WRIDGWAY.

Manchester, March 6th, 1899.

## EXHIBITIONS AND THE BOOM IN MOTOR-VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We wish to congratulate you on your bringing out your paper at such an opportune time. From the large amount of business we are doing—about three times what we had anticipated—it seems to us that there is going to be an enormous boom for motor-cars not only in England, but for foreign countries. We have booked orders for many foreign countries, but especially for the Continent. Exhibitions have, we believe, done much good to familiarise the public of this country with the motor-car, and we are sure that the exhibition you contemplate holding at the Agricultural Hall will do an immense amount of good, inasmuch as you are having a track under cover, which will draw better-class people to inspect the cars working, which they would not trouble to do otherwise.

Speaking of shows, it was remarkable to see at the Edinburgh show Messrs. Stirling booking an enormous amount of orders, and the ensuing week at the Manchester show we were again astonished at the large number of orders booked from people whom we had never come into contact with before. At both these exhibitions we had machines to enable purchasers to take a ride and test for themselves, and it is to this we attribute the big success; but at your exhibition the demonstration track will be in full view of the public, without fear of accidents resulting from people crossing their path.

Yours faithfully,

PENNINGTON & BAINES.

5 and 6 Great Winchester Street,  
London, E.C.

March 6th, 1899.

## NOTES FROM THE CONTINENT.



WE learn from Zurich that a company has just been registered in that city with a capital of £16,000, and with the title *The Schweizerische Motorwagenfabrik Wetzikon*, to acquire, carry on and develop the works and business of the *Motorwagenfabrik Wetzikon*.

LA COMPAGNIE GÉNÉRALE DES MOTO-VOITURES is the title of a company which has just been formed at Bondy (96 Rue Sainte-Medéric), France, with a capital of £4,000.

It is announced that Messrs. Benz & Co., of Mannheim, are about to take up the construction of petroleum-spirit motors of  $1\frac{3}{4}$  h.p. for motor-tricycles.

THE Dutch postal authorities have, it is reported, just placed an order with a French firm for several motor-vehicles.

THE title of the concern known as *La Nationale Société de Construction de Moteurs et Automobiles*, brevets Tenting of Paris (28 Rue Chateaudun), has been changed to *La Minerve, Société de Construction de Moteurs et Automobiles, Inventions Françaises*. At the same time the capital has been reduced from £10,000 to £8,000.

# Pneumatic Tires as Applied to Automobiles.\*

By S. F. EDGE.



IN opening this discussion I cannot help but feel that this evening we shall only touch on the fringe of this whole matter, as there are many points in connection with it which I think require the special knowledge of someone like our friend Professor Boys, and I hope that he will at some future time see his way clear to take up the subject, for the benefit of we autocarists, and add to my layman's experience that particular skill which he has applied to so many difficult problems.

The car on which the tires have been fitted to which my experience particularly belongs, is a Panhard and Levassor Daimler car, weighing when complete for the road, with oil tanks, etc., full, close on 21 cwt.

The sizes of the wheels are 36 inches and 42 inches respectively, over all; the sizes of the tires themselves  $3\frac{1}{2}$  inches in diameter, to all wheels.

The rubber of the tires has, first, an outer layer of rubber which is moulded in such a form that when placed on the tire, and this inflated, it is under very considerable compression on that portion of the tire which comes in contact with the ground.

To this is vulcanised two ply of canvas, and then there comes a thin layer of rubber over the canvas lining proper.

This lining consists of six thicknesses, and inside of this there is a very thin layer of unvulcanised rubber, so as to make a perfectly smooth surface for the inner tube to bed against.

You will see, therefore, from this that merely in the strength of the rubber and canvas there is quite a considerable resistance from flattening, in the materials of which the tire is composed, but to inflate this to a degree of hardness which I find most efficient in running a pressure of no less than 160 lb. to the square inch is required.

Whilst on the question of air pressure, I might mention the result of some tests which I made with the vehicle running perfectly free down a slope over a measured distance. Starting dead, the maximum speed was obtained with an air pressure of only 100 lb. to the square inch, but for up-hill work the most effective result was obtained with 160 lb. to the square inch, and from various tests I find that about this pressure gives me a tire with the least possible flattening under work and the least possible side roll. Either of these movements causes very rapid wear and deterioration to the tire.

Referring to the question of punctures, owing to the thickness of my tires I have never had a *bona fide* puncture, or any trouble through anything entering externally and letting out the air, so that with reasonably thick tires this risk may be put on one side as very slight.

Referring to the advantages of pneumatic tires over solids, I have never had the opportunity of making tests with instruments in regard to this; but from running on the road and very carefully noting the behaviour of the car on certain

hills, I find that I can use my car with a 25 per cent. higher gear than when fitted with solid tires. The advantage is more marked the higher the speed of the car, or through mud, as I have often run my car in company with another one of almost similar design and manufacture but fitted with solid tires. This car, however, is somewhat lighter, but is geared on each speed almost identically with my own, and whilst climbing a hard hill where there is no run on the car at all, and where the engine is only just able to run at its full speed on the lowest gear, the two cars will keep exactly side by side; but directly there is a chance of changing on to a higher speed, I have an advantage of fifty yards in a very few seconds, and as the speed increases I am able to more rapidly change on to higher speeds, and draw right away.

Quite irrespective of the advantage in draught, there is another and more important one, and that is the great ease and comfort with which the car steers with pneumatic tires. As you all know, when steering with a solid-tired car at high speed, and you run suddenly into loose stones, or even thick dust, there is a great tendency for the car to swerve. This with pneumatic tires is almost entirely obviated, and whilst at the same time on greasy roads of a certain character there is more slip than with solid tires—owing unquestionably to the fact that a pneumatic tire does not cut in like a solid tire, and therefore does not get so much grip—taking all round running into consideration, I do not find that I have any greater tendency to slip (as a whole) than with solids; and whereas sometimes a solid will slip where a pneumatic tire will not, there are places where a pneumatic tire will slip where a solid will not.

Living as I do right in the centre of London, this point, when I first had pneumatics fitted, was one that rather worried me, as I thought of the winter approaching, with slippery roads in its train. This idea has, however, been entirely dispelled, and I cannot feel that any more care is required, from a side-slipping point of view, when driving a car with pneumatic tires than when driving a solid-tired car.

When we come to the question of cost, however, there is no question that, even under the best of circumstances, pneumatic tires are going to cost us considerably more for our cars than solids.

One well-known manufacturer, whose tires I have carefully examined, makes them with a comparatively speaking small amount of rubber on the tread, and the life of the driving tire on a light car seems to be about 2,000 miles; but this life, so far as I can tell, seems to be capable of renewal for a similar distance by fitting a new rubber cover, as I can discern no signs of a canvas lining being destroyed through internal wear.

With my own tires the rubber cover, which, as you know, is particularly ample, has a life of quite 6,000 miles, and, with care in filling up all cuts, I would say another 1,000 or 2,000 miles.

My trouble, however, has not been with the rubber cover, but with the lining, as, owing to the enormous air pressure to which the tire has to be pumped to be hard enough to sustain the weight of the car, the canvas lining seems to have a life varying from 2,000 to 3,000 miles only, and at this period it is liable at any time to crack exactly at the point where the bellows-action, if I may so term it, takes place, and, of course, a burst tire is the result. Consequently a new lining is

\* A Paper read before the Automobile Club of Great Britain.

required, which costs about £3 6s. for the driving wheels and £2 11s. for the front wheels.

Now, of course, the effect of this bending action could be greatly minimised, as in a cycle tire, if the canvas lining was, say, of only two layers, as the curve that the canvas would have to take at the bend would not cause so great a strain on the outer layers of the canvas; but then comes the question that as the canvas walls are reduced in thickness, so their strength to stand up under pressure is reduced, unless increased air pressure is put into the tire.

Moreover, it is found in practice that two layers of canvas are not strong enough to stand the enormous air pressure, so that we are now face to face with this difficulty: first, if we have the tires thin, so that the bending will not hurt them, the internal pressure of air will destroy them; and second, if we make the walls thick, so as to withstand the internal air pressure, the number of layers of canvas necessary to do this constitute a danger in themselves, and destroy one another, beginning from the outside, because of the great strain thrown on the outer layers.

I am therefore now trying another experiment of which I hope to give you the benefit of my experience at a later date, and this is to do away with the necessity for such an enormous air pressure.

This I can do in two ways: First, by making the inner tube exceedingly thick, say half an inch, so that the air has quite an amount of work to do to merely distend the inner tube, thus utilising a considerable amount of the air-pressure in distending the inner tube rather than in trying to burst the inner lining. The disadvantage of this method, however, will be that such a large amount of rubber will have to be used in the tire that its cost will be greatly increased. The second method, which I have actually tried, the results of which I will tell you, and which, I think, will surprise you, is to have the tires filled with gelatine, pumped in, of course, when hot and liquid, and of such a consistency as to set in a firm jelly, and, of course, under great pressure, so as to sustain the necessary weight.

These tires, owing to the jelly, add no less than 31 lbs. to each wheel, but, curiously enough, after most careful tests up known hills, give me results equally as good as pneumatic tires pure and simple, and I was quite charmed with the idea; but I found that down hill—and, of course, the same remarks apply to a certain degree to running along a level at a high rate of speed—the efficiency fell off in a very marked degree.

The nett result of my experience was that up to about fourteen or fifteen miles per hour I could detect no loss of efficiency as compared with the pneumatic tires, but, curiously enough, a far more smoothly-running car; but over this speed I noticed a loss of efficiency, and the faster one went the greater the loss.

I can only put this down to one thing, and that is, that, as you all know, as the wheel runs there is, as it were, a wave formed, which is given out again at the back of the tire. This, in a tire filled with air at a high pressure, gives an exceedingly quick return at the back of the tire, so that it to a certain extent minimises the loss consequent on making the wave in the front of the wheel; but in a tire filled with jelly this return is not sufficiently rapid when travelling fast to give back what one has lost until after the tire has left the contact of the ground.

Perhaps, however, Professor Boys can assist us in this direction, and explain what is, at any rate at first sight, a little curious.

Of course, another very great advantage of pneumatic tires is the way in which they reduce the noise on a car when running—firstly, from the road jar, and secondly, because they seem to deaden the sound of the engine.

Going back again for a moment to my not having had the opportunity, so far, of trying a material sufficiently thin and flexible to prevent damage through bending and still of

sufficient strength to stand the air pressure up to whatever is necessary to support the weight of the vehicle, I hope shortly to have a pair of tires made on purely cycle lines, that is, with tangential fabric, exactly similar to cycle tires, but of course with the fabric of far coarser material to stand the extra work.

The threads of this material have to convey the power from the rim to the road, and it will be obvious that if this power can be conveyed through the straight lines of the fabric, which, as you will know from the section, are quite straight, or rather parallel with the driving force, it is far better than conveying the power through the wavy threads which go to make up canvas, owing to the interweaving of the weft and the woof of the canvas, as directly the strain comes upon the latter these threads have to be pulled tight before the power is transmitted, whereas with the fabric there is no slack to be taken up.

In bicycle tires the difference between a tire made with fabric and one with canvas is at least three miles per hour, and the difference in efficiency quite, I should say, 20 per cent., so that when we come to heavy vehicles, such as our automobiles, the gain should be quite as much, if not more.

Another advantage in its favour is that fabric, when meeting an obstacle, will depress particularly at the point of the contact, and the depression will spread very little away from that portion of the tire that is pressing on the obstacle; but when one depresses a canvas tire the area of depression continues for quite a considerable distance on either side of the point of contact, thus making it very difficult for the obstacle to sink into a tire pumped to a pressure identical with the fabric-lined tire; so you will follow from this why I am hoping for much better results from an efficiency point of view if a fabric tire can be successfully made.

Referring to the advantages of pneumatic tires as applied to automobiles, these at present are:—

First.—Greater power and speed with same type of car, particularly speed, than is the case on a car with solid tires.

Second.—Improved steering of the car.

Third.—Reduction of noise.

Fourth.—Reduction of vibration.

Fifth.—As there is reduced vibration, so there is increased life to the car.

Sixth.—And one which I think is as important as all, but which, of course, is personal, that having once used pneumatic tires you do not enjoy driving on solids, for the same reason as a person having once ridden a pneumatic-tired bicycle would almost prefer to go for a walk rather than ride a solid-tired machine.

The disadvantages at present are:—

First.—Heavy initial cost.

Second.—Comparatively speaking short life as compared with cost.

Third.—Increased risk of accident when en route.

With these points before you, gentlemen, you will probably one and all form some idea of what the ideal tire must be, but in this I will forestall you by giving you the points which I think must and which I think will eventually go to make up the ideal tire for automobiles.

First.—A tire that will run on the driving wheels 10,000 miles if kept properly blown up and the cuts attended to.

Second.—A tire which if punctured is easily repairable. By easily I mean one that can be taken off, repaired, put back and blown up again inside of fifteen minutes by the ordinary user. This, I think, for an automobile tire would not be harassing, as the trouble should seldom occur.

Third.—A tire which is absolutely perfectly attached to the rim, and cannot leave the rim if it becomes deflated whilst running down hill, but must be deliberately removed by hand.

- Fourth.—A tire which, if run on for a few miles when deflated, will not be irretrievably damaged.
- Fifth.—A tire with the greatest amount of air space and consequent comfort, in comparison with the external diameter of the tire.
- Sixth.—A tangential fabric tire which will convey the power from the rim to the road in straight lines with a minimum amount of loss.
- Seventh.—A rubber cover under compression when in contact with the road, so that cuts close up and do not gape.
- Eighth.—A valve which is mechanically attached to the inner tube without solution or vulcanisation.
- Ninth.—A valve which is an absolutely automatic non-return, without rubber or any perishable material in its construction, and which also has a mechanical device for making it air-tight, to act as a safeguard to the automatic device.
- Tenth.—A pump which will do its work with the least number of strokes, and with the least loss of air per stroke, without at the same time requiring a Hercules to push the plunger down at every stroke.

### THE DISCUSSION.

Mr. H. J. Sturmeys said Mr. Edge's paper had completely covered the question, and his experience had largely corroborated his (the speaker's) own views as deduced from experience of cycle tires. He had not had the opportunity of much experience with pneumatic tires on motor-cars, because there were very few, except the motor-cycles, fitted with pneumatic tires in this country, owing to the great expense. He knew that makers on the Continent were absolutely in favour of the pneumatic tire, and in Paris and Brussels it was considered that pneumatic tires made a difference of 25 per cent. in the running of the machine. That was a great deal, and yet he was inclined to think, especially with the heavier vehicles, that the gain must be near the figure quoted, because it was of such a sweeping kind—in the life, the power, the absorption of vibration, and the consequent lessening of the work to be done in propelling the car. The experience of those on the Continent who had used and are using pneumatic tires very largely was not favourable if the expense was considered, for it was an undoubted fact that those who availed themselves of the benefit of these tires had to pay for it. Mr. Edge had set forth a good ideal, and if they were to get tires to be depended on to stand 10,000 miles of ordinary running, people would not hesitate about the expense, although even then it was a considerable item. At first sight he should have been inclined to think that pneumatics would slip considerably more than the solid; but Mr. Edge's experience was that upon a motor-car the tire acted almost the same as on a bicycle. The point as to the advantage in steering was a distinctly good one, which he had himself noticed in the two or three cars fitted with pneumatics that he had tried. In the small Daimler experimental car fitted with pneumatics and steered by an 8-in. wheel, the slightest movement of the hand steered the wheel. There was no strain, no kick back, and the steering was practically perfect. Probably no man in this country had gone so fully into the points of manufacture as Mr. Edge, and he was glad to see the recognition of the tangential fabric. If an air-tube could be got without canvas or bending material which would hold a column of air, a faster tyre than that of to-day could be obtained. That was an impossibility, and therefore they would have to be content with getting as near that point as possible, and he who got nearest would win in the end.

Mr. F. R. Simms said he had recently made some experiments with regard to pneumatic tires, and hoped to shortly show them a tire approaching the ideal. He had found that in many cases the side slip was very excessive in motor-cars when pneumatics were employed. In the forthcoming exhibition he hoped to show a tire to stand at least 6,000 miles, which was easy of repair, and which had an interchangeable tread. Mr. Simms referred to the experiments made by Professor Hewins, of Cambridge, who had found that the rolling resistance of pneumatic tires on a smooth surface was almost entirely *nil* compared to the velocity. That ought to be borne in mind when building a new tire.

Mr. MacLulich thought the inflation of the pneumatic tires should be increased according to the weight of the car. If the latter was very light the tire should not be inflated so hard as it would be for a heavy car. That was best judged by the hinging action from the tire. A tire that was inflated sufficiently would not show any bulge at the point of contact with the ground, and it might not be necessary to inflate it to the pressure of 160 lbs. He did not see that increasing the number of layers of canvas would add to the tendency for the tire to act as a hinge if it were built up in the proper way, *i.e.*, if the outer layers were built up in the shape it would take on the rim, so that the outer layer would be larger than the inner one. Fabric was better than canvas, but he did not see that the number of layers would interfere with the running of the tire.

The inner tube as now made was liable to burst in a tire without the tire bursting, owing to its being too thin. If it were a thick tube there would be no difficulty, because it would be able to stretch a little without bursting. As regards the compression on the outer tread he suggested an endless compressed band or tread to be fitted over a thin cover, which could be easily and cheaply renewed, and which would have no joint to open.

Mr. Hemming dealt with the point raised as to solid tires giving the most slip on a stony, rough road and the pneumatics giving more slip on a greasy road. This he did not think was very extraordinary. On the stony road the solid tire would not absorb a stone, but would hit it; and unless it hit it on the centre line it would slide off and give a tendency to the side slip. On the other hand, a pneumatic tire would probably absorb the stone, even if it did not hit it exactly in the centre. The reason that a greasy road gave more slip to the pneumatic tire was that the surface when turning the corner was somewhat increased, and was not increased to any appreciable extent with a solid tire. When the pneumatic tire pressed on the road an elliptical surface was formed, but it was not so distorted in the solid tire, because it would not give, whereas in the pneumatic it would be flattened. When a side thrust was given a bigger surface was obtained, and with that larger surface and constant weight there was less friction than in the case of a less surface, also lubricated as it would be on a greasy road. Therefore, they need not be surprised to find that the pneumatic tire had more slip on a muddy road than on a stony one. With regard to the bending of the canvas, he pointed out that fabric could be bent about without being injured, but if a piece of indiarubber was bent against a hard steel rim friction resulted. A canvas tire would stand a very considerable strain—more than the rubber one would. To get rid of these conditions they would have to combine a solid tire with a pneumatic tire. That could be done, and, as a matter of fact, was done, but he was not at liberty to speak about it.

Mr. Lyons Sampson referred to his observation of cars fitted with solid and pneumatic tires respectively, and it seemed to him that the slip of the pneumatic tire was actual, *i.e.*, it slid over the greasy surface, whereas with the solid tire it was, in a great many cases, only apparent. If the car was going on the side of the road or turning round a corner, there was a side tendency or strain that bent the rubber over. As the wheel kept rolling on, it rolled from the strained rubber on to the unstrained, and that yielded without any actual skidding on the surface of the road. There was a very marked apparent slip, and he had stopped the car and gone back to examine the track to find that this was the case. When he had found the car slipping that way on a dry surface he had watched the front wheel, when it was quite apparent that it was through the bending of the rubber. The wheel kept rolling from the strained to the unstrained rubber, and without actually slipping the car made considerable side way, and in cases where there was only fourteen or fifteen inches to spare the kerbstone might be touched.

Mr. A. Bird pointed out that they had got to look at a pneumatic tire as being built up of parts—one, the inner or tube, another the fabric which retained it, and the other the tread, which at certain intervals should be renewed. He had had experience with pneumatics on horse-drawn vehicles, and the results were most satisfactory, particularly as regards their durability. There were several reasons why pneumatics were apt to wear out quickly on motor-cars where the strain of driving the vehicle was added to the rolling action of the front wheel. It had been found necessary to have a certain number of layers of canvas fabric, and when the car was being driven the strain had this tendency upon the canvas—that the threads which were parallel with the wheel were stretched very tightly in order to get the power to the driving wheel. They were drawn over the threads running at right angles, and a sawing action set up until the cover began to give way, and ultimately burst. The threads should be laid inside the rubber, forming the cover of the tire, and should be insulated, and not in contact one with the other. He had a motor-car with pneumatic tires, and had not found the side slip very serious in ordinary driving. There was a distinct advantage in running over tram lines with pneumatic tires. Solid tires sunk into the rails, and there was thus an increased danger of side slip, but the pneumatics left them easily.

Mr. C. Jarrott confessed to having had a partiality for solid tires until he had been converted to a belief in pneumatics by trying Mr. Edge's car. They had heard of the difficulties attending pneumatic tires, but there were also troubles associated with solid tires. He had known them to come off, and related a personal experience in Buckinghamshire when the solid tire of his car sunk into a rut which had been filled in with loose gravel. On the question of surface on the road, a French manufacturer had told him that the tires should be pumped sufficiently hard for the weight of the car, that not more than half an inch should rest upon the road.

Mr. Vernon Beaumont thought the Club was very much indebted to Mr. Edge for his valuable paper. What was wanted to get a perfect tire was the greatest amount of freedom for the perfectly elastic air contents of the tire. Every thread of the fabric should be placed in a position to receive and transmit the strains and, at the same time, be in a satisfactory position with regard to the air pressure. Speaking on the width of the tires, he said iron tires running on a muddy road, the mud of a rather fluid character, gave just as good results whether wide or narrow, but if the mud was a little thicker and more viscous, narrow tires would be better than wide ones. He was inclined to think that some of the experiments were a little masked in their real meaning by the difference in the width of the pneumatic and the solid tires. There were many other useful

points in the paper—the facility of taking off and putting on again the thick or thin tire, and the wear of the canvas, not only the inside structure of the tire, but that actually next the inflated tube, etc. Mr. Edge deserved their thanks for his extremely useful suggestions, which would no doubt lead to further consideration of the subject.

The Chairman (Professor C. Boys) congratulated the Club on the paper by Mr. Edge. He was interested in the statement that after running some distance with one tire fully pumped and the other loose, the latter was quite hot from internal friction. Due regard to heat should always be observed. If they were trying to get work in an engine from heat, a very small proportion of the heat employed could appear as work. So that when a tire got hot it should be known that, at least, an equivalent of that heat had been spent as real work, resulting in waste, besides being terribly destructive to the tire. Mr. Edge hinted at a thing being right in theory and wrong in practice. Such was impossible, for if it was right in theory, in every detail—if, in fact, it was perfect—it must be right in practice. Otherwise the theory was wrong. It was surprising to hear that the advantages of modern pneumatic tires as applied to bicycles and other cycles had not been made use of in tires for motor-cars. The two problems were identical, and he did not understand why those who made tires for the heavy machines should not take advantage of the experience gained by those who provided for the wants of cyclists. A few years ago the heavy air-pressure to which Mr. Edge referred as being held in thin rubber or canvas would have been regarded as impossible. And yet such was accepted to-day. But if these high pressures were to be seriously dealt with, the question arose as to whether they should follow precisely the practice of the maker of bicycle tires in placing the layers of threads at angles of 45 degrees to the rim. He asked whether, if they were going to take six layers of fibres, two, three, or four should not be placed at right angles to the line of the rim, so as to withstand and not be concerned in transmitting the driving force at all, and the remaining two or three portions of the fabric at 45 degrees as before. Or it might be more convenient to put all the threads at an angle of 70 or 80 degrees.

Mr. Edge, replying to the discussion, pointed out that in the Paris to Amsterdam race the solid-tired cars were unable to go through. With regard to side slip it was slower on a pneumatic than on a solid tire, and there was often plenty of time to correct it. His car once turned completely round on to a cabman, who was so taken by surprise that he ran into another cabman, and then wished to argue with the driver of the motor-car. (Laughter.) It was a curious experience, and the only time the car had taken control of him. Evidently there was some kind of lubrication on the road, which gave no grip at all. He had fixed 10,000 miles for his ideal tire, because then a tire was provided that would cost no more than a solid one. He felt there was a great deal in Mr. Lyons Sampson's observation of the apparent slip, and it was the "give" in the rubber that constituted the danger, making the driver think something was wrong. Pneumatic tires on motor-cars had not been a success because they had not been kept pumped; that was apparently too much trouble. With regard to tires, it would be perfectly reasonable to tell the manufacturers that they wanted the fabric of the tire for the front wheel with threads at a different angle to that of the back wheel, as each wheel had different work to do. He favoured a thin outer cover. Solid tires were worn away, but pneumatic tires had little or no wear on the surface from actual running. The rubber cover was destroyed through the cutting effect of stones. The eventual outcome of automobile cars would be the introduction of larger tires requiring a less pressure of air. The suggestion of Professor Boys for a tire that would take a driving and bursting strain independently was a great step towards a perfect tire. Those two heavy strains should be provided for in independent ways, and each layer would then do some useful work.

A vote of thanks to Mr. Edge having been adopted by acclamation, a similar compliment to the Chairman brought the interesting proceedings to a close.

MR. J. WALWYN WHITE has accepted the position of honorary treasurer to the Liverpool Self-Propelled Traffic Association, which body is also the local centre of the Automobile Club of Great Britain and Ireland.

WE learn that the Newport Pagnel and Olney motor-car service is so successful that it is contemplated to establish another service between Newport Pagnel and Bedford, a distance of 13 miles.

NORTH AMERICAN AIRMOTOR Co., New York, has been incorporated in West Virginia, to manufacture and sell apparatus operated by compressed air, steam or electricity. Authorised capital, \$1,000,000.

THE American Automobile Co. has been organised at Portland, Me., U.S.A., for the purpose of manufacturing and dealing in waggons, motors, dynamos, generators, and other electrical machinery, with \$250,000 capital stock, of which \$600 is paid in.

## PROSECUTION FOR FURIOUS DRIVING IN BRADFORD.

AT the Bradford City Police Court, on the 6th inst., Robert R. Jackson, of 73 Horton Lane, secretary of the Yorkshire Motor-Car Company, Limited, was summoned before the Stipendiary Magistrate (Mr. C. Skidmore) for furiously driving a motor-tricycle. Police-Constable Marshall stated that on Saturday afternoon, February 25th, his attention was directed to the defendant, who was driving a motor-tricycle at an excessive speed. The defendant travelled round the Town Hall a number of times; a large crowd assembled, and there were several narrow escapes. Witness stated that he took observation of the time occupied in passing from one point to another, and afterwards measured the distance. He found that the cycle travelled 250 yards in 30 seconds, or at the rate of seventeen miles an hour. The defendant admitted the offence, and explained that he was testing the brake power.—Mr. Skidmore: Good gracious! Testing brake power round the Town Hall!—Defendant: It was perfectly safe.—Mr. Skidmore: It was safe for you, but not for other people. The road is meant for everybody, but people with carriages and bicycles seem to think that they have a monopoly.—The constable's evidence was corroborated by Mr. Henry Bright, tramways manager, who said that he was driving at the time, and that if he had not pulled the horse upon its haunches a serious collision would have occurred.—The Deputy Chief Constable (Superintendent Byng) stated that numerous complaints had been received respecting the furious driving of motor-cycles in Manningham Lane.—Defendant: It was a new motor, and I was, perhaps, overjoyed with the success of it.—Mr. Skidmore: These gentlemen were not overjoyed. Most valuable lives are sometimes contained in the Town Hall. (A laugh.) It is quite dangerous enough crossing the square with the tram engines, without any new terror being added.—Mr. Skidmore proceeded to caution the defendant that any future offence would be severely dealt with. It was intolerable that motor enthusiasts should use their machines in such a manner through overjoy, and to the danger of the public.—A fine of 10s. and 12s. costs was imposed, with the alternative of ten days imprisonment.

## NEW COMPANY REGISTERED.

### AMERICAN AUTOMOBILE AND MOTOR COMPANY, LIMITED.

THIS Company was registered on February 28 by Snell and Co., 1 and 2 George Street, Mansion House, with a capital of £80,000 in £1 shares (60,000 preference). Object: To carry on in all or any of their respective branches the businesses of electricians, engineers, machinists, builders of and dealers in carts, waggons, motors, cycles, and vehicles of every description; omnibus proprietors, carriers, etc.; to acquire and turn to account any real or personal property. The signatories are:—

|   | Shares. |
|---|---------|
| F. L. Gardner, 32 Jewry, E.C. ....  | 1,000   |
| S. B. Schlesinger, 169 Boulevard Malesherbes, Paris, gentleman ..             | 1,000   |
| P. Soberano, 29 Avenue de la Grande Armée, Paris, gentleman ..                | 1,000   |
| Viscomte Perrault de J. de Feuillasse, 1 Boulevard Point Bugeaud, Paris ..... | 1,000   |
| R. de la Ville le Roulx, 50 Avenue Marceau .....                              | 1,000   |
| R. C. Aldrich, 47 Boulevard Haussmann .....                                   | 1       |
| F. C. de Soul, 47 Boulevard Haussmann .....                                   | 1       |

The number of directors is to be not less than three nor more than seven. The first are F. L. Gardner (chairman), A. Geiger (vice-chairman), S. Schlesinger, R. de la Ville de Roulx, Baron P. de Vilaine, and P. Soberano. Qualification, £1,000. Remuneration, £500 each per annum.

## ANSWERS TO CORRESPONDENTS.

- E. SHRAPNELL SMITH.—Many thanks for information and expressions of goodwill.
- R. M. BODDY.—Your suggestion shall receive due consideration, but we fear it is impracticable.
- J. R. M.—Thanks for information, which you will find duly commented upon in this issue.
- "DISGUSTED."—You are by no means the only purchaser of these vehicles who has complained of the same matter. You cannot possibly do better than put yourself in the hands of Messrs. Connolly, who are personally as obliging as they are prompt in attention.
- F. J. MILLAR.—We shall be glad to hear from you when your projected tour is completed. We have forwarded to the address given the desired particulars, and thank you for your interest.
- "ALCOHOL."—So far as we know, no attention has been paid to the subject in England. Its use would be more expensive, but freedom from odour of the exhaust gases is gained. Relatively the power gained is less.
- F. W. B. (Penge).—Thanks for good wishes and promise of assistance, which will be valued. We have written you.



# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.



### Ourselves once more.

WE are extremely loth to intrude in these columns once more, but unfortunately necessity compels us to refer once again to personal matters. We are extremely proud, and exceedingly grateful to the many friends and acquaintances, and the still more numerous entire strangers, who have written us congratulatory letters in regard to the first issue of *The Motor-Car Journal*. The terms of praise used in their letters made us blush for the reason that we are greatly afraid they are really undeserved. We were, ourselves, by no means satisfied with the first issue of our Journal, and it has therefore astonished us that so many kindly-disposed persons have been so thoughtful as to send us words of encouragement. Will these gentlemen, numbering considerably over 200, kindly accept our thanks, as here conveyed? It is beyond our power to reply to all personally, and we trust that this public appreciation of their kindness will be accepted. For our own parts we are utterly astonished at the reception the Journal has received. We knew we were dealing with friends, so to speak, but the number of these friends who have purchased and ordered our Journal regularly astonishes us. Again we tender our thanks, and trust to deserve more fully in the future the commendations showered upon us.

### The Motor-Car "Horn."

OF all the so-called "objectionable features" of the motor-car from the public's point of view perhaps the "trompet" or horn is that most objected to. It is unfortunate that so horrible an instrument has been generally adopted by automobilists both in France and in this country. Unfortunately, however, some distinctive sound had to be found, and the quite distinctive tones of this instrument immediately appealed to those responsible for the introduction of motor-cars, with the result that the "trompet" has been generally adopted. The novice or amateur certainly uses the horn much more frequently than the expert, and this occasionally leads to his undoing. It is our own experience that horses are much more frequently startled by the sound of the horn than by the noise of the approaching or passing motor-car. The novice, or young amateur, having used the horn to such an extent that the horses in his vicinity are startled and become partly beyond control, is in an infinitely worse state than the expert under similar circumstances, for the nervousness of the novice will perhaps lead him into further difficulties, whilst the expert, knowing the capabilities of his vehicle, extricates himself with confidence. The law compels the blowing of the horn or the giving of some similar signal under certain circumstances, but beyond this, to avoid trouble and to save annoyance, it is advisable that the horn should be used as little as possible. Speaking generally, it is the bad driver who uses the horn most, and so brings motor-cars into disrepute by creating unnecessary alarm to other travellers. In overtaking a horse-drawn vehicle it is best to sound the horn when some distance behind, and so soon as it is seen that the signal has been noticed to avoid its

use again until past the "hippomobile." Of course it is sometimes necessary to use the horn when quite close to a horse-drawn vehicle—for instance, when it unexpectedly turns out across one's path; but even on such occasions two moderate and short blasts are generally sufficient to warn the driver.



### Torquay and its Motor-Car Service.

CERTAIN inhabitants of Torquay—that centre of almost rabid conservatism—are "up in arms" at the "furious driving" of motor-cars along the Strand and the Torbay Road, whilst others are also "up in arms" against the "design and appearance" of the car. As regards the design we understand that they are *chars-a-bancs*, designed to carry nine persons, propelled by 4 h.p. nominal Daimler engines, and speeded only to twelve miles per hour on the fast speed, so that "furious driving" would not appear possible, excepting the streets were overcrowded, which is not alleged. One correspondent in a local paper asks: "Why should Torquay be chosen as an experiment for these cars in their present crude and unfinished condition?" But the correspondent does not allege that the cars are inefficient, nor that they show any faults in travelling. The truth of the matter is that the inhabitants, or rather natives, of Torquay are so used to battenning and feeding on visitors, and so religiously keep in their own hands any and every possible means of "bleeding" visitors, that they resent the advent of any "outsider" who seeks to derive a profit from those preserves which they look upon as their own. If the cars had been run by a local man, or a body of local men, all would have been well; but unfortunately they are run by a London firm. Hence these tears!



### A New American Motor-Car.

AMONGST the latest American productions in motor-cars is a new form of petroleum-spirit vehicle, built on what may be termed a "compound dog-cart" form, and carrying eight passengers. The weight of the vehicle, with cooling water and spirit on board for 150 miles travel, is said to be 2,570 lb. The motor is of 7 h.p., its two cylinders being placed horizontally, and the piston rods working on to one crank set at 180 degrees. Electric ignition is employed, and for starting the motor a compression release is provided. The speeds are set at from 4 to 20 miles per hour, the speed variation being obtained by a system of friction clutches, with belt and chain transmission devices, controlled by a lever at the driver's side. Additional variations of speed are attained by advancing or retarding the ignition. With a load of 1,800 lb. this car has attained a speed of 18 miles per hour, whilst on a low-speed a 10 per cent. gradient was climbed. The fore-wheels rest on pivoted hubs, and not on the usual vertical axles. Two brakes are provided, and the differential gear is placed on the intermediate shaft. The frame is of channel steel. This vehicle is the production of the Best Manufacturing Co., of San Leandro, California, U.S.A.

### A Long "Non-Stop" Run.

MR. PEDLEY, of the London Motor-Van and Wagon Company, Limited, recently had a fine run from London to Clacton-on-Sea, a distance of seventy-two miles, without stopping to take in cooling water. This distance was accomplished during the night in five hours and ten minutes in a *char-a-bancs*, he being the only passenger. Until Romford was passed his journey was considerably interfered with by the market carts proceeding to London. The top speed gear of the car was only twelve and a half miles, but, of course, Mr. Pedley "dropped" the hills. The water supply carried was eighteen gallons, and of this quantity six gallons remained on reaching his destination. Four gallons of petrol were carried, but sufficient remained at the end of the run to drive the car another eight miles. Mr. Pedley states that this was the most enjoyable of the many long runs he has negotiated, and we can quite appreciate his pleasure and enjoyment in the trip. Can any of our readers give an instance of a longer "non-stop" run?

### Steam Turbines for Motor-Carriages.

AN ingenious writer in a contemporary has suggested the use of steam turbines in connection with motor-carriages. He complains of the vibration of the petroleum motor, and thinks the adoption of the steam turbine would be an advantage. Unfortunately the writer in question does not quite appreciate the problem. Many attempts have been made to design a rotary impulse or explosion engine, but none have been commercially successful. In regard to carriages fitted with steam engines there has been no complaint as to vibration arising, whether the engines have been of the vertical or the horizontal type, or whether simple or compounding. Indeed, it is difficult to see how any noticeable vibration could ensue with an expansion engine. The turbine is, therefore, not especially needed, and besides would hardly be efficient unless working under some such tri-compounding method as in the Parsons turbine. The whole problem to be solved in steam-carriages is the generator, the automatic and positive control of the generation of the steam, the control of the fuel or evaporating agent, and the avoidance of the emission of waste gases (smoke) and excess and exhaust steam. We do not think even Mr. Parsons, say, would consent to endeavour to solve the problem of driving his excellent "Turbinia" without emitting any smoke, and without allowing his steam generators to "blow off," no matter how sudden the stoppage of his engines or how sudden the demand for steam to drive them again. The writer in the *Irish Field*, will, we trust, appreciate these difficulties, and, whilst continuing to offer experts the undoubtedly valuable suggestions of his fertile brain, will, we hope, take into consideration these and other problems of road locomotion as governed by law before attempting to "dump" a steam turbine on a motor-road vehicle.

### Winding-up of the London Motor-Car Works Company, Ltd.

A WINDING-UP order having been recently made against this Company, meetings of the creditors and contributories were held on the 14th inst. at the Carey Street offices of the Board of Trade. Mr. Cully, Assistant Official Receiver, who presided, reported that the Company was formed in November, 1896, with a nominal capital of £10,000 in £1 ordinary shares, to acquire for £4,000, payable in shares, a licence and privilege to use a patent relating to gearing and speed controlling of motor-cars, and to make and sell motor-cars. The invention was not perfected when the licence was acquired, and experiments were carried on under the supervision of Mr. J. R. Rickards, the vendor, who was appointed as managing director, with a view to perfecting it before placing it on the market. A

prospectus was issued privately to friends of the directors, but only 1,800 shares were applied for and allotted in response thereto. Premises were taken at Hammersmith, and plant and machinery were laid down at a cost of £1,329, but six months after the inception of the Company the working capital became exhausted, and the works had since been closed. An arrangement was entered into by the Company with the Cycle-at-Home, Limited, to manufacture home trainers for the Company, but only fifty machines were completed before the stoppage. Accounts had been filed under the liquidation showing debts £727, assets £978, and a deficiency of £5,563 to the shareholders. The matter was left in the hands of the Official Receiver to be wound up by him in the usual manner.

### Motor-Car Service at Swansea.

IN the course of last week, at the invitation of the directors of the Swansea Motor-Car Company, a party of ladies and gentlemen assembled for the purpose of inaugurating the Company's service of cars by a trip to the Mumbles. Amongst those present were Mr. John Williams (Clayton), chairman of directors, Mr. Ernest Leeder, Mr. J. C. Morris (Swansea), and Mr. William Morris (Pontypridd). Two motor-wagonettes were used, and the party were taken to the Mumbles and back to Swansea by way of the steeper gradients of Sketty. The trip went off without a hitch of any kind. A half-hour service is being arranged between Mount Street and Sketty. The greatest interest was manifested by the public on the route of the trial trips.

### Motor-Vehicles in Boston, U.S.A.

IT is reported that the Mayor of Boston, U.S.A., is experimenting with two types of motor-wagons with a view to their ultimate adoption in the municipal service, especially for sanitary, cleansing, and paving works. Boston already has motor-fire-engines, but from all accounts these have not proved so successful as to encourage the belief that horses will be entirely superseded for the purpose of drawing fire-engines. In the meantime the Mayor has caused two types of vehicles to be ordered, and experiments are to be commenced with them at once. Ultimately the municipality hopes to build its own vehicles, buying certain parts, such as engines, etc. Increased interest is being taken in motor-cars in the United States, and Buffalo is now calling for motor-cabs and carriages.

### Motor-Car Service in Scotland.

A LADY correspondent domiciled in Scotland, in writing a complimentary letter to us on *The Motor-Car Journal*, mentions incidentally the pleasure derived from several journeys in motor vehicles in Scotland. She further adds that in her view there is a vast field for public motor-car services in Scotland, and an even greater one for private hirings from jobmasters. In these views she is supported by our regular Scottish contributor, who in his "Notes" this week gives expression to almost identical views. It is thus evident that our contributor is not over-estimating the public desire for facilities for hiring motor-vehicles.

### Motor-Cars in Capetown.

SOME time ago Mr. Liebmann, the Capetown representative of the South African Express Company, was in England purchasing cars for service in South Africa. At the time of his visit we had the pleasure of several interesting chats with him, and he then prophesied that within a short time the Colonial Postal Department would entrust the delivery of mails to his firm by "motor-car express." His prophecy has been fully fulfilled, and the service has been so successful that the three wagonettes and a parcels van

taken out by him for his Company are to be supplemented by several additional vehicles to be built by the same firm that supplied the first, the Motor Manufacturing Co., Ltd.

#### Motor-Ambulances in Canada.

CANADIANS are moving apace in automobilism. In fact, so great is the advance that even the Police Commissioners of Toronto are taking up the subject in the open spirit that characterizes all dealings in the North-West. The latest scheme for the utilization of motor-vehicles is the provision of motor-ambulances. Hitherto both manual and horse-ambulances have been used, and it is now suggested that the hippomobile conveyances shall be discarded in favour of electrically-propelled ambulances. The Board of Commissioners are most favourably disposed towards the suggestion.

#### Trials of the New Benz Car.

ON Saturday, soon after mid-day, we were surprised to see several Benz cars making their way towards Surrey, and noticed amongst the passengers on these cars Mr. Dowsing of the Pretôt Motor Syndicate, Mr. Hewetson (Hewetson, Ltd.), Mr. F. C. Blake, of Hammersmith. Ultimately we learned that Mr. Hewetson intended to try the new Benz car fitted with epicycloidal hill-climbing gear on a "stiff" hill at Guildford, just outside the town. One informant told us this hill was a "mountain," and another that it averaged a rise of 1 in 4 the whole way, and another that it was the stiffest hill known near London. Messrs. Hewetson, Ltd., after the trials very kindly sent us an account informing us that the vehicle, conveying three persons, had ascended the hill in question most successfully. They also informed us that the congregated motor-carists, riding in ten cars, ultimately proceeded to the "Anchor" at Ripley, and from thence to their various destinations. This new hill-climbing gear of the Benz car gives one turn to the road-wheels to every thirty-five revolutions of the motor, and its speed of travel would therefore appear to be about 2½ miles per hour under the best conditions. Messrs. Hewetson unfortunately omitting to give us any data concerning the hill surmounted—the Mount—we had to make enquiries elsewhere, and in order that there might be no disputes, over-estimations, denials, and the usual conflicting statements, we appealed to the Borough Surveyor, Mr. C. G. Mason, A.M.I.C.E., who with his usual courtesy replied as follows:—

"The gradient of the 'Mount' is 7·8 for the first part of the hill, and the remainder varies, giving an average of 1 in 16."

We invite Messrs. Hewetson, and also all other makers, to give us previous notice of any such trials, and we will endeavour to have a representative present thereat.

#### Electrical Ignition Devices.

ALL users of motor-cars working on the electric ignition system, know how absolutely necessary it is to have a thoroughly dependable induction coil and sparking plug; many users also know how difficult it is to obtain these devices. Unfortunately, there is an impression in some quarters that if a coil gives a long spark the desideratum is reached; that this is not so any electrician will admit. The length of spark is practically immaterial so long as a flaming spark is produced. The long blue spark will unfortunately not ignite the charge when heavy compression is used, and what is really wanted is a "fat" flaming spark. So far as we have been able to ascertain, Mr. Blake, of Dalling Road, Hammersmith, has devised one of the best ignition coils yet on the market. It gives, even with an E.M.F. of 2 volts., a "fat" spark that almost instantly ignites a piece of cold match stick, and when an E.M.F. of 4 volts. is used the wood

is positively lighted instantaneously, even when quite cold. These coils are fitted with large platinum contacts, and will stand the heavy and continuous work inseparable from igniting the charges in high-speed engines. The secondary winding is amply protected, and the condenser is made with the utmost skill. Sparking plugs of many types also give some amount of trouble, and Mr. Blake, in putting his plugs on the market, has done wisely in discarding the "ring" device and in adhering practically to perhaps the most successful ignition plug known, that of De Dion and Bouton. He has provided, however, slightly longer insulation, and his plug is certainly the best we have seen of English manufacture, and surpasses very considerably many of those made on the Continent.

#### Visit of an American Motor Expert.

WE understand that Mr. Hiram Percy Maxim, one of the staff of the Pope Manufacturing Co., makers of the "Columbia" electric-carriage, was recently in England making enquiries in regard to the hydraulic speed gearing, the invention of Mr. Hall, with a view to its adoption in the vehicles of the Company he represents. Mr. H. P. Maxim has for many years been experimenting with petroleum spirit motors for motor-vehicles, and we have in our possession a photograph of him holding in his hands probably the lightest twin-cylinder petroleum spirit motor ever made. Probably no single person in America has worked more assiduously than Mr. Maxim in endeavouring to solve the extremely complex problems of mechanical road-locomotion, his attention being given to all the descriptions of power, but principally to impulse engines and electrical motors, whilst steam and compressed air have also been his study.

#### "The Horseless City."

AN extremely interesting paper having for a title the somewhat far-fetched heading of "The Horseless City, or the Age of the Automobile," was recently read by Mr. A. L. Riker, before the members of the Quid Nunc Club of New York, a social body of fashionable character. Mr. Riker was well able to discourse upon this subject, as he is not only the President of the Riker Electric Company, but has himself produced some fifteen or sixteen different kinds of motor-vehicles, the result of nearly fifteen years' work. The paper, which was illustrated by lantern slides, besides treating of the development of the motor-vehicle from a historical point of view, took cognizance of the latest developments and popularly described the methods of control, brakes, etc. The paper elicited a fusillade of enquiries, many ladies taking part in desiring further information on points insufficiently elucidated.

#### An American Light Electrical Motor-Car.

THE Orient electric "runabout" made by the Waltham Manufacturing Company, Waltham, Mass., is an extremely popular vehicle in the United States. The frame is made from weldless steel tubing, the forward truck being swivelled to allow for unevenness of road without straining. The rear wheels are 34 inches and the front 32 inches in diameter, and are provided with 4-inch tires. The accumulator has a capacity of 1,800 ampère hours, and the current operates a ¾-k.w. motor. The radius of action is equivalent to about twenty-five miles on good level roads, but the car may be operated on poor, hilly roads with a proportionate decrease in mileage. A new pattern spur differential gear is attached to the driving shaft, which distributes the power equally on the driving wheels, whether running straight or in turning curves. The tractive power on each driving wheel is thus equalized. A 15 per cent. grade may be climbed. A forward range of speed of three to twelve miles, and backward range from three to six miles, per

hour is provided, controlled by a lever on the left of the carriage body. The steering lever is operated by the right hand pressed forward for steering to the left, and pulled backward to the right. The carriage may be turned about in a small compass, the steering wheels being automatically retained at the correct angle to prevent skidding. The brake is operated independently and simultaneously on the hubs of both driving wheels by means of a foot-lever. The weight of the vehicle is 1,000 pounds.

#### Public Motor-Car Schools.

THE letter published in another column of this issue, asking for information as to privately-owned grounds where amateurs may learn to handle vehicles with confidence, opens up a question which, we think, will need solution before long. It is all very well for a vendor of a motor-car to send out the purchaser in charge of a skilled man in order to teach him how to drive, and then to permit the vendor to take charge in some quiet country road, but something more is necessary. We have already had one fatal accident owing to the fact that a purchaser was permitted to take sole charge after about two hours' tuition, and for the benefit of the industry we do not want another similar case. Of course, what is every one's duty becomes no man's task, but surely some solution of the difficulty might be found. The Committee of the Automobile Club plainly do not regard it as their duty to provide such a ground, track, or schooling course, or else the subject would probably have been taken up in preference to many less important ones already handled. The manufacturers and vendors are not sufficiently united, we fear, to run a joint school and track, and the expense would be prohibitive to an individual firm. Does this offer an outlet for utilizing one or more of the, at the present, unprofitable cycle racing tracks? Of course, the cycle tracks, if considered necessary or advisable, could remain, but equally, of course, a fair road not less than thirty feet wide and paved with all kinds of materials and containing all degrees of gradients would have to be formed. It is not necessary that this should be circular—indeed it should in preference be serpentine, with several crossings. Who will be the first to take this matter up? Can we help? We do not care, at the present stage, to enter into the financial aspects of the question, but we think there are business men in the motor industry who will grasp its potentialities.

#### Eastbourne and Motor-Vehicles.

FROM the many recent prosecutions of drivers and owners of motor-vehicles at Eastbourne, that town has been looked upon as the *bête noir* of motor-car owners. It therefore occasioned us some considerable amount of surprise to find that at their meeting last week the Eastbourne Town Council seriously discussed the advisability of employing motor-dust-carts and motor-water-vans. Mr. Clarence Gregson, whom, we believe, has been the most frequent martyr to the police and public spite against motor-cars, has done good service to automobilism in Eastbourne. We heartily commend the Deputy-Mayor, Councillor Harding, and Councillor Lambert for their freedom from the prejudice of many of their constituents. If they want to learn whether motor-dust-vans are profitable, let them write to the Borough Surveyor and Engineer of Chiswick, whose report to his Board last year was a model of what a practical man's report should be.

#### Sale of Motor-Cars by Auction.

MESSRS. PARSONS & SON, auctioneers, of Brighton, recently sold by auction the stock-in-trade of the Brighton Cycle and Motor Company, Ltd., of 9 Marine Parade, in consequence of the expiration of the lease of their premises. The sale attracted a large number of buyers, and

the biddings for the various lots were *exceedingly* spirited. A Beeston Coventry motor-tricycle, 1½ h.p., realized £39; a Coventry motette, seating two persons, 2 h.p., fetched £49; and a Coventry Daimler motor-waggonette, 4 h.p., seating six persons and convertible to a mail phaeton seating four persons, realized £200.

#### Lady Drivers of Motor-Cars.

THE *Referee*, or rather "Dagonet," expresses surprise at seeing a "motor of the yellow chariot order careering wildly up Baker Street" in charge of a lady, accompanied by a lady friend and a "groom." If Dagonet's "liver" or his "mother-in-law," or any of his household impedimenta, will not interfere with his going to Paris, he may see during one short hour on the main boulevards, or in the Champs Elysées, at least twelve "fair driveresses," as he terms them, all "tooling" motor-cars through the Parisian traffic with ease, dignity, and grace. Dagonet's experiences with a motor-car (as a passenger), as recorded in last Sunday's issue of the *Referee*, should be a lasting lesson to him never to go out with a friend on a cheap motor-car. According to this veracious scribe the car jibbed at a hill, with the result that the passengers had to push it up the incline, and on reaching a decline the driver asked the passengers to dismount, as he was not sure of his brake. History doth not say whether the passengers became human brakes. Moral: Neither ride in, nor buy, a cheap motor-car.

#### Educating the Drivers of French Electric-Cabs.

A GREAT deal has been written lately in the popular magazines as to the methods adopted by the owners of the Parisian electric-cabs to teach their drivers to control their vehicles under the varying and troublesome conditions of traffic in the public streets of Paris. The daily newspapers have also devoted space to the matter on several occasions. The first journal to take notice of this matter in England was *Industries and Iron*, and subsequently, in November, 1898, an illustrated and full account of the methods adopted was given. An illustrated description would now prove of little service, but it may be mentioned that the schooling track is 700 yards in length, is paved in sections with every road paving to be found in Paris, has several gradients and one heavy "rompe" or "hill"—of course, artificially made. Over the length of the "course" is distributed various figures of men on cycles, girls wheeling perambulators, etc., all formed in sheet iron, and calculated to imitate the usual erratic road-crossing of Parisians. The pupil-driver's duty is to steer clear of these obstacles, and also avoid other pupils endeavouring to do the same.

#### Shall the French "School" be Copied?

A FACETIOUS correspondent, who has evidently been reading the current month's magazines, writes us asking whether the Parisian School for Electric-Cab Drivers, with all its concomitants of tin men and women, etc., should not be copied or followed in England. Fortunately, he does not allege that the drivers of the London electric-cabs are incapable; for our own part we must own that these men are amongst the finest drivers of motor-cars in England. The way in which they manipulate and control their heavy vehicles through the intricacies of London traffic is really wonderful and deserving of all praise. But none of these men have attended "school." They are all taken for a number of trial runs in a training car under the guidance of a skilled man, and the methods of control are shown and demonstrated to them, but their first trial at controlling a vehicle takes place in the streets themselves. To our minds carefulness is thus much more rapidly developed than would be the case if they had to guide their vehicles between rows of sheet iron dummy figures. It might be held that the risk to the



public is greater, but this is not our opinion, for with danger to human life in their minds their attention is closer than would be the case in dealing with "dummies."

**Public Motor-Car Services.**

IN our last week's issue we spoke of the continued increase in motor-car services in different provincial districts, and this week we are glad to record three more. A syndicate in Sunderland have been trying a motor-chars-a-bancs service in the town, competing against the local tramways. So successful have results proved that they have now placed an order for five more chars-a-bancs to continue and amplify the service. We are informed that passengers literally fight for seats, the disappointed ones retiring to the despised trams amidst the jeers of the occupants of seats. Another development is in the east. At Southend, a syndicate intends to run a service of three motor-chars-a-bancs between that town and Littlestone-on-Sea, and have ordered three cars for the purpose. The Motor Manufacturing Company, Ltd., have been fortunate enough to secure both orders, which speaks well for their vehicles. The third public service to be shortly inaugurated is at Dover, where a company has been formed with a capital of £5,000, £2,000 of which is at present issued, whose business it will be to run steam motor omnibuses between St. Margaret's Bay and Dover, carrying both passengers and parcels. There should prove a remunerative field for such a service, and we think other districts in the vicinity could also furnish profitable trade. The Liquid Fuel Engineering Company, Ltd., are to build the vehicles (carrying twenty-one passengers), and we understand that three are to be ordered on the first proving successful, as we have no doubt it will do. The idea is well supported locally, and the editor of the *Dover Express*, a great enthusiast in automobilism, has expressed the opinion in the columns of his paper that the venture is a most promising one.

**Tires for Motor-Cars.**

MESSRS. J. W. & T. CONNOLLY, the makers of the "Ideal" tire, draw our attention to the fact that under proper conditions it is practically impossible that their tires can be wrenched out of steel rims, as was the case in the recent Harrow accident. These tires, as is now generally well-known, are of solid rubber, and contain two heavy steel wires or round rods through them. The ends of these wires are electrically welded, with the result that so long as the weight of the car is not too great for the section of the tire used, it is practically impossible for the tires to leave the rims. The largest tire at present made by the firm is 2½ in. diameter, and these are recommended for cars whose total weight does not exceed 25 cwt. This firm's tires are equally as well-known for quality as the firm itself is for helpfulness and courtesy.

**The Easter Tour of the Automobile Club.**

THE itinerary of the Automobile Club's Easter tour has been finally arranged as follows:—Thursday, March 30th, London to Reading (40 miles): Start from the Club at 2 p.m., via Turnham Green, Hounslow, Slough, Maidenhead, and Twyford; Club dinner at "Queen's" Hotel. Good Friday, March 31st, Reading to Salisbury (54½ miles): Leave Reading at 9.30 a.m. for Whitechurch (30 miles), via Newbury; 1 p.m., luncheon at "White Hart" Hotel, Whitechurch; 3 p.m., leave Whitechurch for Salisbury (24½ miles), via Andover and Lobcomb Corner; 7.30 p.m., Club dinner at "White Hart" Hotel, Salisbury. Saturday, April 1st, Salisbury to Stonehenge and back and Lyndhurst (35½ miles): At 9.30 a.m. drive to Stonehenge and back (18 miles); at 1 p.m., luncheon at "White Hart" Hotel, Salisbury; at 2 p.m., leave Salisbury for Lyndhurst (17½ miles), via Waddon, Bramshaw and Cadnam; at 7.30 p.m., dinner at

"Grand" Hotel, Lyndhurst. Easter Sunday, April 2nd: Optional drive to Christchurch and Bournemouth; luncheon at "Royal Bath" Hotel, Bournemouth; drive home by Wimborne Minster and Ringwood. Easter Monday, April 3rd: Tour through the New Forest; luncheon at Romsey; at 3 p.m., leave Romsey for Winchester; Club dinner at "Royal" Hotel, Winchester. Easter Tuesday, April 4th, Winchester to London (60 miles): At 10 a.m., leave Winchester for Bagshot; at 2 p.m., lunch at Bagshot; at 3 p.m., leave Bagshot for London (24½ miles), via Sunningdale, Virginia Water, Staines, Brentford and Hammersmith.

**English Electric Vehicles in France.**

NEGOTIATIONS have been in hand for some time past for the introduction into France of the type of electrical motor-carriages designed and constructed by Mr. C. Oppermann, of Clerkenwell, E.C. We now learn from Paris that a company has just been formed in that city (3 Rue Scribe) for the purpose named, with a capital of £4,000, and with the name, La Société Française d'Automobiles Electriques.

**The German Army and Motor-Cars.**

THE German Military Budget would not appear on the surface to have any interest for motor-carists, but a careful investigation of the complex mass of figures reveals the fact that a sum equal to £5,000 has been provided for conducting trials with motor-waggons for the transport of ammunition, forage, victualling stores, etc. When will the English Government follow suit?

**Boston, U.S.A., and Motor-Vehicles.**

BOSTON, the "hub of the Universe," as it terms itself, is showing the customary narrow-mindedness of old cities. It is strong in liking motor-cars—in fact, proposes to build them for the use of its aldermen; but, alas! it has passed a ukase keeping motor-carriages out of its public parks except during the more or less "unholy" hours between 9 p.m. and 10.30 a.m.! Poor Boston automobilists!

**Motor-Bicycles.**

UNDETERRED by the want of any considerable success on the part of other experimentors, inventors continue to set their wits to work to devise a workable motor-bicycle. Not discouraged by the poor results as yet obtained by Charron, Rivière, Giradot, Osmont, and Werner, the attachment of a motor to the popular two-wheeler continues its fascination. Mr. H. J. Lawson is reported to be hard at work at Coventry with an entirely new form of machine of which great things are expected. This will, we understand, shortly be tried privately. In France the latest inventor is M. Arnaud Garreau. In his case the motor is attached to the frame close to the sprocket, the axle being turned by bevel gear. The motor is said to weigh 24 lb., and is started by pedalling in the usual way, the pedals communicating motion to the rear road-wheel. Electric ignition is employed.

ACCORDING to the daily papers, a serious collision occurred in the Waterloo Road, S.E., on Saturday last between a motor-van from Cambridge Heath and a motor-tricycle. The riders of the latter were endeavouring to pass the van, but apparently miscalculated the rates of speeds of both machines, the front of the van crashing into the rear of the tricycle. Fortunately the riders of the tricycle escaped with slight injuries, although the machine is said to have been considerably damaged.

# The Joel Electrical Motor-Carriage.



THE JOEL ELECTRICAL CARRIAGE.

OUR illustration shows a new form of electrical motor-carriage, elegant in appearance and of light weight. It runs very smoothly and noiselessly, and, owing to the way the motors are carried, without vibration.

This carriage has been introduced by "The National Motor Carriage Syndicate, Limited," of 37 Walbrook, London, E.C., to exemplify their patents for electric motors, and an under frame for carrying same, the invention of Mr. Henry F. Joel, A.M.I.C.E., and for storage batteries, the invention of Mr. S. A. Rosenthal; both motor and battery being the result of many years' experimental research and practical trials, with the special object of making them exactly suitable for traction purposes.

The difficulty in designing a motor-carriage to look as unlike a carriage requiring a horse to complete the effect is a great one. There must be the necessary seating accommodation for two or more people, including the driver, with a cover to protect them from the weather, the whole carried on three or more wheels. The ordinary brougham is the embodiment of the all-time past experience of these requirements. In addition, with the motor-vehicle room must be found for the storage batteries and motors, and the carriage must be sufficiently strong constructionally to carry their additional weight, whilst the motor must be conveniently arranged to exert its power.

The two electric motors used in this carriage are of comparatively very light weight and slow speed, as well as of high efficiency—three most necessary features. They are constructed with internal stationary field magnet cores of steel, having twelve poles arranged to interspace equally round a circle with the armature revolving on the fixed axle outside the poles. The field coils are wound centrally upon the core, and are almost entirely enclosed by the steel core

and poles, thus utilizing their greatest possible magnetizing effect. The armature is made with laminated iron rings, having holes for the wires. The winding of the armature is also novel and very effective, giving the least possible waste in the connecting and non-active parts of the wires, whilst the active parts are utilized to the best effect for economical working.

The following are the actual working data of these motors, as supplied to us by the constructors:—

| Type.             | Nominal<br>B.H.P. | Speeds<br>Revs. per<br>Minute. | Weight<br>of Motor<br>in lbs. | Electrical<br>Efficiency.       |
|-------------------|-------------------|--------------------------------|-------------------------------|---------------------------------|
| J.M. <sup>2</sup> | 2                 | 600                            | 112                           | 80 to 90%<br>According to load. |

These motors will run at quarter-speed = 150 revolutions per minute, half-speed = 300, and full speed = 600 as required. They are made to give 50 per cent. more b.h.p. for short periods, and will give 100 per cent. more power, or 4 b.h.p., if pressed. Carbon contacts or brushes are used on the commutators, and the motors will run either forwards or backwards without sparking.

The two motors, as will be seen from the illustration, are placed under the carriage, a little in advance of the back wheels which partly screen them, and they are not in any way unsightly; the motors are completely encased and weather-tight.

The under frame is one of the most important features in the success of this carriage. It is made of steel tube to form a rectangular frame suspended on springs, and connects the front and back axles of the carriage together; it takes the

place of what is known to coachbuilders as the "perch bar." This frame carries the two motors quite independently of the carriage, so that no vibration or shock is felt in the carriage when the motors are started or stopped, or when running. At the same time the frame is perfectly resilient under all conditions of the road, rough or smooth, and the motors and gear, whilst being kept in constant distance and tension, are elastic and free to give under stress, such as rough jolting or sudden strain due to temporary excess of electric current. In practice, this frame has been proved to safeguard the motors from jar or shock, whilst the riding in the carriage is most comfortable and easy.

The two motors drive the two back wheels independently—one to each wheel—by means of ordinary bicycle chains. The revolving armatures have small sprocket tooth-wheels fixed on one side, and the chains gear with these and then over a larger wheel or rim pulley fixed to the spokes of the back wheels, and thus propel the carriage. In the vehicle illustrated the outside rims of these larger pulleys are cased with leather, and the chains drive the carriage wheels by friction, just as a leather belt would do, the chains in this case acting as endless metallic belts with the exception that the small sprocket-wheel on the armature gives a positive drive to the chain. In other carriages introduced by the Syndicate both wheels have teeth for the chain in the usual manner. The special driving employed in this carriage, however, has been found to be very efficient, convenient for turning, and to give enough grip to propel the carriage up hills of 1 in 8.

The advantages of using two motors are the saving of the balance gears or differentials, whilst the slow speeds, 300 to 600 revolutions per minute, entirely obviate the necessity for the usual intermediate speed-reduction gear, and thus both weight and loss of power from friction are saved. The two motors also allow convenient control of speeds, and are self-adjusting for turning round corners, the motors automatically giving the difference in speeds as the turning movement requires. The constructors believe the practice of using two slow speed motors directly geared to the two driving wheels is the simplest and most efficient means of electric propulsion.

The storage batteries are arranged in four boxes of ten cells in each, or forty cells in all; two boxes go under the front seat and two go under the back seat, and are not noticeable. Each box of ten cells weighs under two cwt., and is easily handled and taken in or out of the carriage. The cells are furnished with pasted plates, the paste being so constituted that whilst it gives the greatest efficiency of active material, it retains its shape and compact adherence to the plates. The supporting grids are specially designed to allow free expansion and to avoid sulphating from local action. These cells have been submitted to most searching trials for over six years on carriages, cycles, boats, and in portable electric miners' lamps, and we are informed that such a thing as sulphating, the great cause of failure in most other batteries, is almost entirely unknown in these cells.

The following particulars of the cells used in this carriage have been furnished by the makers:—

| Weight Complete Cell. |        | Normal Rate of Charge. | Capacity in Ampère Hours at |                        | Watt Hours of Complete Cell at 20 Ampères Discharge. |           | Remarks.                               |
|-----------------------|--------|------------------------|-----------------------------|------------------------|--|-----------|--|
|                       |        |                        | 20 Ampères Dis-charge.      | 40 Ampères Dis-charge. |  |           |  |
| lbs.                  | Kilos. | Ampères.               |                             |                        | Per lb.  | Per Kilo. |  |
| 22                    | 10     | 20                     | 140                         | 120                    | 13   | 28.6      | 17 Watt hours per 1 lb. of plate only. |

Total weight of forty cells, with boxes complete, 8 cwt.

The commutator switch, or power and speed controller, has some distinct features. The action is simple, there being three speeds only: 1st, slow speed, about 4 miles an hour; 2nd, 8 miles an hour (about the speed of a fast "hansom"), whilst the 3rd gives 12 miles an hour. These variations are made by: 1st, coupling the batteries in parallel with the motors in series; 2nd, the batteries in series and the motors in series; 3rd, and finally, the batteries in series and the motors in parallel. The controller also gives slow speed backwards. There is a special quick-contact break to each of these changes, so arranged that only at the last moment of "making" or "breaking" is the change effected, thus ensuring perfect connection without sparking. The contacts are placed round a disc, with vertical spring contact arms.

This carriage will take three inside passengers, and a driver outside; the step up is easy, and there is ample head room. The total weight of the carriage is about 20 cwt.

With the batteries fully charged it is claimed that the carriage can travel 50 miles on good ordinary roads. The current used at the intermediate and usual speed is said to be 20 to 40 ampères at 40 volts pressure, and we are informed that this will last for 6 to 7 hours at a speed of 7 to 8 miles per hour, the total current consumed being 8 to 10 units. The current required to re-charge the battery is 10 to 12 units, which at 3d. per unit makes the cost for current 3s. for each run of 50 miles, or at the rate of say 3d. per mile run.

The driver has a foot brake applied to the two back wheels. This brake has a double use: when pressed it acts upon a switch in the main circuit, and puts in resistance between the "on" and "off" contacts, so that the current is reduced as the brake is partly put on and finally cut out when the brake is hard on. This is useful, as the driver after he has set the controller to the required speed, need not alter it, but can do all the regulating with the brake.

The distribution of the weight of the batteries equally over the front and back wheels, and the method of independent driving of the two back wheels, has greatly to do with the reduced weight of the carriage: the strains are equally divided, the adhesion of all road wheels is practically identical, the carriage is of lighter build than usual, less power is required to run the carriage alone, and this again means reduction in weight of batteries, motors, etc.

Many trials have been made with this carriage on long journeys up and down hills, and it has been thoroughly tested. The batteries have also been most carefully examined from time to time after long runs, and experience has demonstrated the suitability of the whole apparatus for electric motor-carriages. Many favourable opinions and testimonials have been given of the comfortable travelling and freedom from noise and vibration which are remarkable features of this carriage.

The Syndicate unfortunately do not propose to make or supply complete carriages, but simply to supply the electrical equipment, with motors mounted in place on the under-frames, adapted for any carriage with simple attachment to the front and back axles, and ready for the carriage builder to design and build his work upon. Batteries ready in sets to go under seats, and controllers ready to fit for the driver, with full instructions how to apply them, and practical tuition afterwards in their use, are also proposed to be included in the equipment.

The complete carriage, with electric-motors, batteries, etc., was constructed for the Syndicate by Messrs. Henry F. Joel and Co., 31 Wilson Street, Finsbury Square, London, E.C.

THE Bordeaux Automobile Club is organizing for May 21st and 22nd next a motor-car race between Bordeaux and Périgueux. The race is to be international in character, and will be divided into three classes—racing motor-vehicles, touring vehicles, and heavy motor-cars.

## SCOTTISH NOTES.



## On the Road.

SATURDAY was perhaps not an ideal driving day in the West of Scotland, but the absence of rain tempted out a considerable number of "Chauffeurs," and some good runs were accomplished. The gusty "sou'-wester" blowing gave a little trouble to those who were driving with unprotected ignition lamps, but from all reports received, in spite of this and the soft roads, some good times were made. The Glasgow and Carlisle road seems still to be the favourite route for motor-carists in the west, and this, no doubt, for numerous reasons. It is the old "coach" road, is well built, being one of Telford's, and, while undulating in places, offers occasional opportunity for exhilarating "top speed" runs of many miles.

## New Scottish Cars.

I HAD an opportunity this week of inspecting some new cars which will shortly be on the road. The designs were quite new and most elegant. After a trial run, which I am promised very shortly, I will be able to write more fully on the subject.

## Scotch Ladies and the Motor-Car.

It is not so long since the motor-car was a "horrid thing" in Scotland more or less vigorously maligned by our fair lovers of the graceful and noble horse, and the day seemed a good way off when "my lady" would mount her motor-car as gleefully as a short time ago she did her bicycle. I learn, however, that the old century is not to be allowed to die without seeing a great step toward such a happy state of things. One firm in the north, I understand, has booked important orders for cars specially designed for ladies' driving, and I judge, from the numerous applications which this firm inform me they are having for similar carriages, it is evident that this year a new attraction will be added to the already fascinating pleasures of automobilism. Several causes have doubtless brought this about earlier than was anticipated—"they do it in France" certainly is one—but I think the rapid improvement in construction and design has done most to remove the previous prejudice and dislike so speedily.

## Cycle versus Motor.

So late as a year ago it was perfectly orthodox to say that if you take away the healthful physical exercise which is afforded in cycling, its chief charm will be lost. In common with most people I subscribed to this "fundamental," but only for so long as I was without personal experience of the motor-cycle. In the old days I had ridden a tricycle and had little difficulty therefore in overcoming the, at first, peculiar sensation of running on three wheels instead of only two to which the modern cyclist is familiar, and carrying out the maker's instructions I soon mastered the propelling mechanism. This done, my first motor journey opened up for me a new world of pleasure. There was a new excitement in whirling along familiar high-ways without effort, quickly and easily surmounting hills, which on the cycle had so frequently caused no little discomfort. On and on and on in the bracing air, moving only a tiny lever now and then to slacken or increase the speed at will, I discovered, with this wonderful little bit of machinery under me, the pleasures of cycling multiplied ten-fold, and at the end of my journey experienced also that pleasant sense of fatigue which comes after a moderate amount of physical recreation to which the rational cyclist is so familiar. The number of motor-tricycles in Scotland is increasing every week and several notables in the cycling world have already embraced the "new mode,"

among them being "Jamie Inglis," the erstwhile tricycle champion of Scotland, who only a short time ago had delivery of a magnificent "Ariel" tricycle.

## In the Far North.

THE Corporation of Aberdeen a year ago was anxious to introduce motor-cars to connect the city with Duthie Park and the new Bathing Station. I have not heard that any further steps have been taken in this direction. I believe that several Members of Council were enthusiastic in the matter, and they should make a further effort to have this fresh attraction added to the many others of the Granite City.

## The Proposed Club.

THE movement for the establishment of a Scottish Motor-Car Club, to which I referred last week, is, I am informed, a strong and active one, and the intention is to make Glasgow its headquarters. Two proposals are at present having the consideration of the promoters. One, that the organization should be distinctly Scottish and independent; the other, that it should be made a branch of the Automobile Club of Great Britain. Of the two proposals, I think the latter should receive most consideration. It is desirable at the very outset that there should be one large and influential Association, the recognized authority throughout the kingdom on all motor-car matters. Such a combination would enable great weight to be brought to bear in all matters affecting the interests of automobilism, and this could not fail to be of very great value to Scotland; and there is no reason why such an arrangement could not secure the same liberty of action as an independent club, and at the same time obtain all the advantages of a strong union. The management would be local and distinct, while in matters of importance the whole influence of the United Automobile Club of Great Britain could be brought into requisition. It is intended shortly to convene a meeting of all interested to fully discuss the subject and make such arrangements as may be considered necessary for the early institution of such a Club. Due notice of this meeting will be made through these columns.

## The New Journal.

THE advent of *The Motor-Car Journal* has created quite a *furor* in the north, and I have heard numerous highly-complimentary remarks regarding it. I am glad to have the pleasure of being its representative in the "land o' cakes," and trust it will continue to receive the appreciation of those numerous enthusiasts in motor-car matters in the northern division of the kingdom.

## Motor Hiring Firms.

THIS year there promises to be an increase in the number of concerns using motor-vehicles for public conveyance and hire in "bonnie" Scotland. In several new centres motor-car services will be inaugurated, and there will be an increase to the present stud in one or two of the localities where they were introduced last year. I understand that, on the whole, Scotch hiring firms are satisfied with the results of last year's business, although in more than one instance they were much handicapped through the inexperience of their men. This, of course, is inseparable to all new industries, and although the experience of the past has been more or less costly, the value of it will soon be manifest in the improved earnings of this year. I am of the opinion that it would be greatly to the advantage of the leading jobmasters throughout the country not to allow the motor-car business to slip through their hands. There undoubtedly exists a public demand for these vehicles, and if they added one or two good motor-cars to their establishments



their enterprise would without doubt prove commercially successful.

#### The Dundee Show.

At this show, which closed on the 4th inst., Messrs. Stirling had a Daimler dog-cart and two Pennington cars on show. At both these exhibitions the public interest was very great, and I believe that a considerable number of orders was booked by the firms exhibiting. A noticeable feature this year at the show was the new interest manifested on the part of "ladies of fashion," and I understand that orders have been booked by one firm for light phaetons specially designed for ladies' driving, with a single seat behind to accommodate the "footman." This is encouraging. Ladies took to the cycle and placed on it the crown of its popularity, and now that they are attracted to the motor-car we look for the rapid spread of a new enthusiasm, and the popularising—although of course in a lesser degree—of the practice of automobilism throughout Scotland and everywhere else.

#### Non-Materialisation of Miracle Workers.

Of the mechanical miracles which rumour in the earlier days promised, none as yet have materialised, and, to our personal knowledge, the majority have long since found their way mysteriously to the "scrap heap." The reason of all this is plain. In the mechanical road carriage an entirely new set of mechanical problems present themselves to engineers and carriage builders alike, and it has only been where this fact has been realized that progress has been effected. This fact having now been generally admitted, the progress of motor-car manufacture is moving on apace, and with the perfecting of numerous details in construction and design, the public demand for pleasure carriages is growing with extraordinary rapidity, and the present year promises to be one of marked prosperity to the makers here who are keeping their productions up to date.

#### Motor-Cab Company.

THERE is some talk just now of a Motor-Cab Company for Glasgow, from which it is evident that the "second city" is beginning to wake up, and does not intend much longer to be behind the times in its street cabs. No doubt the successful introduction of mechanical traction in the city tramways has drawn attention to the other methods of street locomotion. It has not yet transpired what power is regarded as best suited for the work. So far as electricity is concerned, I am afraid that electric-cabs would not prove successful, on account of the extraordinary wear and tear in the necessary accumulators on the badly-paved streets of the city. A simple and well-made oil motor would, I think, be better adapted for work under the special conditions.

#### Motor-Cars in Edinburgh.

ONE of the concerns which is doing much to advance the motor-car movement in the east of Scotland is the Edinburgh Motor-Car Co., of London Road, Edinburgh, of which Mr. John Love is the manager. This gentleman claims to have been the first to introduce automobile vehicles in that part of the country, and has devoted considerable attention to the industry, with the result that he has now established a profitable business in hiring out motor-vehicles for public and private purposes, no less than six cars with motors on the Daimler system and one Coventry motette being available for this service. Mr. Love has fitted up workshops in which all the necessary repairs to the vehicles can be effected, he having found by experience that the initial expense thus entailed is more than covered by the satisfactory results obtained.

BROWN HEATHER.

## THE HENRIOD PETROLEUM-SPIRIT MOTOR-CAR.

A FRENCH concern which has been quietly perfecting its motors and motor-carriages for some time past is the Compagnie des Automobiles et Moteurs Henriod, of 7 Rue de Sablonville, Neuilly, Paris.

To deal first with the petroleum-spirit motor, Fig. 4. This works on the Otto cycle, and has two horizontal cylinders placed opposite to one another in such a way that their piston-rods are connected to the same crank at an angle of 180 deg. to each other. The valves are so arranged that an explosion takes place in the cylinders alternately, the crank shaft of

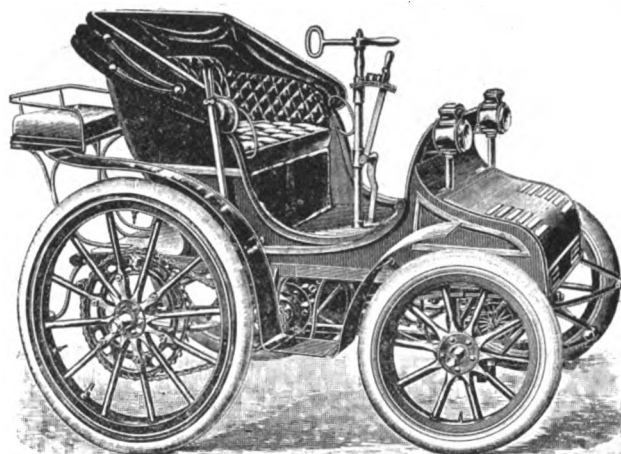


FIG. 1. GENERAL VIEW OF HENRIOD 6-H.P. PHAETON.

the motor thus receiving one impulse per revolution of the fly-wheel. A feature of the Henriod motor is that no carburettor of the kind usually understood by that word is employed, but in its place a special mixing device, placed centrally over the motor is used. We have been furnished with a sketch of the device, but as certain of the patents have not been completed we refrain from illustrating it at the moment. We may mention, however, that it is claimed that the new mixing apparatus has not only proved itself efficient in practice, but that it possesses the great

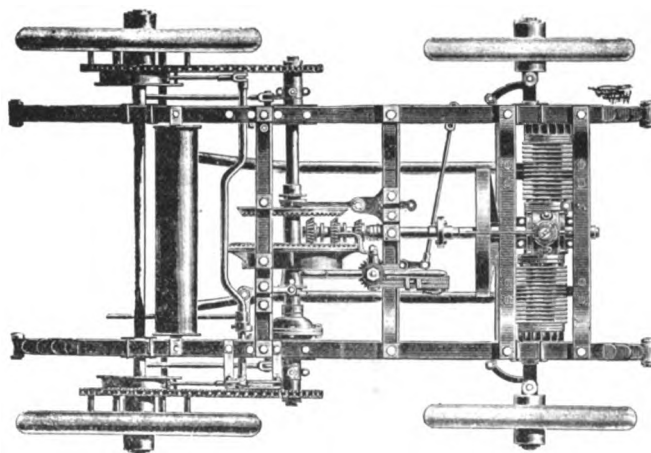


FIG. 2. PLAN OF HENRIOD FRAME, SHOWING POSITION OF MOTOR AND POWER TRANSMISSION MECHANISM.

merit that the explosion chamber is never in communication with any petroleum spirit beyond that which is required for the ensuing impulse. Electric ignition is employed, while the exhaust valves are actuated by "pushers," having at one end rollers which are always in contact with the cams carried on an auxiliary shaft driven off the motor shaft. Another feature of the motor, which is made in sizes from 4 up to 12 h.p., is that no water-jacket is employed to keep the cylinder cool, this being effected, even in the large-sized engines, by a

special form of radiating discs, and by arranging the cylinders to work in a somewhat super-heated state. Another point about the motor is that it will, the makers claim, work equally well with petrol, petroleum, or alcohol—the latter being just now very much on the *tapis* in French motor-car circles. The Henriod Company have for some time been running one of their cars by means of alcohol instead of petroleum spirit, the only alteration being the placing of alcohol in lieu of the petroleum in the storage tank; and they state that excellent results have been obtained, although there is a loss of power, estimated at about 20 per cent., as compared with petroleum spirit.

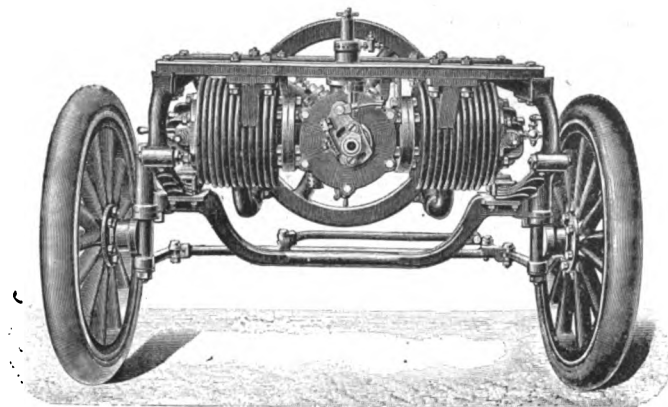


FIG. 3. ELEVATION SHOWING POSITION OF HENRIOD MOTOR.

It will be seen from Fig. 2 that the prolonged end of the motor shaft carries three bevel wheels, which, while rotating with the shaft, are so mounted as to be capable of being moved slightly along its length. Three speeds are thus provided. The intermediary shaft, at right angles to the motor shaft, carries the differential gear and two large discs, one of which, that which gives the backward motion, is so arranged that it can, by means of a lever, be slightly moved along the shaft. These discs are provided with teeth, the

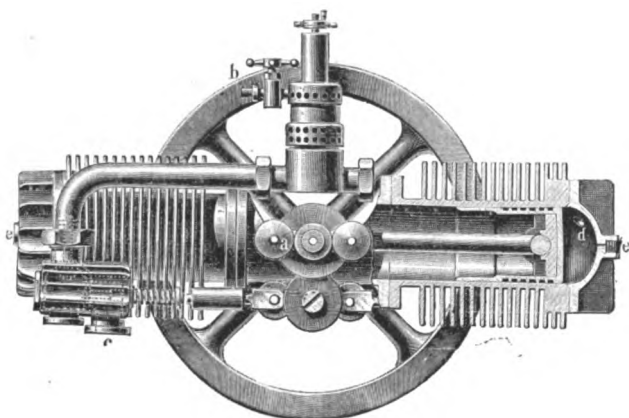


FIG. 4. PART SECTIONAL ELEVATION OF HENRIOD MOTOR.

large one having three rows of teeth arranged at such distances that any one of the bevel wheels on the motor shaft can, under the action of the lever within easy reach of the driver, be placed in gear with its corresponding row of teeth on the large disc. From the intermediary the power is conveyed to the rear road wheels through the usual sets of sprocket wheels and pitch chains.

We illustrate one (Fig. 1) of the Henriod motor-carriages—a three-seated 6 h.p. phaeton; but the Company are also building three and four-seated carriages—ducs, brakes, phaetons, etc.—and also eight to ten-seated omnibuses, etc., which can be fitted with motors of any capacity from 4 to 20 h.p. The smaller vehicles are provided with three band brakes—one working on the differential gear,

and one on each of the hubs on the rear road wheels. The larger vehicles are, in addition, provided with shoe brakes operated by the usual French hand-wheel and screw arrangement. The front or steering wheels are mounted on the usual short vertical pivots (Fig. 3), the steering being effected by means of a bar.

The Henriod Company are also devoting attention to the construction of motor-tricycles and quadricycles. These are fitted with a vertical single cylinder of 1½ h.p. A feature of the Henriod motor-tricycle is the absence of the usual triangular-shaped carburettor, the motor being provided with the special mixing apparatus above described.

## NOTES FROM PARIS.

AS is now generally well-known in England, Messrs. Panhard and Levassor have recently produced a light motor-car provided with a new horizontal motor of 3 h.p., the inception being due to Capt. Krebs. The sale price of this car in Paris is 5,500 francs, and it is intended that this vehicle shall replace the heavier car with a 4 h.p. (nominal) Daimler-Panhard, for which there is no longer any demand in France. But peculiarly enough the 4 h.p. car has been displaced in public demand by reason of a continually growing request in France for vehicles of a greater horsepower and having higher speeds than is possible with the 4-h.p. motor. It is therefore rather strange that Messrs. Panhard and Levassor should seek to create a demand for a vehicle having lower power.

A MOTOR-CAR RACE has been organized to take place during the Whitsun holidays between Draguignan and Arcs, a distance of 100 kilometers.

As may be judged from expressions in the French papers, manufacturers of motor-cars are not quite contented with the arrangements made by the Commissioners of the Exhibition of 1900 with regard to the display of automobile vehicles thereat. They have been officially relegated to the Bois de Vincennes, and there is some suggestion that a course shall be formed around the lakes, which shall in fact be a huge "automobilodrome," where it will be possible to demonstrate the powers of cars and to conduct experimental runs. The Bois de Vincennes section of the Exhibition is devoted to all kinds of exhibits relating to sports and pastimes. Its distance from the centre of Paris is, however, so great that we fear comparatively few people will take the trouble to visit it. There is to be founded, however, in the Champ de Mars a special and permanent exhibition of motor-vehicles. In regard to experimental runs, it is now anticipated that the majority of these will take place in the Bois de Boulogne, for it is not reasonable to imagine that those interested will leave the Champ de Mars and cross the whole of Paris in order to try their cars in the Bois de Vincennes.

MESSRS. DE DION & BOUTON have been endeavouring for some long time to produce a light motor-carriage needing but a motor of low power to propel it, and being capable of carrying two, or at the most three, persons. This type of carriage would meet with a large demand both in Paris and, it is to be imagined, also in London; but unfortunately, notwithstanding the efforts of inventors, no really practical "voiturette," or light carriage, has yet been placed on the market. All inventors have arrived at transforming a motor-tricycle into a "voiturette," by adopting some peculiar form of body, and by using a slightly more powerful motor. Unfortunately, also, most have adhered to air-cooling devices for the motor, amongst those houses who have done so being Decauville, Henriod, Renaud, Dumond, Schmidt, and Elan. In every case, however, cooling the cylinder and explosion chamber by means of air has proved

insufficient, and hence the reason for the restricted success of these and many other voiturettes. Messrs. Panhard and Levassor, as well as the Mors Company, have adopted an intermediate course by permitting the cylinder to be cooled by air circulation, and placing water round the explosion chamber. Most probably both these voiturettes will prove successful; but in the meantime they are not ready for sale to the public. Messrs. De Dion & Bouton, knowing quite well by lengthy experiments that air cooling is insufficient with carriages of this type, have departed entirely from that principle, and have devoted themselves to the construction of a very light car (250 kilogs.) with a 3-h.p. motor whose cylinder is cooled by a water-jacket, a "refroidisseur" or condenser also being fitted, and a circulating pump employed. This exceedingly pretty voiturette, the reproduction in miniature of a large carriage, is now under trial every day, and is found to go very well indeed. Its price will be 4,000 francs, but none will be ready for delivery for some time yet. It is possible Messrs. De Dion will have one of these cars ready for exhibition at the Agricultural Hall in July next, when the English public will be able to appreciate its performances.

M. LE COMTE DE DION is said to have taken up a new project, that of forming a portable charging plant for electric vehicles. It is said to comprise a small high-speed petroleum engine acting direct on a dynamo producing current for charging the storage batteries at the end of a journey. One of these plants is now in hand.

THE new rules governing and controlling the progress of motor-vehicles in France have now been issued. These state that the maximum speed of a motor-vehicle in towns shall not exceed 20 kilomètres an hour, whilst on the suburban and provincial roads a maximum speed of 30 kilomètres per hour is permitted. These regulations do not apply when races are taking place, so long as permission has been first obtained, and under such circumstances any possible speed is permitted. All drivers, whether amateur or professional, have to obtain a licence from the "prefet" and pass a slight examination on the management and construction of their vehicles. This holds good even in the case of a motor-tricycle. French motor-carists hope that these regulations will not be stringently enforced.

AGRICOLA.

THE L. C. Chase Co., Boston, U.S.A., has closed a big contract with one of the prominent French motor-cycle makers for motor-cycle tires.

THE French Automobile Club has decided to appoint a Commission to work in consort with the Touring Club of France on the question of standard sizes of French motor-car chains—a subject which was dealt with in our last issue.

THE first meeting of the newly-formed Automobile Club des Flandres has just been held at Ghent, when M. de Hemptinne was elected the first president. The temporary head-quarters of the Club are at the Hotel Royal, Ghent.

IT may be interesting to prospective tourists in Belgium to learn that it is proposed to establish a line of motor-omnibuses along the banks of the Meuse, between Namur and Dinant. This will be the first line of motor-conveyances in Belgium.

THE Automobile Club Bearnais is organizing a motor-car and motor-cycle race between Pau and Bayonne and back, to be run off on April 6th next. Already a large number of entries have been received.

IN response to a petition of the Austrian Automobile Club, the Chancellor of the Exchequer of that country has abolished the import duty on benzine and spirit used as fuel for motors in Vienna; but satisfactory proof must be given to the authorities that the spirit is intended for motors.

## MOTOR-CARS ON THE CONTINENT.

—8—

### A New Bollée Voiturette.

It is announced that Messrs. Darracq and Co., of Suresnes, France, have just commenced the construction of a new type of motor-carriage to the designs of M. Leon Bollée. It is described as a four-seated carriage, to be provided with a 5-h.p. motor, five forward speeds, one backward motion, and to weigh about 10½ cwt.

### English Representation on the French Exhibition Committee.

THE name of Sir David Salomons is, we note, included among the list of gentlemen who have been appointed on the Committee of Organization of the Motor-Car Exhibition to be held at Paris in June next under the auspices of the French Automobile Club.

### Motor-Vehicle Manufacture in Belgium.

QUITE a number of new motor-car concerns have lately been formed in Belgium, and particulars of two additional ones have just come to hand. The first is that which has just been formed at Malines, with a capital of £50,000, and with the title La Société des Automobiles N. Vincke, to carry on the works and business of M. N. Vincke, motor-car builder, in that town. The second is La Société des Ateliers Vivinus, formed in Brussels, with a capital of £12,000, "to manufacture motor-vehicles, motor-cycles, and cycles," and to acquire and carry on the works and business of Messrs. A. Vivinus & Co., 244 Rue du Progrès, Brussels.

### Accumulator Competition in France.

EIGHTEEN entries have been received in connection with the accumulator competition which is being organised by the French Automobile Club. The list is as follows:—(1) Société Anonyme pour le Travail des Métaux (brevets Laurent-Cély), 13 Rue Lafayette, Paris; (2) Compagnie Générale Electrique (Pollak), 33 Rue Oberlin, Nancy; (3) Société Française de l'Accumulateur Tudor, 48 Rue de la Victoire, Paris; (4) Société Belge de l'Accumulateur Tudor; (5) Société Anglaise de l'Accumulateur Tudor; (6) Vereinigte Accumulatoren und Electricitaets-Werke, 36 Kreuzbergstrasse, Berlin, S.W.; (7) Società Cruto, Pescetto Accumulator, Turin, Italy; (8) Legarde, 29 Rue Pixérécourt, Paris; (9) F. Wereste, Baden, Germany; (10) Blot-Fulmen, 39 bis Rue de Châteaudun, Paris; (11) Société de l'Accumulateur Fulmen, 19 Quai de Clichy, Clichy; (12) Société des Accumulateurs Phénix, 34 Avenue de Clichy, Paris; (13) G. B. Marzio, Piazza della Sagrestia, Rome, Italy; (14) Compagnie Générale d'Electricité (Pulvis), 5 Rue Boudreau, Paris; (15) John G. Hathaway, London; (16) Société des Soudières Electriques, Gavet-Clavaux, Isère; (17) Franz Heimel (Titan), 5 Strohgassee, Vienna; (18) Messrs. Pop and Sons, of Slough (Titan accumulators). It will be noticed that the entries include three English competitors. There are several missing names in the French list, notably those of Patin and Julien.

### Record-Breaking in France.

THE record-breaking craze, which has for some time pervaded certain sections of the Paris automobile world, is still unabated and unrestrained, Count Chasseloup-Laubat last week once more attacking and beating the records held by M. Jenatz. The Count employed a new Jeantaud electric-car, which by reason of its pointed ends had very much the appearance of a huge cigar on wheels. The motor had a capacity up to 36 h.p., while the weight of

the vehicle complete was about 1½ tons. From a standing start one kilometre was covered in 48½ sec., as against Jenatzy's time of 56½ sec.; while two kilometres were covered in 1 min. 27½ sec., as compared with 1 min. 41½ sec., the previous record. The Count's chief exploit was, however, a kilometre, with a flying start, covered in 38½ sec., or 6 sec. less than the previous best; this speed being equal to a rate of no less than about 58 miles per hour. It is seriously to be trusted that if the French authorities will not interfere and put a top to these competitions, the friends of the competitors will endeavour to dissuade them from further risking their lives, for while record-breaking can in no practical way help on the automobile movement, it will undoubtedly, if persisted in, end in a fatal disaster.

#### An Improved "Elan" Voiturette.

SEVERAL minor but effective improvements have been introduced in the 1899 models of the neat two-seated motor-vehicles made by the Société des Automobiles Elan, of 64 Avenue de la Grande Armée, Paris. *Aillettes* or radial

discs are depended on in this vehicle to effect the cooling of the cylinders, but, as has been the experience of many other firms, this method has not altogether proved satisfactory. The Elan Company claim to have got over the difficulty by fixing a small fan in front of the motor by which it is driven; thus a greater current of cool air through the radial discs is directed on the cylinder the greater the speed of the motor. One French contemporary, *La Locomotion Automobile*, mentions a run one of its staff had lately on one of these vehicles, when the distance between Paris and Saint-Rémy-les-Chevreuse via Versailles was covered without a stop, notwithstanding the hilly nature of the route.

#### Motor-Car Steering Gear.

SOMETHING new in steering gear for motor-cars is promised at an early date by M. C. Bourlet, Professor of Geometry at the Ecole des Beaux-Arts, Paris. M. Bourlet considers that none of the existing types of steering gear comply exactly with theoretical conditions. As a result of his studies he has devised a system which he claims to be not only theoretically correct, but to present no constructional difficulties. Before making the device known he is carrying out some practical experiments with it. We look forward with interest to further particulars of Bourlet's steering gear.

#### The Toulouse Motor-Car Race.

LA SOCIÉTÉ DES CHAUFFEURS DU MIDI, of Toulouse, is busy making final arrangements for the motor-car race which is to be run off between Montpellier, Beziers, and Toulouse, on Saturday, the 1st of April. The race is divided into three classes: (1) racing vehicles; (2) touring vehicles; and (3) motor cycles—the distance being about 152 miles.

#### An Improved Fore-Carriage Motor Attachment.

THE *avant-train* or motor and transmission gear, all mounted on a pair of wheels in such a way that it may take the place of the usual fore-carriage of any vehicle, of Messrs. Amiot and Peneau, of 47 Rue de Château, Asnières, France, has undergone considerable modification since it made its first appearance. It is now announced that it has been brought to a state of practicability, as demonstrated by a trial just made with a vehicle—a family omnibus—provided with an *avant-train* of the latest design. The vehicle was driven from Paris to Dieppe by its builders *sans accident*. The motor employed is one designed and built by Monsieur Daniel Augé, of Levallois-Perret.

#### Marot, Gardon and Co.'s New Voiturette.

MESSRS. MAROT, GARDON & Co., of 33 Rue Brunel, Paris, have acquired an old factory at Corbie (Somme) in which to carry on the construction of motor-cars. This firm has lately brought out a new light two-seated carriage. It is propelled by means of a 3-h.p. two-cylinder petroleum-spirit motor located in the front part of the carriage. No water-jacket is employed, the cooling of the cylinders being effected by means of radial discs. Three forward speeds and one backward motion are provided.

#### Motor-Cars in Scandinavia.

A COMPANY has just been formed in Copenhagen (28 Bredgade) with a capital of £26,600, to be known as the Northern Motor-Car Company, Ltd., for the sale of motor-cars and motor-cycles in Denmark, Sweden, and Norway. The new concern has, it is announced, secured the agency for De Dion motor-tricycles and Daimler-Panhard motor-vehicles in the countries named.

#### Franco-Greek Motor-Car Organization.

A NUMBER of the leading members of the Greek colony in Marseilles, with several local French sportsmen, have, according to *La Locomotion Automobile*, just founded the Automobile Club Franco-Grec de Marseilles. Should the new club organize a motor-car race it will be a literal case of "Greek meeting Greek" with just a little *soupeçon* of Gaul (gall).

#### The French Automobile Club Show.

THE French Automobile Club's Exhibition in the Tuileries Gardens seems likely to prove as successful as that of last year. As we go to press we learn that the following have already applied for and booked spaces; and these were all received in three days!—MM. Dion and Bouton, Panhard & Levassor, Decauville, Peugeot, Darracq & Cie., Jeantaud, Krieger, Marot Gardon & Cie., Kelly Co., Darracq, Vermorel, Amiot & Peneau, Chauvenet, Gros, Richard & Co., Bernheim, Malicet & Blin, Bollée, Bail Pozzy & Cie., Gougon Freres, Chary, Goyet and Legras, Gobron & Brillee, Le Brun & Cie., Daniel Augé and Cie., Alfred Dinin, Louis Miguët, Pigier, Henry, Hugot, Bonnafous, Thevenin Freres, Seguin & Cie., Chouanard, Tenting, J. & O. G. Pierson, A. Rossel, Wetzel & Fils, Block & Cie., Arnaud & Marot. Many other firms have also made application, but have not yet completed all formalities.

#### The Cannes-Nice Race.

THE Cannes-Nice motor-cycle and motor-car race run last Sunday was enjoyable from the point of view of the weather, but the races themselves were rather disappointing. In the motor-car section only one car entered, and this covered the distance in 2 hr. 20 min. In the motor-cycle section Roubet was first in 1 hr. 36 min., Jouan second in 1 hr. 41 min., Garin third in 1 hr. 53 min., and Count Baglion fourth in 1 hr. 55 min. Marcellin was riding, but had deserted his old love, the "Phœbus" machine, of Messrs. Nos Boyer & Co., in favour of a "Perfecta," of Messrs. Darracq & Co. This desertion met with heavy punishment, as the "Perfecta" broke down, and Marcellin was left out in the cold. Further castigation was incurred from the fact that the winner, Roubet, an unknown man, won the race on a "Phœbus!"

LA COMPAGNIE STEPHANOISE DE TRACTION AUTOMOBILE is the style of a new concern which has just been formed at St. Etienne, France, with a capital of £4,480.



## CORRESPONDENCE.

## SPEEDS OF RIVAL MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with considerable amusement Mr. Wridgway's letter, published in your last issue. As I believe the tricycle he now uses is the same that he rode at Sheen House and finished last in the races held there in November, he surely cannot claim that it is the fastest machine in England, and, as a matter of fact, I know two or three riders who have machines which, I believe, are considerably faster than Mr. Wridgway's. Moreover, his statement that he has often done thirty-three miles under an hour on this machine I do not believe, and doubt very much whether he could do one mile at the rate of even thirty miles an hour.

As for the Pennington, we have all heard of this machine before. It is a very easy matter to fit two large cylinders to a motor and make it run for a short distance at a high speed, but if Mr. Pennington only did a little more actual supplying to the public and a little less dashing about at a high rate of speed on his machine (which, I believe, was specially built for the purpose in 1896), all motor-carists would thank him a little more and become more firm believers in his cars.

In regard to the suggested Pennington-Mors competitive trials and the reputed high speeds of these vehicles, I believe a good Daimler motor of the same h.p. on an equally light body would leave both of them standing still.

Yours faithfully,

London, S.W., March 14th, 1899.

"CYNICUS."

## WHEELS AND TIRES FOR MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We note your remarks in your issue of the 10th on motor-car wheels and tires. A matter which has been much overlooked in the construction of motor-vehicles is that the rear wheels have not been sufficiently strong to withstand the shocks to which they may be subjected. The Harrow accident points a moral to all manufacturers employing wooden wheels without staggered spokes. In this age of steel we should rather look to its use in wheel construction, for, with half the weight, a steel wheel will stand many times more strain than a wooden wheel. A proper principle to observe in the construction of a tangent-spoked wheel is that the hub should be two or three times the width of the rim, varying according to the diameter of the wheel. With pneumatic tires it is entirely unnecessary to use large diameter wheels. If the tire should be 4 ins. in section, a very small diameter wheel can be used with the same results as a large diameter wheel with solid tires, while in the latter the weight is increased out of all proportion.

Another thing is that pneumatic tires should not be put on a heavy vehicle or a fast running vehicle without being securely bolted to the rim.

Wheel\* brakes are a source of much danger either with solid rubber or pneumatic tires. There ought to be sufficient band brakes, even although they may have to be applied to the wheels independently.

There is no doubt, again, that excessive weight is a serious danger. The tendency of most makers is to decrease the weight of motor-cars, and when this is general it will be found that fewer accidents will occur.

No car should be so shortly coupled that the passengers overhang the wheels, as was the case with the Daimler car in the Harrow accident, for, were the truth known, it might be found that the overhanging weight had as much to do with the collapse of the wheel as any other cause.

Yours faithfully,

PENNINGTON & BAINES.  
per W.B.

Manchester, March 14th, 1899.

\*Query:—"Tire brakes"?—Ed. M.-C. J.

## THE PENNINGTON MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I note in your last issue two letters, one from a Mr. Grierson in reference to the Pennington motor-car, and one from Mr. C. G. Wridgway, which refers simply to the Pennington motor.

It would interest me very much to know if the experiences which are related by the two gentlemen in question are experiences of the ordinary type of small motor-car which Mr. Pennington is at present advertising he is ready to sell and is selling.

I should personally like a few more particulars as to the weight of these vehicles, exact form or height and what b.h.p. the engines develop to sustain the speeds referred to. Particularly would I like to know the type of car against which Mr. Wridgway tried his tricycle as a test of speed.

I myself have had the pleasure of a ride on a vehicle of Mr. Pennington's, but it was not one that would be of much use to the ordinary person, being in the form of a kind of tricycle, with people perched round it.

I believe everybody is interested in his cars, and if only one would come somewhere near London I should like to know where it is, so that I might take a run out in its company for a hundred or two hundred miles.

Yours, etc.,

S. F. EDGE.

London, March 13th, 1899.

## WHEELS AND TIRES FOR MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—From the remarks made in regard to the causes of the Harrow accident, and also from the "Comment" in your issue of last week dealing with tires and wheels for motor-carriages, it is evident that we have by no means reached finality in regard to these essential particulars. Mr. S. F. Edge's paper on "Pneumatic Tires for Motor-Vehicles," though interesting in itself, does not appear to help us, nor does the discussion which followed materially add to our information. Pneumatic tires undoubtedly add to the comfort of a vehicle, but I for one would like to know the result to the tire when the wheels of a vehicle weighing 19½ cwt., carrying a load of four persons totalling 46½ stones, and proceeding down a hill 1 in 12 for 300 yards, 1 in 16 for 420 yards, and 1 in 18 for 600 yards, at a speed of 12 miles per hour, are kept more or less under brake control during the whole time. The wheel question is an even more important one. If the felloes are liable to be ripped off the spokes when the wheels are skidded and a corner is being negotiated, then it would appear that some other form of wheels is required. But looking all round me I can find no wheel and no tire that can be termed "ideal" for motor-car work, and so far as my experience goes it is as bad in France as it is here. The French wheels are certainly heavier than ours—that is, they have more wood in them; but I doubt whether they are more capable of resisting the heavy, twisting strain of a vehicle proceeding on a curve with wheels skidded.

Yours faithfully,

L. LECOMTE.

Madeley, March 14th, 1899.

## MR. WRIDGWAY BEATING THE MORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to Mr. Wridgway's letter in the last issue of your valuable paper, I should like to point out that I have been personally on one of the two Mors cars with which Mr. Wridgway says he "had an impromptu race," and I am more than surprised to hear him say now he had "easily beaten" us. As a matter of fact, when pedalling as hard as he could he used to be able to get in front of us when going up-hill, but when going down-hill or on the level he was always behind us, and when we talked it over later on

we agreed that it had not been possible for either of us to get away from each other. It is rather incomprehensible to me what has made Mr. Wridgway change his mind in so short a time.

As to his being "amused that the Automobile Association, Limited, talks about racing the Pennington with a Mors," I may assure Mr. Wridgway that we are not only talking about it, but shall do it, and I hope no further objection will be raised by Messrs. Pennington & Baines to arrange a race in France extending over 500 miles; and, as we would suggest, each party to enter five vehicles, which must be guaranteed to be ordinary commercial cars—the new Pennington 125-guinea car on their part, the Mors 380-guinea dog-cart on our part. Should, however, Messrs. Pennington and Baines wish to enter a special racing car, we shall be pleased to accept same and put against it a special Mors racing car; but think it would be to the benefit of all parties interested to have this contest come off not later than three months after date.

Trusting that Mr. Wridgway will be present when this contest takes place and compare once more the speed of the Mors and the Pennington,

I am, yours faithfully,

Holland Park Avenue, W.

ED. E. LEHWESS.

March 15th, 1899.

#### MOTOR-CAR TRIAL GROUNDS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Are there any privately owned places in London or the suburbs where an amateur can learn to drive and control a motor-car? I am anxious to buy a car, and with this in view have been favoured by several firms with "trial trips" on their cars. But, of course, I was not allowed to drive the vehicle myself, and I fear that if I do purchase one I would make a fool of myself if I tried to learn to control it on the public streets, and possibly be held liable for manslaughter or perhaps some less serious crime, owing to damage done to Her Majesty's lieges. Can you or any of your readers help me? \*

Yours etc.,

"PERPLEXED."

Penge, S.E.,

March 14th, 1899.

A DIVIDEND of 6 per cent. has just been declared by La Société des Voitures Automobiles des Etablissements Decauville Ainé, of Corbeil, France, a company formed about a year ago to manufacture the Decauville two-seated motor-voiturette.

THE Automobile Club offer a prize of twenty guineas for the best design for a poster to advertise motor-vehicles. It offers a further prize for the design of a costume for a motor-car attendant.

THE U.S. Consul at Magdeburg, Germany, has lately sent a report to the U.S. Government, in which he states that: "The report that a newly organized American Company is manufacturing auto-motor freight road waggons capable of carrying eight tons has been received in England with great interest. If American ingenuity has finally solved the problem of self-propelled road waggons, a big trade can at once be secured in Liverpool and the surrounding country, and throughout the commercial and manufacturing districts of England generally." The Consul adds that: "Liverpool has made the most thorough practical test of auto-motor freight road waggons, and it is frankly admitted both by expert scientific authorities and by practical business men, that this problem, at least so far as English attempts are concerned, has not yet been solved." However this may be, we have not yet seen any American-built heavy waggons to equal those of English construction.

\* We refer to this communication under the heading "Comments" in the present issue.—ED. M.-C. J.

## THE ADVENT OF THE ELECTRICAL MOTOR-VEHICLE.



THOSE who watch the progress of mechanical road locomotion cannot resist the conviction that the electrically-propelled motor-carriage is for the moment making greater headway towards successful finality than any other system of mechanical propulsion for road vehicles.

The problems presented in the successful designing of an electrical-vehicle are certainly not less complicated and diverse than those attending the perfecting of vehicles propelled by steam power, or by explosion or impulse engine, although the first mentioned, owing to the mobility of the power utilized, is perhaps less complicated in regard to transmission gear, speed changing devices, reversing gear, and other mechanical items. The ability to cut off power in the electrically-propelled vehicle also renders its designing less mechanically complicated than is the carriage actuated by petroleum spirit engines, which must of necessity run at a constant or nearly constant speed, no matter what the speed of the vehicle itself may be.

The difficulties encountered by the designer of electrical vehicles exist almost entirely in the finding of a suitable accumulator, and in so designing the body, etc., that it is possible for the carriage to attain a speed of about twice (or more) that of a horse-drawn vehicle, whilst itself weighing at least twice or thrice the weight and traversing exactly the same conditions of roads and pavings.

We do not for one moment intend to convey that these problems have been finally solved, although some very considerable advances have recently been made towards this end. Of course, it is quite well known that in regard to the battery problem the saving of weight must not be made the sole desideratum. It is quite possible to have an extremely light battery, but such a battery will have but a short life under the conditions attending its use in motor-vehicles. It is also possible to have batteries containing sufficient current for long runs, even up to 100 miles, but at present it is not seriously contended that the life of such batteries would tend to their adoption from a commercial point of view. We are told, however, that we are shortly to have what we will term a "long-distance" battery which will also have a long life, and withstand the rough usage which batteries in motor-vehicles have to undergo. But we have not yet seen it.

Returning now to the theme of our present article, it is simply wonderful how fast new electrical vehicles are being put upon the market. It is also curious to note that by far the greater number of these are of American origin. The motor-car industry is, on the whole, not in an advanced stage in the United States, but the constructors of that country are undoubtedly taking the lead in light pleasure carriages propelled by electricity. To mention only a few, we have the really elegant and excellent carriage of the Pope Manufacturing Company (the "Columbia"), that devised by Mr. Riker, the "Waverley," the "Orient," and some three or four others, whilst those of purely English design as yet on the market are designed on the Bersey, the Oppermann, or the Elieson systems. There are several of what may be termed Anglo-American design shortly to be put on the market, including those constructed on the Leitner and the Joel systems, whilst Riker carriages are to be built in England and Pope's "Columbia" in France for export to England.

Disregarding the electrical and mechanical problems of the electrical motor-carriage for the time being, it is certain that their conveniences make them an ideal vehicle for a lady's driving. The freedom from any great mechanical complication, the avoidance of the considerable lubrication necessary with petroleum-motors, and the freedom from dirt and emission of noxious odours, all appeal to the somewhat fastidious tastes of a lady. Moreover, the ease with which changes of speed are rendered possible without the labour inseparable from using speeding devices, the ability to bring

a vehicle to rest by simply shutting off power, and the considerably fewer number of handles, levers, and pedals necessary, all contribute to the electrical-vehicle appealing to a lady's taste.

The same advantages will also appeal to the City man who proposes to use a motor-vehicle for transporting himself between his home and his office; for even if the distance between these points is, say, twenty miles, he can, without unduly damaging his batteries, accomplish this with ease by having them re-charged during the day whilst at his office, and during the evening or early morning whilst at his home. What will shortly be wanted in London is a number of "garages," or dépôts in which such vehicles can be stored and charged during the day. There are a considerable number of these dépôts in Paris, and doubtless as the vehicles become more utilized in the future, these will also spring up in London.

We are convinced that in the coming season light electrically-propelled motor-carriages will be increasingly popular in London, and we look to see a considerable number of them "tooled" by ladies.

### MOTOR-CARS IN BELGIUM.

#### THE EXHIBITS AT THE BRUSSELS SALON DU CYCLE ET DE L'AUTOMOBILE.

THAT Belgium means to keep well to the front in motor-car matters is well evidenced by the seventh Salon du Cycle et de l'Automobile, which was opened at the Pole Nord, Brussels, on Saturday last, and which closes

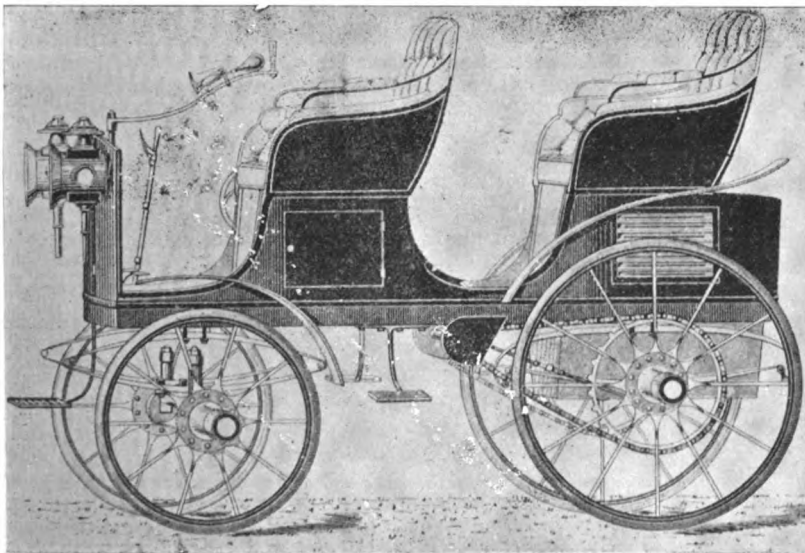


FIG. 1. GENERAL VIEW OF KOCH MOTOR-CARRIAGE.

to-morrow, the 19th inst., for, just as was the case with the recent Salon du Cycle et de l'Automobile at Paris, the exhibits of motor-vehicles and cycles far outnumber those of cycles. We have only space this week to just briefly allude to the exhibits in the automobile section, but in subsequent issues we hope to publish complete descriptions with illustrations of the several new vehicles displayed. Entering the exhibition building the first stand is that of the Société Le Progrès Industriel, 14 Rue des Croisades, Brussels, which in addition to a number of machine tools exhibits a new light three-seated carriage built to the designs of M. M. H. Rumpf. The motor, which is of the petroleum-spirit type, has two balanced cylinders and gives, it is claimed, 6½ h.p. on the brake. The ignition is electrical, while the cooling of the cylinders is effected by means of a water-jacket. Four speeds, 8, 16, 28 and 45 kilometres per hour—and one backward motion are provided, all being controlled by a single lever within convenient reach of the driver. The motor and transmission gear occupies relatively a very small compass, and is entirely enclosed by the body of the car. Le Progrès concern is also we learn manufacturing 1½-h.p. motors suitable for tricycles and 3½-h.p. motors for voiturettes.

Quite a new vehicle is that which is exhibited by Messrs. Chas. Wilford et Fils, Ingenieurs-Constructeurs, of Tamise-les-Anvers, which takes the form of a four-seated *dos-à-dos*. The petroleum-spirit motor employed is of 6 h.p. It has two cylinders, and is arranged in the fore part of the vehicle. The ignition is electrical, or by means of a lamp as desired. Three forward speeds and one backward motion are provided. The transmission of the power of the motor to the rear road wheel shaft is effected by means of steel and raw-hide pinions, no chains being em-

ployed. The vehicle has a very substantial appearance, although it has one or two points about it which do not strike us favourably. Of these we may mention the unusual dimensions of the engine cover, and the fixing of the foot pedal controlling the band brakes to the outside of the carriage frame.

La Société des Automobiles Koch, of 37 Rue Chauveau, Neuilly, Paris, shows the four-seated motor-carriage, Fig. 1, first introduced to the notice of the public at the motor-car exhibition in Paris in June last year, and the feature of which is that the motor works with heavy oil, in contradistinction to the more generally-used petroleum-spirit. The motor, Fig. 2, is capable of developing 6 e.h.p., and comprises two cylinders placed end to end, with one explosion chamber in the centre, the one explosion giving a simultaneous impulse to each piston. The piston rods are each connected by cranks to connecting rods and thence to the fly-wheel shaft, which is fixed centrally below the cylinders, the engine being in this way exactly balanced. No carburettor is employed, the oil being simply "pulverized." The explosive mixture is formed in the chamber between the two cylinders, and is ignited by means of a porcelain tube maintained incandescent by a pressure burner. The admission valve is automatically actuated by the motor itself, a special regulator being provided to vary the admission in accordance with the power required. The motor, which weighs about 3½ cwt., runs at a speed of about 600 revolutions per minute; it is placed transversely in the rear portion of the carriage, and will, the makers claim, work equally well with heavy oil or petroleum-spirit. Three forward speeds—8, 16 and 30 kilometres per hour—and one backward motion are provided. The power of the motor is transmitted through spur-wheels running in an oil bath to an intermediary shaft, and from the latter to the rear road wheel axle through the usual driving chains and sprocket wheels. A novel feature of the carriage is that access to the front seats is gained not at the sides as is usual, but through a door in the front splashboard. The visible exhaust has been so far one of the main difficulties experienced with this car, but we understand that the Koch Company, who are represented in this country by the Automobile Association, of Holland Park Avenue, W., are at present engaged on experiments with the object of overcoming this drawback.

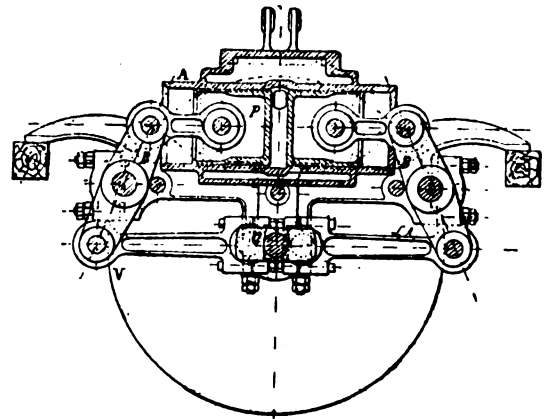


FIG. 2. SECTION THROUGH KOCH MOTOR.

La Société de Constructions Liegeoise d'Automobiles, of 85 Rue Lacressé, Liège, has on view several of its two and three-seated voiturettes. These little vehicles are already fairly well-known in motor-car circles in this country under the name "The Tourist"—they having been introduced by the Automobile Association, of Holland Park Avenue, W. The voiturettes are provided with motors of 3½ h.p. with electrical ignition, three speeds being available.

The Liegeoise Co. has recently acquired the patent rights in the Duryea petroleum-spirit motor-carriages, and of these a two-seated and a four-seated vehicle are displayed.

M. Lison, Ingénieur, of Ensisval, Verviers, who some time ago acquired the Belgian rights in the Gautier-Wehrle type of petroleum-spirit motor-vehicles, exhibits two examples of the many types of these carriages. The details of these vehicles have been fairly well described from time to time, so that it may suffice to briefly mention that the motor is a horizontal one—two or four cylinders, according to the power demanded—arranged transversely in the fore part of the carriage. The extension of the motor-shaft, which carries a friction clutch, terminates in a bevel wheel gearing with a similar bevel wheel on an intermediary shaft, which also carries the variable speed gear. From this first intermediary the power is transmitted through the requisite pair of spur wheels to a second intermediary shaft, which at its centre carries a spur wheel, gearing with a large spur wheel surrounding the differential gear on the rear road wheel shaft, the use of driving chains being in this way obviated.

A new two-seated voiturette is shown by La Société des Ateliers d'Echamps, of 31 Rue Frère-Orban, Brussels (Nord), a company which was only formed in January last. The vehicle, which has a very graceful appearance, is propelled by means of a two-cylinder petroleum-spirit motor located in the fore part of the carriage. The ignition is electrical; the carburettor is of the well-known Longuemare type, while, for cooling purposes, the cylinders are provided with radial discs. Three speeds

forward and one backward motion are provided, the power of the motor to the intermediary shaft being transmitted through spur wheels, and from thence to the rear road wheels by the usual driving chains and sprocket wheels. The vehicle is fitted with pneumatic tired cycle wheels, and is provided with wheel-steering; the weight completed being given as 250 kilog., or not quite 6 cwt. The D'Echamps Company is also constructing motor-tricycles with De Dion 1½-h.p. motors.

La Société des Anciens Etablissements Panhard et Levassor, of 19 Avenue d'Ivry, Paris, confines its exhibit to an example of the new two-seated vehicle exhibited for the first time at the recent show in Paris. As we hope to publish an illustrated description of this vehicle in an early issue, we will now merely remark that it differs materially from the Panhard vehicle to which we have hitherto been accustomed. The motor is a single cylinder one of 4 h.p., and is located in the rear portion of the carriage. Tube ignition is employed, while radial discs and a water-jacket provide for the cooling of the cylinder. Three forward speeds and one backward motion are available, while the steering is controlled by means of a hand wheel.

La Société Electricité-Mécanique-Automobiles, of 4 Digue du Canal, Cureghem, Brussels, show a new motor-vehicle which has been named "La Gracieuse," and of which a general view is given in Fig. 3. We were able to obtain but few particulars of this carriage, but we learn that it is provided with a 6-h.p. petroleum-spirit motor, fitted with both electrical and tube ignition, the latter being only brought into use should the accumulators give out. Another feature of the motor is in the method of cooling the cylinder. The latter is surrounded by a series of hollow and radial discs of aluminium through which a current of air is made to pass, the system being claimed to be not only effective, but an improvement on the ordinary radial discs.

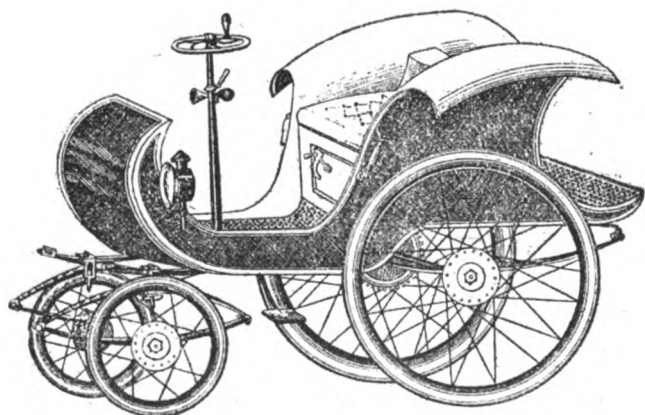


FIG. 3. GENERAL VIEW OF "LA GRACIEUSE" MOTOR-CARRIAGE.

La Société des Ateliers Germain, of Monceau-sur-Sambre, which some time ago secured the Belgium patent rights in the Panhard-Daimler vehicles, and also in the light two-seated carriage of the Société des Automobiles Elan, of Paris, has already turned out about twenty vehicles. Plant is, however, we learn at present being put down to enable an output of three Daimler and six Elan carriages per week to be maintained. Examples of both types of vehicle are on view at the exhibition, but neither, being already well known, require a lengthy description at this time.

La Société des Automobiles N. Vincké, of Malines, has on view a number of its well-known—at least on the Continent—types of petroleum-spirit motor-vehicles, some of which are built on Benz lines, while others have vertical twin cylinder, etc., the motors being fitted in the fore part of the vehicle on the Panhard-Daimler system.

La Société des Voitures Automobiles des Etablissements Decauville Aîné, of 11 Boulevard Malesherbes, Paris, displays the Decauville two-seated voiturette, which has become very popular in Paris.

La Compagnie des Automobiles et Moteurs Henriod, of 7 Rue de Sablonville, Neuilly-sur-Seine, exhibits two motor-carriages and a couple of motor-tricycles, but as these are fully described in other columns of the present issue further reference to them here is unnecessary.

Motor-cars are also exhibited by La Société l'Automobile, 10 Rue de Bonne-Terre, Vleurgat-lez-Brussels; La Société Belgica, 92 Rue du Midi, Brussels; Messrs. Wallegem & Sooghen, Rue de la Concorde, Ixelles; La Société Générale Belge des Automobiles, 58 Rue de l'Arlon, Brussels; La Société Le Cyclodrome, 15 Chaussée d'Etterbeck, Brussels; La Société des Usines Delin Marché-aux-Poissons, Louvain (the Delin vehicles are fitted with Loyal petroleum-spirit motors); La Fabrique Nationale d'Armes, of Herstal; and La Société des Etablissements Pieper, 20 Rue des Bayards, Liège; while among the many exhibitors of motor-tricycles may be mentioned the following: M. C. Belot, 24 Rue de Poinçon, Brussels, who also exhibits a number of trailing cars for the same; M. H. J. Van Mallaert, 82 Boulevard du Nord, Brussels; J. M. Deprez-Joassart, Herstal; Messrs. V. Guillon & Co., 7 Rue Pletinck, Brussels; Messrs. Barrière & Co., 22 Rue Saint-Labin, Paris; and Messrs. Cudell & Co., of Aix-la-Chapelle, the German licensees of De Dion motors and motor-tricycles.

An automobile cycle and motor-car race will be held at Turin, Italy, on April 23rd.

We learn that a large new automobile Company with a capital of no less than \$25,000,000 (£5,000,000) has been formed at Trenton, N.J., U.S.A. The object of the company is to secure control of existing automobile concerns, including the Electric Vehicle Company—which operates the electric cabs in New York—the Pennsylvania Electric Vehicle Company, and the General Electric Automobile Company.

## NEW COMPANIES REGISTERED.

AUTOMATIC MAGNETO-ELECTRIC IGNITION COMPANY (FRANCE AND BELGIUM), LIMITED.

REGISTERED March 3rd, by C. H. Moore, 1 Avonmore Road, Kensington, with a capital of £15,000 in £1 shares. Object, to adopt a certain agreement, and to carry on business as electricians, manufacturers of and dealers in cycles, motors, and the component parts thereof, and as engineers and metal founders generally. The directors are F. R. Sims, R. Bosch, and C. H. Moore. Qualification, £50. Remuneration according to profits; minimum, £50 per annum each.

FRANKENBURG'S LIMITED.

THIS company has just been registered with a capital of £20,000 in £1 shares, to enter into an agreement with Hyman Frankenburg, of 28 Snow Hill, Birmingham, and to carry on the business of cycle, motor-car, and carriage manufacturers, dealers, agents, and proprietors, india-rubber manufacturers, engineers, fitters, founders, millwrights, smiths, saddlers, etc. The subscribers are: Samuel H. Greenberg, Mrs. Jenny Frankenburg, Thomas Barker, Hans Kaiser, Hyman Frankenburg, Mrs. Margaret E. Barker, and Ernest A. Helsby. Registered office, 28 Snow Hill, Birmingham.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, MARCH 24th, 1899.

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## COMMENTS.

### Another Long "Non-Stop" Run.

MR. PEDLEY'S long non-stop run recorded in our last issue has been surpassed, it appears, by a longer run on a motor-tricycle, although up to the present we have received no information of a longer run of a car fitted with an engine having a water-jacket. Mr. S. F. Edge, perhaps one of the most enthusiastic of English motor-carists, writes us as follows:—"I had a long non-stop run on Thursday last. Starting from a few doors west of the Holborn Town Hall I journeyed to the Queen's Hotel, Coventry, in three hours fifty-three minutes without a stop on a De Dion motor-tricycle. I have both my oiling and arrangement for letting fresh petrol into the tanks so placed that they are controlled from the saddle, and I can then run for over 200 miles without a stop if everything goes right." Mr. Edge informs us that he went very slowly out of town over the very bad roads up to Barnet, and in fact took one hour and thirty-three minutes to reach Dunstable, which is only about thirty-three miles from London. After passing Dunstable, however, Mr. Edge must have travelled fairly quickly, as is proved by the average speed per hour over the whole distance. Mr. Edge states that he was in no way endeavouring to get the best work out of the tricycle, and sat quite upright during the whole journey, slowing up for every village. Mr. Edge also states that the more he uses the De Dion motor the more he is impressed with its powers and its capabilities. Throughout the whole journey he did not notice the motor miss a single explosion unless the sparking was deliberately turned off. Mr. Edge came back to London on his machine on Saturday in company with some friends, and records the fact that everything seemed as taut and trim at the end of the journey as it did at the start.

### Duty on Petrol in Victoria.

THE question as to the import duty to be imposed on petroleum spirit imported into Victoria for the use of motor-tricycles and vehicles has recently arisen. It has been, however, decided by the Customs authorities of that colony that no duty is to be imposed on such imports. Consequently Victoria automobilists will be able to purchase foreign refined spirit at its prime cost *plus* the cost of carriage. It is to be hoped that before long sufficient trade will develop to induce the starting of local refineries.

### The Potential Value of Petrol.

ACCORDING to Baron d'Alten in the *Chauffeur*, experiments that have been made have resulted in showing that two h.p. can be developed in a petroleum spirit motor per kilogramme of petrol. In boilers heated by means of ordinary petroleum one kilogramme of oil does not, he states, evaporate more than six kilogrammes of water, and as the engines connected with these boilers in motor-vehicles generally consume twelve kilogrammes of steam per h.p. this is equal

to two kilogrammes of petroleum per h.p., or four times as much as is necessary in an explosion motor to gain the same power.

### The Automobile Club's Easter Tour.

IN our last issue we gave the route of the tour organized by the Automobile Club, and this has undergone no material alteration at the time of going to press, excepting that on Easter Monday an alternative route to Winchester is arranged for in lieu of the suggested tour through the New Forest. The New Forest is beautiful to the pedestrian, but the public coach roads through lead over bleak, unsheltered hills, and we have personally a very vivid recollection of the trouble experienced in this spot on the Saturday before Easter Sunday last year. The gradient was a "stiff" one, and the side-wind almost sufficient to blow the car out of its course; heavy rain descended at the same time, and the result of the tussle between the elements and our car was that the latter and its mechanism was thoroughly covered with coarse flint-like grit, although it finally conquered all obstacles. The riders, too, were none too comfortable at the combined grit and rain showers which dashed against their faces. Under the circumstances, therefore, we think the Club's committee have been wise in not making the trip a compulsory one as a part of the journey to Romsey. Instead thereof the following alternatives are suggested:—Lyndhurst to Romsey *via* Cadnam and Ower, 8½ miles; or Lyndhurst to Beaulieu, by way of Beaulieu Road Station, and return *via* Hythe, Totton, and Ower to Romsey, a distance in all of 32½ miles. A further alteration has been made in regard to Tuesday's journey. Instead of proceeding from Winchester to Bagshot as originally intended, the route now decided upon is *via* Popham Lane, Basingstoke, and Hartley Row to Blackwater (32 miles), luncheon being partaken there, and the journey home to London being completed as originally suggested, *via* Virginia Water, Staines, and Hammersmith. The total of this last day's run is 63½ miles—if we are not mistaken, the longest run ever organized for one day in any of the Club's tours.

### Easter Trips— Motor-Car Spirit Supplies.

SEVERAL correspondents have written us pointing out the uncertainty in arranging trips for the Easter holidays, owing to the uncertainty of so arranging their stops that they can secure a supply of petrol without having the necessity of carrying cumbersome reserve tanks. We have ourselves experienced this difficulty, especially with motor-tricycles. We will undertake to supply any of our readers, who will send us a stamped directed envelope and a copy of the route proposed to be traversed, with a list of dealers selling motor-car spirit at the towns or villages *en route*. In order to assist our readers in forming their routes, we publish on the last page of the present issue a list of firms in a few towns who will be able to supply the needs of motor-carists with Pratt's deodorised motor-car spirit, as sold in this country by the American Oil Company, for which company the firms mentioned are local agents. All inquiries in regard to

dealers on the routes proposed for the coming Easter tours should reach us at latest by first post on Tuesday morning in order to secure a reply before Good Friday.

#### More Motor-Ambulances.

IN our last issue we commented upon the proposal of the Toronto Police Commissioners to employ electrical ambulance vans or trucks in conducting the ambulance work of the authorities. This week we have to record further advances in this direction. The first automobile ambulance ever constructed in the United States has been presented to the Michael Reese Hospital, Chicago, and is now in service. It was built in Chicago and weighs 1,600 lb., its speed approximating to 16 miles. Unfortunately information is wanting as to the motive power employed. We now learn that Mr. F. R. Simms has designed a vehicle for submission to the British War Office officials which is designed to act as an armed "scout," one or more to be attached to each regiment. The vehicle will carry a small Maxim gun in ordinary, but if desired this can be dismounted, and by slight additions the vehicle can be turned into an ambulance carrier.

#### A Coincidence.

MOST Londoners know that Messrs. Fuller, Smith & Turner, the well-known Chiswick brewers, employ motor-vehicles for conducting certain parts of the carrying department of their business. Mr. Fleetwood Fuller, a member of this firm is, like Sir Walter Gilbey, a great lover of horses and a well-known four-in-hand "whip." Mr. Fuller was recently trying a new pair of spirited horses when they bolted, with the result that their driver was thrown out of the carriage and severely injured. Fortunately it is not alleged that the horses were startled by the motor-vehicles employed by the firm, but in all probability Mr. Fuller would not have met with his severe accident had he adopted motor-vehicles for his private use as well as for business purposes. We trust Mr. Fuller will make a speedy and permanent recovery, and, although not desiring that he should cease his love and admiration of horses, we would commend to his attention as safe, reliable, and comfortable the latest forms of motor-vehicles.

#### Participants in the Automobile Club's Easter Tour.

IN another portion of this issue we give an account of the Automobile Club's Easter tour as amended up to the time of our going to press with this issue. From latest reports it appears that 20 vehicles will take part in the whole of the tour, and that 11 additional vehicles will participate in different parts of the tour. Those taking part in the whole of the tour are as follows: Vehicle No. 1 (Benz), Mr. Frank H. Butler and friend; No. 2 (Panhard), Mr. S. F. Edge and Mrs. Edge; No. 3 (Panhard), Mr. C. Jarrott and friends; No. 4 (Ariel motor-tricycle), Mr. J. W. Stocks; No. 5 (Papillon motor-tricycle), Mr. Townsend; No. 6 (Benz Ideal), Mr. Herbert Capel; No. 7 (motor-wheel), Mr. F. R. Simms; No. 8 (Iveagh phaeton), Mr. Charles Cordingley, Mrs. Cordingley and Miss Pursehouse; No. 9 (Mors), Dr. Lehweß and friends; No. 10 (Orient Express), Mr. Zacharias and Mrs. Zacharias; No. 11 (Koch), Mr. Atkins and friends; No. 12 (Daimler), Mr. Ernest Estcourt and Mrs. Estcourt; No. 13 (Clarkson-Capel steam victoria), Mr. Thomas Clarkson and friend; No. 14 (Benz, 5 h.p.), Mr. Lyons Sampson and friends; No. 15 (Benz Ideal), Mr. and Mrs. Kitto; No. 16 (Peugeot-Daimler), Mr. and Mrs. Armstrong; No. 17, Club wagonette (Daimler), driven by Mr. Ernest M. Instone; No. 18, Club phaeton (London Motor-Van and Wagon Co.); No. 19, the Club luggage van (London Motor-Van and Wagon Co.); No. 20 (Simms' quadricycle), Mr. Hankinson and friend. It is also probable that another club vehicle will start, bringing the total for the

whole tour up to 21. Among those riding in the Club vehicles are Mr. Louis d'Egville, Mr. Worby Beaumont, Mr. Staplee Firth, Mr. David Waterlow, Mr. Holland Tringham, Mr. A. C. Poole, and Mr. C. Johnson (Secretary) and Mrs. Johnson. Amongst those who will participate only in parts of the tour are the following: Mr. and Mrs. W. C. P. Wills (Benz), Slough to Reading; Dr. Acworth (De Dion tricycle), Brentford to Lyndhurst; Mr. R. E. Phillips (De Dion tricycle), London to Lyndhurst; Mr. and Mrs. Buttemer (Benz), Salisbury to Romsey; Mr. and Mrs. J. A. Kooser (Lutzmann), Salisbury to Lyndhurst; the Hon. John Scott Montagu, M.P., Lyndhurst and Beaulieu to Romsey; Mr. H. A. Hewetson (Benz), Lyndhurst to London; Mr. H. Edgerton (tricycle), Lyndhurst to London; Mr. J. H. Knight (Benz), Winchester to Blackwater; Major-General H. P. Montgomery (Daimler), Romsey to Basingstoke; Mr. and Mrs. H. A. House and party, seven in all, Lfui steam Wagonette, Salisbury to Winchester.

#### A Canadian Electric-Vehicle.

IF the news our Toronto correspondent forwards us proves correct in all details, it would appear that Canada is far in front of us in building a light electrical motor-vehicle of moderate weight and fair range of action. Our correspondent describes the vehicle in question, which is the invention of Mr. W. J. Still, of Toronto, as follows:—Total weight, 400 lb.; battery weight, 180 lb.; range of action, 30 miles without recharging; speeds, 8 to 15 miles per hour; capacity, two persons and 50 lb. of baggage; four forward speeds, reverse, 1 electric brake; h.p. of motor, 3½, weight, 70 lb.; current used on ordinary roads, 15 ampères; length and width of wheel base, 4 ft. in each case. The steering is effected by the hind wheel, controlled by a hand lever conveniently placed, and so jointed that it can be turned out of the way of persons entering the vehicle. The controller is fitted with an indicator showing the effect of the power on the motor, whether in a forward or backward direction, and a key plug is used so that the machine cannot be tampered with when left unattended. The motor is suspended over the front axle, which carries two wheels, the usual spur gearing being employed to convey motion to the road-wheels. The framework of the vehicle is steel tubing, and the body itself is made of basket-work. The batteries are carried at the back partially over the rear wheel.

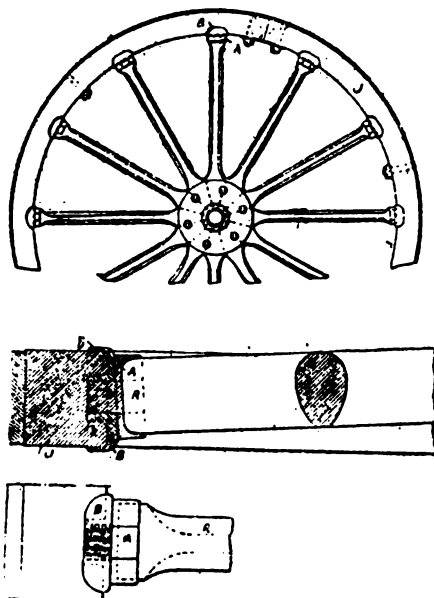
#### Electrical Ignition Apparatus.

OF the many French firms who have set themselves out to meet the demand for electrical accessories in connection with petroleum motor-vehicles in which the ignition of the explosive charge is affected electrically, La Société Le Carbone, of Levallois-Perret, and 36 Lime Street, London, E.C., occupy a prominent place. Chief among their specialities are the "Sans Pareil" dry cells, for which a maximum of output with a minimum of weight and dimensions is claimed. Four sizes of the cells are made, and are supplied singly or in tin or oak boxes as desired—in the former in sets of four, and in the latter of four, five, or six cells. In use on motor-tricycles their life extends, it is claimed, from 300 to 500 hours, according to the condition in which they are employed. Two sizes of cells, which in sets of four weigh respectively 16 lb. 7 oz. and 17 lb. 9 oz., are made for motor-tricycles, a slightly larger size—weight of four being 23 lb.—for light motor-carriages, and a still larger size for heavier carriages. To meet the requirements of an induction coil, taking as little current as possible, which is recommended in use with the "Sans Pareil" cells, Le Carbone Company have also introduced a coil known as Rossel's, of which we hear very good accounts. These coils are specially wound, and are made to work with or without contact breakers, and it is claimed for them that they meet the great *desideratum* of giving a spark at a desired time without failing. Any *chauffeur* who has had trouble with his

electrical ignition can be recommended to inquire into the merits of Le Carbone specialities.

**Wheels and  
Tires for Motor  
Vehicles.**

Just when the question of wheels for motor-vehicles is absorbing a good deal of attention in this country comes the announcement that Messrs. Schneider & Co., of Le Creusot, France, who may be termed the Armstrong-Whitworths of France, have lately devised a new form of carriage wheel, in which provision is made whereby any looseness or play of the spokes in the felloe due to wear or to the effects of the atmosphere may be readily taken up. An idea of the new arrangement, which is more especially intended to be used in connection with wheels built up partly of wood and partly of metal, will be obtained by a glance at the accompanying illustrations. The spokes *R* are bolted to



the hub; the felloe *J* is built up of several segments, each connected one with the other, and with the tire. The outer ends of each of the spokes are provided with a hexagonal-sided metal cap *A*, on the outside of which is a threaded projection, so that it may be screwed more or less deeply into the nut *b* formed in the interior of the shoe *B* which grips the sides of the felloe. This nut is rabbeted into the felloe; the hexagonal form of the spoke-caps permits them to be turned by a wrench, and in this way the length of the spokes may, within a certain limit, be varied so that each shall exert an equal radial pressure on the felloe.

**Simms'  
Motor-Wheel.**

On Tuesday last, in the midst of a blinding snowstorm, a party of enthusiasts gathered at Clapham to witness some demonstrations with a vehicle sold by the Motor Carriage Supply Co., Ltd., the invention of Mr. Frederick R. Simms, and known as Simms' "Motor-Wheel." The vehicle is a three-wheeler, the frame being of quite novel design, and, as Mr. Simms is careful to emphasize, is specially built to carry a motor, and is not a conversion of a pedal machine into a motor-vehicle. The two front wheels are the drivers and the rear wheel the steerer. The motor is a horizontal single-cylinder engine placed with the explosion chamber in front, immediately under the front axle, to which it gears by chain gearing, the axle carrying the usual "jack-in-the-box" or differential gear. The position of the engine, which is provided with longitudinal fins or radiators, permits it to receive the whole of the air currents set up by the passage of the vehicle along the road. Starting is effected by the usual pedal and chain gear, a compression release being provided. A peculiarity of the machine rests in the

ease with which its speed of travel can be controlled. This is rendered possible by the employment of the Simms' timing gear, which is used in conjunction with the same gentleman's magneto-electric firing device. The feeding of explosive vapour is constant and positive, a carburettor of the "Phoenix" or constant-level float type being provided. The whole control of the vehicle is perfectly arranged, and, owing to the automatic devices mentioned, only the steering-wheel and the timing control lever have to be manipulated, with the exception of the two brakes provided, which are ample for pulling up the vehicle in a very short distance even when going at full speed. The b.h.p. of this motor is given as  $1\frac{1}{2}$  h.p., and the average speed over fair give-and-take roads fourteen miles per hour.

**Motor-Car  
Services in Rural  
Districts.**

For the third week in succession we have to record advances in the provision of automobile public vehicles in various districts. Indeed, the advances are so numerous that we can hardly keep pace with them. We hear that a service is to be started at Brighton, but in view of a recent prosecution for fast driving, and more especially in view of the expressed opinion of the magistrate's clerk that a pace of four miles an hour was sufficiently fast for motor-vehicles, it would not appear that the owners of the Brighton motor-car service will have a very pleasant time of it. Another scheme is for providing Hastings with a service running between that town and certain popular places in the vicinity. Here there would appear to exist a vast field for the employment of motor-vehicles, and there should be every chance of the venture returning proper dividends. We mentioned in our last issue the scheme for starting a service at Sunderland but since then we learn that instead of providing six cars, as originally intended, the number will be increased to twelve. In this neighbourhood more services are proposed; for instance, we hear of two at Newcastle, and in addition others at Carlisle, Maryport, as well as at Coniston and several places in the Lake District.

**The Adoption of  
Motor-Vehicles  
for Public Hire in  
New York.**

THAT motor-vehicles are becoming more popular for public hiring is proved not only by the constant succession of new schemes formulated with a view of starting such public services in Great Britain, but also by the adoption of similar conveniences in the cities of America, in those of the European Continent, and in various places throughout the world. The successful introduction in a community of any striking innovation takes time, as the masses of the people have to be gradually educated up to the new condition of things, and the placing of motor-vehicles at the disposal of the public was no exception to this rule. Many persons of a conservative turn of mind even now prefer to travel in a cab behind an emaciated and slow-moving horse to risking their lives—as they suppose—in a vehicle the operation of which to them seems bordering on the mysterious. In this, history is simply repeating itself, as the same conservatism and timidity were exhibited by our grandfathers in the case of the stage-coach and the railway train. This conservatism has been so marked in some cities and been carried to such an extreme that the motor has necessarily been a dismal failure financially, owing to the prejudices of the public. All this is now being altered, and the conservatism of the public is giving way, with the result that the reaction is so great that motor-vehicles are now in very many districts received with joyous acclamation. In New York the Electrical Vehicle Company, which has recently being reconstructed with a very greatly increased capital, proposes to put an additional 200 vehicles on the streets; of these twenty-five will be of the coupé pattern, seventy-five of the four-wheeled "hansom" variety (an example of these has recently been seen in London), fifty full broughams with a capacity

of five persons, and fifty three-quarter broughams carrying three persons. In Paris, as recorded in our issue of the 10th inst., a large service of electric-cabs is being prepared, and in London itself a great extension of the number of licensed and unlicensed electric cabs, coupés and broughams is promised at an early date. In large centres, electricity seems to hold its own against petroleum-spirit motors. So soon, however, as capitalists recognise the fact that a motive power that can be successfully used to transport nine persons can be quite as profitably used for smaller vehicles, we shall probably witness an extension of mechanically-propelled cabs in the suburban districts, if not in the heart of our cities.

#### Primary Batteries for Ignition Purposes.

ALTHOUGH in general secondary batteries or accumulators are so much disliked by users of motor-cars as a means of furnishing the necessary current for effecting the ignition of the explosive charges of the motor, yet it is extremely difficult to obtain really satisfactory primary cells. This arises principally by reason of their usually low e.m.f. and the want of constancy. This low e.m.f. generally requires the use of four cells, and where room is limited, as is the case in many types of motor-vehicles, this has caused their rejection in favour of the secondary cells, which possess other disadvantages perhaps equally as undesirable as is the cumbrousness of the four primary cells. A correspondent, whose opinions we value highly, informs us that there has been recently produced abroad a new form of primary cell, which from our correspondent's account would appear to be without many of the disadvantages of most primary cells, although it possesses others by reason of its not being of the "dry" type. So far as we are aware the combination used in this cell has never before been used in primary batteries; indeed, we believe that this is the first time that lead peroxide has been successfully used in such a cell, although, of course, it has long been employed in secondary cells. In this cell lead peroxide and zinc amalgam are used, with dilute sulphuric acid as the electrolyte. Our correspondent states that the e.m.f. of the cell is 2.45 volts, which is certainly the highest within our knowledge. The quick depolarization obtained by the use of these elements, together with the low resistance of the electrolyte and its high voltage, probably makes this cell the most powerful on the market. We are informed that "its output is phenomenal for its size—5 inches high by 3 inches square—and that its recuperative powers are extraordinary." It is also said that the battery will give, on ordinary circuit work, a discharge of 40 ampère hours. Our correspondent also states that as "there is no local action in open circuit the cell keeps its charge indefinitely; there is an entire absence of creeping salts and corroded connections, and no liability of destruction from short-circuiting." It would also appear to be cheap in renewals, for when the cell shows signs of weakness the electrolyte is thrown away and replaced; when it again grows weak the negative element or lead peroxide stick is replaced by a new one. The positive or zinc element will generally outlast two negative elements, but when this is exhausted it can be replaced also. We have taken measures to secure a fair test of these batteries, although doubtful of their utility on motor-vehicles, and will take care that our readers are kept informed of their performances.

#### The Tire Question for Motor-Vehicles.

WHILST we in England have been struggling with the tire question ever since the re-introduction of motor-road vehicles, the constructors and designers of similar vehicles in America have also been plagued by the apparent difficulty of the solution of this problem. The London Electrical Cab Company has been twitted frequently with not having made a financial success of its first year's operations,

but apparently no allowance is made for the fact that during that period only a very few vehicles—not sufficient to recover all establishment expenses—were in operation. We cannot hope to give the whole of the many reasons which caused the Company to restrict its service, but we are quite confident that Mr. Bersey will support our contention that the "tire question" was one of the leading factors both in restricting the number of vehicles in operation and in making their running commercially unsuccessful. "Wheels" have also proved a trial to all concerned in the industry in Great Britain, and even now it is a question open to serious discussion whether the right type has yet been adopted. In France, too, the tire question has proved a stumbling block to the building of motor-vehicles for hiring in the public streets, owing to the commercially unsatisfactory results of trials of various types of tires. The difficulty has, it is hoped, been solved in France by providing the steering-wheels with pneumatic and the driving-wheels with solid tires. Were the streets of our cities paved with the best materials little or no trouble would ensue, but the granite cube, the rut-worn macadam, and the pitted soft-wood pavings are the cause of most of the troubles. In New York the Electric Vehicle Company have tried over twenty separate and distinct types of tires; probably others will have to be proved before satisfactory results are obtained. Mr. Condict, of the Electric Vehicle Company, recently stated publicly "solid, single and double-tube pneumatic, cushion, clincher, sectional, protected and unprotected have all had, or are to have, a trial. Their faults are many, their virtues few, and the Company are still on the search. Some eminent authorities in the motor-vehicle field had said that the solid is the only tire. They are rendering judgment without full knowledge of the facts, and from a purely local standpoint." It is just this point of local knowledge which is at the root of all the difficulties. If one type of paving were used throughout a city most of the difficulties would disappear, but whilst the paving consists of "patches" of differing materials with varying surfaces, so long will the tire question remain without a completely satisfactory solution.

#### Bedford and its Motor Service.

WE have spoken in a previous issue of the formation of a syndicate to provide the public with another motor-car service, the present proposed route being from Burnham Road Bridge to Kempston via St. Peter's Green. Mr. G. Salmon, of Newport Pagnell, is building the bodies of the vehicles to be put on this service, and the Motor Manufacturing Co., Ltd., are furnishing the frames and the mechanical parts.

#### Motor-Racing and Pacing.

As will be seen by reference to our correspondence columns, Mr. F. S. Edge has had some correspondence with the National Cyclists Union in regard to a rule recently passed by that body seeking to control motor-pacing and motor-racing on the track. For our own part we deprecate the employment of motor-vehicles in either of these ways, holding the opinion that their construction does not permit their developing full speed on a banked track, and further that their use in such cases is only advocated with a view to revive the decaying public interest in the somewhat discredited cycle track races. We hold the opinion, however, that if these vehicles are employed for the purpose mentioned it would be well that the N.C.U. should more definitely explain what class of vehicle they desire to control. The N.C.U. cannot for one moment be permitted to control any other than track-racing of motor vehicles in conjunction with bicycles, and we are quite sure that every automobilist will resent in the strongest possible way any attempt of this, or any other outside body, to control the movements or the uses of their vehicles excepting in the direction intimated.



### A Motor-Car Accident.

THE daily papers of Monday last recorded with the customary exaggerations a motor-car accident which occurred on Sunday in Croydon. It was reported that Mr. Harvey lost control of the vehicle, and was, with his wife, thrown out of the car, he being found to be suffering from concussion of the brain. Mrs. Harvey, of Kaliar, Normanton Road, South Croydon, has very kindly furnished us with a true account of the accident. From this it appears that Mr. and Mrs. Harvey went out on Sunday morning last in their Benz car, Mrs. Harvey having control of the steering-lever. This was Mrs. Harvey's second attempt at controlling the directing of the car, and, in order to bring her knowledge to perfection, Mr. Harvey switched the engine over to the high gear. It was owing to this that the accident happened, for Mrs. Harvey was not prepared at the moment to exercise the delicacy of steering necessary on the high speed. At the time Mrs. Harvey held the steering gear by her left hand, and the sudden increase of speed and the want of perfect control forced the car on to the kerb, with the result that it turned completely over on to Mr. Harvey, Mrs. Harvey being thrown out. The accident, fortunately for Mr. Harvey, has not resulted in any serious injuries; he has certainly a nasty flesh wound on the back of his head, but his medical advisers hold that he will be quite himself again in two or three days. We congratulate Mr. and Mrs. Harvey on their escape, and would point out that the need of a training ground is emphasized by this accident in the public street.

### The Lanchester Petroleum-Spirit Motor-Carriage.

A CORRESPONDENT sends us a few brief particulars of a new petroleum-spirit motor-carriage, constructed by Mr. F. W. Lanchester, of Birmingham, on which he had recently the opportunity of a short trip. The vehicle takes the form of a two-seated phaeton, a striking feature being that notwithstanding the small seating capacity the motor is capable of working up to ten h.p. The motor, which is arranged at about the centre of the frame, under the seat, comprises two horizontal cylinders facing each other in the same line. Two connecting-rods are attached to each piston. There are two cranks independent of each other, and two fly-wheels also independent of each other, but keyed respectively to the two crank shafts, one of which is 3 in. above the centre line of the engine, the other 3 in. below it. One connecting-rod from each piston goes to the upper crank pin and one to the lower, a kind of diamond-shaped linkage when the pistons are at mid stroke being thus formed. It is difficult to describe the Lanchester motor without an illustration, which, however, we hope to be able to publish at a later date. It may here be stated that the two crank shafts revolve in opposite directions. To counteract any vibration balance-weights are attached to the connections of the crank webs. The ignition is effected electrically either by a magneto machine or by means of a couple of storage cells. A hit-and-miss governor is fitted to the motor, and by means of small levers within convenient reach of the driver's hand the rate of sparking can be advanced or retarded as desired. The quality of the explosive mixture can also be varied, but this is really unnecessary once the best position has been found. Another feature of the Lanchester motor-carriage is to be found in the transmission gear, the margin of power in the motor making it possible to regulate its speed within considerable limits by the governor alone, and without the employment of a variable speedgear. The motor drives a friction disc, against which a plate is held by depressing a lever; this plate is keyed to a shaft carrying a worm, which gears with a large worm wheel, inside which is mounted the differential gear on the rear road-wheel axle. When the worm shaft disc is pressed against the motor disc the

worm rotates normally at the same speed as the motor; when the disc is drawn back it is forced against fixed stops, which act as a powerful brake. The steering is effected by a lever operated by the right hand of the driver, the wheels being mounted on independent axles, and coupled by a new design of compensating gear. The "body" is designed separately from the frame of the vehicle, so that different types of body can be fitted to the same frame.

## STIRLING'S NEW MOTOR CARRIAGES.

WE illustrate herewith two of several new forms of vehicles which Stirling's Carriages, Ltd., have recently placed on the market. It will, we think, be admitted that they show a great improvement on many of the older designs.

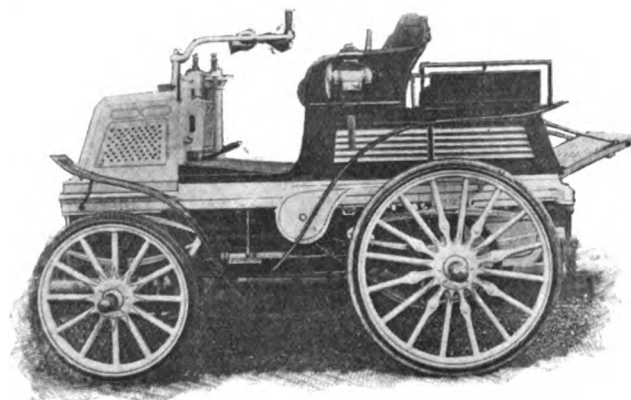


FIG. 1.

Comfort has not been sacrificed to appearance, however; indeed, the aim of the constructors has been to gain increased convenience whilst designing the vehicles on the most graceful lines possible on the somewhat ugly and "straight" Panhard frames. The engine-covers, too, have been modified, and possess a less bulky and "typewriter-cover" appearance than is usual with British vehicles of this type.

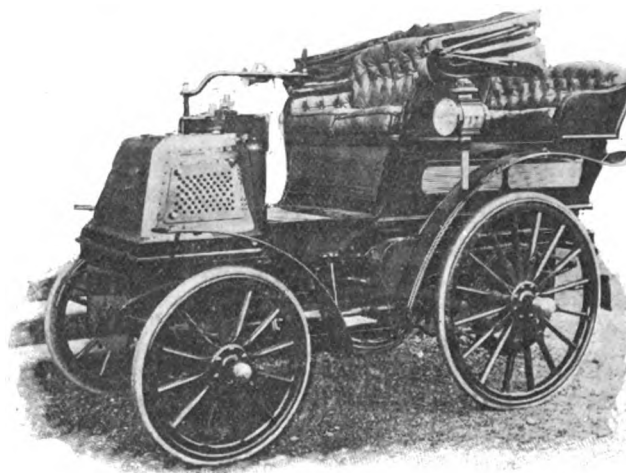


FIG. 2.

Each carriage is fitted with a 4-h.p. nominal engine developing  $5\frac{1}{4}$  b.h.p., and the transmission and speed-changing devices are on the usual British adaptation of the Panhard system.

The wheels, whilst retaining all necessary strength, have been designed to give a "light" appearance, and the carriages as a whole are extremely creditable productions of the firm, which is, by the way, one of the oldest firms of carriage builders in North Britain.

# The Filtz Rotative Motor.

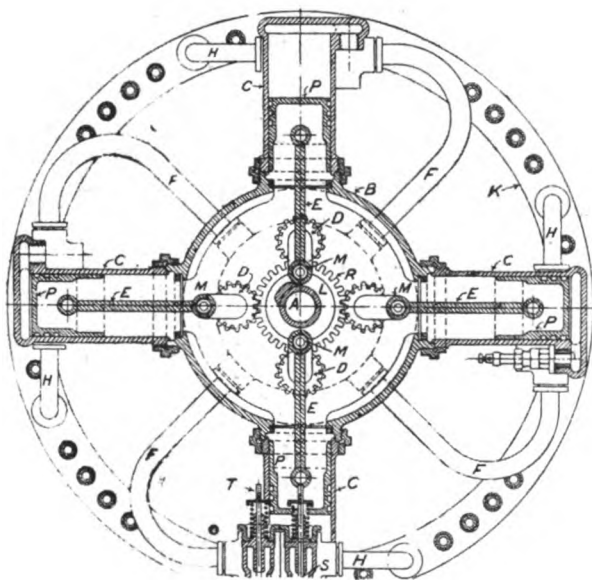


FIG. 1.

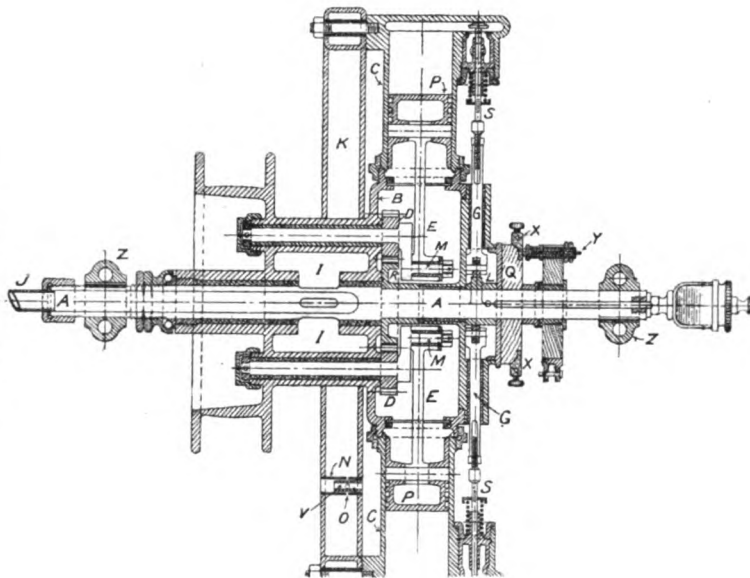


FIG. 2.

THIS motor, which we illustrate in Figs. 1 and 2, is one of the latest and most novel productions brought under our notice. In practice the motor is constructed with any desired number of cylinders, although in the drawings it is shown with four only. The cylinders *C* are connected together and fastened on a gear-case *B*, as is shown quite plainly in the drawings. In this way the gear-case with its attached cylinders forms in effect the fly-wheel of the motor, as the whole revolves round the centre shaft. Each of the cylinders *C* is provided with a piston *P*, which by means of the connecting rod *E* acts on the crank *M*. The crank is supported in bearings fixed on the gear-case *B*, and carries, moreover, the spur-wheel or pinion *D*. It is obvious, therefore, that the cylinders receive a rotative motion around the main axle *A*, and if a pulley or cog-wheel or a friction plate is fixed on the cylinders as shown in the drawings, motion is communicated by its means to the propeller shaft of a boat or the main or intermediary axle of a road carriage. The axle *A* carries a cog-wheel *R*, which is constantly in gear with the pinions *D* carried on each of the four cranks *M*. It is therefore evident that when the motor is in action the piston rods acting on the cranks *M* communicate motion to the pinions *D*, which consequently turn round the fixed cog-wheel *R*, and so communicate motion to the gear-case cylinders and attachment. When the cylinders are designed to work in pairs, as is the case shown in the illustrations, it is considered advisable, in order to avoid the vibratory reactions of the explosions, to have the two opposite cylinders to work in unison. The explosive gases are admitted to the cylinders, first through the hollow axle *A*, which communicates with the chamber *I* by means of the tube *S*, and their admission is controlled by the valve *T*, entering the explosion chamber of the cylinders by the tubes *J*. The burnt gases are exhausted through the exhaust valves into the hollow rim *K* by means of the tubes *H*. The exhaust pressure is broken up by two choking tubes *H* and *V*, the exhaust to the atmosphere being accomplished without noise. As shown in the drawing, the explosions take place one after the other in each of the four cylinders; the single cam fixed to the main axle *A* opening each of the four exhaust valves in turn. The admission valves are automatic, opening as usual on the inspiration stroke of the engines. The rim *K*, it will be noticed, acts as a brace, holding the four cylinders rigidly, and forms also a part of the "fly-wheel." The ignition is electric, the sparking being con-

trolled by a four-branched commutator which switches the current into the ignition plug of each cylinder every time the brush *Y* comes into contact with one of the copper blocks on the insulated brush cam. In the illustration the piston of the top cylinder is at the end of its stroke, and the exhaust next takes place. As the pinion *D* guides this cylinder into its next position, so the exhaust takes place, each cylinder, of course, working on the well-known Otto cycle. As the pinion *D* is one-half the size of the cog-wheel *R*, each cylinder will have effected two complete revolutions, whilst the whole system makes one turn round the central axle. Thus for every complete turn of the whole system round the axle there are four explosions, one taking place in each cylinder. As four impulses are given per revolution of the "fly-wheel," the torque is very constant and vibration is avoided. It will be agreed, we think, that this motor is very novel in design, and if it be properly built it would appear that it should give excellent results. We have seen a motor built on this principle, weighing 66 lb., giving out on the brake  $2\frac{1}{2}$  h.p. at 600 revolutions per minute. It was of the same design as shown in the drawing, and measured 56 centimetres in width and 60 centimetres high.

THE date of the commencement of the French Automobile Club's accumulator competition has, we learn, been postponed to April 24th.

THE Washington Automobile Company is the name of a company which has just been formed at Washington, U.S.A., with a capital of £10,000.

THE 1899 list issued by the Kingsland Manufacturing Company, of King Henry's Walk, N., contains some interesting information about their machines and motor-tricycles.

THE title of the concern hitherto known as Messrs. Henri Michaux & Co., Société d'Etudes pour le Développement de l'Automobilisme en France, of Paris (66 Rue Caumartin), has been changed to La Société Commerciale du Cycle et de l'Automobile (Lasne, Delaye & Co.).

THE EAST KENT MOTOR-OMNIBUS COMPANY, LTD., the prospectus of which was advertised last week, has gone to allotment, ample capital having been subscribed. The Company has been formed for the purpose of running the Liquid Fuel Company's omnibuses.

# Leaders in Mechanical Road Locomotion.

No. 2.—MONSIEUR EMILE LEVASSOR.

**M**ONSIEUR EMILE LEVASSOR, whose untimely death on April 14th last year was reported to have occurred through a slight accident met with in the Paris-Marseilles race, was a gentleman whose name is almost as well-known and appreciated in motor-car circles in England as it is honoured and respected in France.

To Monsieur Levassor is due, perhaps more than to any other man, the credit for having revived the public interest in mechanical road locomotion. He it was who acted as foster-father to Herr Gottlieb Daimler's engine, and to his energy and perseverance is due in a great measure the success with which that engine has been employed in mechanical road locomotion.

Born in the year 1844, Monsieur Levassor passed through the "Ecole Centrale" as a student and finished his early education in 1864. He subsequently spent a few years in the establishment of John Cockerill at Seraing, and next joined the staff of M. Durenne at Courbevoie.

In the year 1872 he commenced his connexion with the house of Perrin & Panhard, a connexion which was only severed by death in 1898. In the first-mentioned year he became a partner in this old-established business, and became the senior member of the firm on the death of Monsieur Perrin.

It was in the year 1876 that Monsieur Levassor's firm took up the building of gas-engines, principally for Monsieur Sarazin, who held all the French patent rights in the inventions of Dr. Otto. In course of time Monsieur Sarazin also acquired the French patent rights in Herr Daimler's inventions for petroleum and petroleum spirit engines, and he transferred the rights of building these to Messrs. Panhard and Levassor; in this way Monsieur Levassor became the constructor of the first Daimler engine built in France.

In 1887 Monsieur Sarazin died, and his widow continued to grant Messrs. Panhard & Levassor licences to manufacture Daimler engines. Ultimately, however, Monsieur Levassor married Madame Veuve Sarazin, but even now Madame Veuve Levassor still holds in her own right the Daimler patents for France and Belgium.

From the time that Monsieur Sarazin licensed Messrs. Panhard & Levassor to manufacture under the Daimler patents, Monsieur Levassor devoted himself to the solution of the problems connected with the question of mechanical locomotion on common roads, applying his energies more especially to utilising the Daimler engine. Ultimately complete success attended Monsieur Levassor's constant efforts, and in the year 1894 his carriages obtained the premier

positions and the highest awards in the now world-celebrated Paris-Rouen race.

In the year 1895 Monsieur Levassor first applied the improved form of Daimler engine, known as the "Phoenix," to a road carriage, and in that year again carried off premier honours in the Paris-Bordeaux-Paris race, accomplishing the distance in 48 hours 48 minutes without dismounting from his seat in the vehicle. Not only did this performance prove the great endurance, tenacity of purpose, and dogged perseverance of Monsieur Levassor, but it also proved conclusively that carriages constructed on his system and fitted with the

Phoenix-Daimler engine were reliable vehicles, his carriage accomplishing the whole journey without one single breakdown or stoppage for adjustment or mechanical repairs.

It was this magnificent performance which proved conclusively to the public that mechanical road locomotion was within the bounds of possibility.

Not content with the success already gained, Monsieur Levassor day by day laboured to improve and perfect the mechanical details of his system, and in 1896 he drove in the Paris-Marseilles-Paris race the first vehicle constructed with a 6-h.p. Phoenix-Daimler engine. Three months after this race his labours were brought to a conclusion by his untimely death, which, as we have mentioned, was held to be primarily due to the severe fall and shock sustained by Monsieur Levassor owing to his car running over a large dog during the Paris-Marseilles race and thus capsizing.

Such is in brief the history of the too speedily ended life of Emile Levassor, a man universally liked by colleagues, employes, friends, and acquaintances; a man of far-seeing and clear-headed designs, of indomitable energy and perseverance, and one

whose personality the "new industry" could ill afford to lose.

It is well to remember that all the English-built cars employing the Daimler-Panhard system owe their existence to the drawings and work of Emile Levassor; it would be but a graceful recognition of his work if the system known in England as the "Daimler-Panhard" were termed the "Daimler-Levassor," and so far as this Journal is concerned, to mark its appreciation of the work of Monsieur Levassor, this term should be used in its columns in the future.

DICK FARMAN.

UNDER the patronage of the French Automobile Club, the Veloce Club de Tours is organizing a motor-car race between Tours and Angers and back, to be run off on September 10th next.



THE LATE MONSIEUR EMILE LEVASSOR.

## MOTOR-CARS ON THE CONTINENT.

### Self-Propelled Omnibuses in Paris.

THE French Department of the Meuse has made a formal contract with two persons for running a regular line of self-moving omnibuses over a public highway twelve miles long, between two railroad stations. The vehicles are to have seats for fourteen passengers, make the round trip at least three times daily, and the fare is limited to 1½d. per mile. Express goods will be carried on these vehicles, which must be able to carry 2,200 lb. of goods besides the passengers. The speed is limited to 12½ miles an hour. The contract also provides for the carriage of ordinary freight by a traction-engine drawing two waggons, with an aggregate capacity of 11,000 lb. Two classes of freight are provided for, with maximum rates of 12 and 15 cents. per ton per mile. A subsidy is granted for both passenger and freight service.

### The Lutzmann Reconstruction.

WE learn from a German correspondent that the firm of Adam Opel, of Rüsselsheim, cycle and sewing-machine manufacturers, have taken up the manufacture of motor-cars. In order not to waste time in unnecessary and expensive trials, the firm have acquired the plant of Herr F. Lutzmann, Dessau, together with the patents and stock, all of which, including a well-drilled staff of workmen, have been transferred to Rüsselsheim. The new factory is entirely distinct from the old establishment, and is under the management of the former proprietor of the Dessau firm, Herr Lutzmann, who has entered the new undertaking as director.

### Wheels for Motor-Cars.

AN interesting article on "Wheels for Motor-Vehicles" from the pen of Gaston Sencier appears in a recent issue of *La Locomotion Automobile*, a perusal of which goes to show that the question of the most suitable type of wheel for automobile vehicles is far from being settled even in France. The author makes no suggestions as to the best type of wheel, but draws attention to the great variety of types in use by different makers, and urges that more attention should be devoted to the matter, the wheels in his opinion, as in ours, forming a very important part of a motor-car.

### French Motor-Cars in Belgium.

IT is announced that a Belgian concern, La Société des Ateliers Snoeck, of Ensival, has acquired the patent rights in the motor-carriage designed by M. de Riancey, of Paris. The vehicle is propelled by means of a petroleum-spirit motor, the feature being that the engine, together with the whole of the transmission gear, is mounted on the front wheels, as in the Prétot and Amiot-Péneau "avant-trains."

### Motor-Car Races at Nice.

THE attention of the French automobile world is just now centred on the doings at Nice, where the present week has in society and sporting circles been almost entirely given over to motor-vehicle races. On Tuesday two races were run, one for motor-cycles and carriages, between Nice, Castellane, Puget, Thénières and Nice, a distance of eighty kilometres, and one for touring vehicles, between Nice, Cagnes, Magagnosc, Tourettes, Gattières and Nice. On Wednesday all the competing vehicles were placed on exhibition at Nice, while yesterday was devoted to a series of mile races along the Promenade des Anglais. To-day's programme comprises a competition as to the most comfort-

able and elegant motor-carriage, and a race from Nice to Monte Carlo. This latter is divided into four sections—(1) Two-seated carriages, (2) four-seated carriages, (3) six and more seated carriages, and (4) motor-cycles. The week's festivities will be brought to a close to-morrow by an automobile *rallie-papiers*, or following a "paper scent."

### Electrical Vehicles in Germany.

DIE GESELLSCHAFT FÜR VERKEHRS-UNTERNEHMUNGEN is the name of a new company which has just been formed in Berlin, with a capital of £90,000, to manufacture and operate electric motor-vehicles. The new company is very influentially supported, the Motorfahrzeug und Motorenfabrik, of Berlin, and quite a number of the leading German electrical engineering concerns, including Messrs. Siemens and Halske, of Berlin, and the Pollak Accumulator Co., of Frankfort, being interested in the new undertaking.

### Dutch Postal Motor-Vehicles.

THE Dutch Postal authorities are, we learn, about to carry out some trials with motor-vehicles. Offers to submit vehicles were received from about twenty firms, and out of these the following four concerns were selected: The Daimler Motor Co., Limited, of London; the Daimler Motoren Gesellschaft, of Cannstatt, Wurtemberg; La Société des Automobiles Peugeot, of Audincourt (Doubs), France; and Messrs. De Dietrich & Co., of Luneville, France. The trials are to commence in May.

### French Automobile Club's Motor-Cycle Race.

THE annual Coupe des Motocycles race, organized under the auspices of the French Automobile Club, is to be run off on May 14th. The distance is 100 kilometres, and the course, 50 kilometres out and back, from a point on the road between Orleans and Vierzon. The race is open to any motor-vehicle, weighing empty—that is to say, without riders or fuel—less than 440 lb. The prize is a challenge cup, which, however, only becomes the property of a competitor who wins the race two years in succession.

### The Benz Conversion.

SOME weeks ago it was reported that the business of Messrs. Benz & Co., of the Rheinischen Gasmotoren fabrik, Mannheim, the makers of the well-known motor-vehicles, was to have been converted into a joint-stock company. We now understand that the conversion has just been effected, the concern having been registered with a capital of £150,000.

### A Motor-Car Fire in Nice.

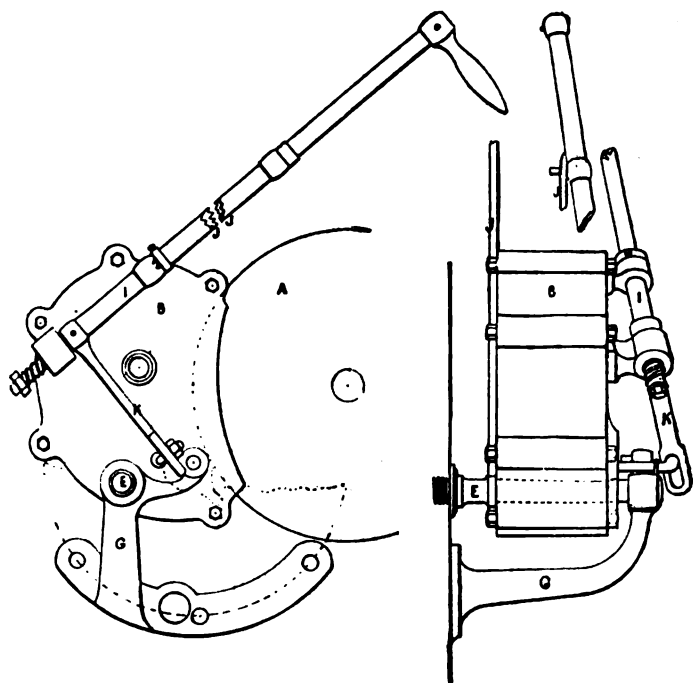
ACURIOUS accident happened lately at Nice, at the Continental Hotel. Quite suddenly, at one o'clock in the early morning, a terrible explosion woke up the whole of the inmates of the hotel, who were greatly terrified at the fierceness of the fire which they found raging in the courtyard. The explosion and subsequent conflagration were caused by an auto-car which was on fire owing to the imprudence of a waiter who was endeavouring to find a small dog which was supposed to have hidden itself in the carriage. He very unwisely conducted his search with the aid of a naked lighted candle. The explanation of the accident is that either the petrol tank or one of the pipes connecting it to the carburettor was leaking, with the result that the gaseous fumes became ignited from contact with the naked light. Unfortunately the car was ruined ere the flames were subdued, and the prime cause of the disaster—the dog—was killed.

**Whitsuntide Races.**

ARRANGEMENTS are in hand for the running off of two motor-car races during the local fêtes at Draguignan which take place at Whitsuntide. One race will be from Draguignan to Cannes and back, and will be restricted to racing vehicles. For heavier motor-cars, a race between Draguignan and Brignoles and back is being organized. *La Locomotion Automobile* states that efforts are also being made to obtain the use of a large building in which the competing vehicles may afterwards be placed on exhibition.

## MOTOR - TRICYCLE SPEED - REDUCING GEARS OR HILL-CLIMBING DEVICES.

ONE of the main drawbacks to the use of motor-tricycles is that the power of the motor has hitherto been transmitted to the rear axle of the machine at one fixed ratio of speed. Several inventors have endeavoured to devise a variable-speed gear for use on motor-tricycles, and one of the latest to come under our notice is that known as the Couget, which is being introduced by Messrs. M. G. Marais & Co., of 28 bis Rue Guersant, Paris. The object of the device is, of course, to obtain a further reduction of the speed of rotation of the rear axle of the machine without reducing that of the motor. In the Couget device this is effected by interposing between the pinion *F* on the motor-shaft and the spur wheel *A* on the axle of the tricycle a wheel



FIGS. 1 AND 2.—SHOWING ACTION OF CONTROL LEVER OF COUGET GEAR.

*D*, the diameter of which is four times greater than that of the pinion *F*. On the short shaft which carries the wheel *D* is also fitted a small pinion in gear with another small pinion *C*, which in turn gears with the wheel *A*. The pinion *F* is so mounted on the motor-shaft that it may be displaced through the medium of the connecting levers and handle *I J K*, within convenient reach of the rider, and made to gear with either the wheel *A* directly or with the wheel *D*, or it can also be placed in an intermediary position, so enabling the motor to be instantly cut off from the power-transmission mechanism. On level roads the usual position is adopted—that of pinion *F* on the motor-shaft gearing directly with the wheel *A*; up hill, the handle *J* is pulled over, thus bringing the pinion *F* into gear with *D*, and so reducing the speed of the tricycle without decreasing that of the motor. The gear runs in an

oil-containing chamber, provision being made for ample lubrication of the parts. The apparatus is stated to have been tested on some very steep hills in France, a  $1\frac{1}{4}$ -h.p. motor-tricycle, fitted with the device, with trailing carriage

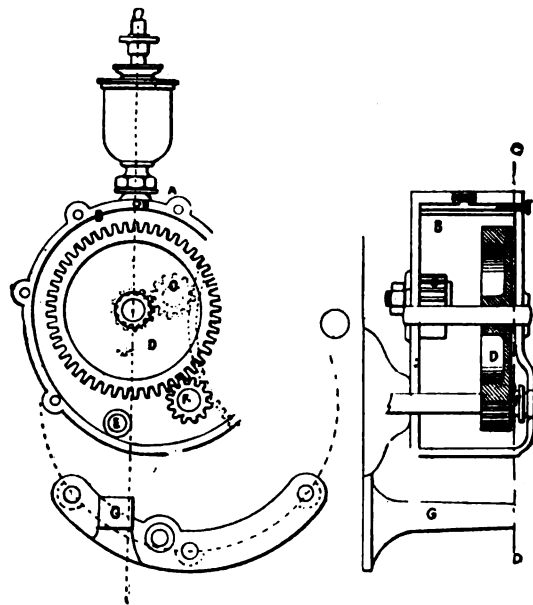


FIG. 3.—DETAILS OF MECHANISM OF COUGET GEAR.

containing two persons, having traversed successfully the hilly road from La Corniche to Nice without it being necessary for the rider to pedal.

Another device having a similar object is that known as the Didier, which has lately been introduced by Messrs. Guyenet, Balvay & Roudier, of 73 Avenue de la Grande Armée, Paris, and of which an illustration is given in Fig. 4. The gear is carried in a frame attached to the side of the

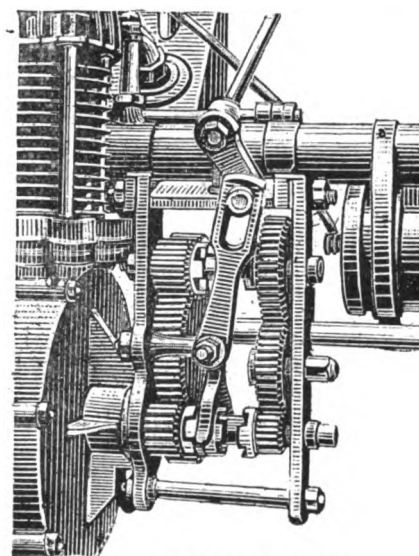


FIG. 4.—THE DIDIER GEAR.

motor. The crank-shaft of the motor is made rather longer than usual, and carries two pinions, both of which run loose on the shaft. One of the pinions gears directly with the large spur wheel on the axle of the tricycle, while the right-hand one gears with an intermediate spur wheel mounted on a short spindle, which in turns gears with another toothed wheel keyed rigidly on one end of an upper shaft. At the opposite end of the latter is a small-toothed wheel gearing directly with the large spur wheel on the tricycle axle. It will be noticed from Fig. 4 that the two small pinions on the motor shaft have formed with them what may be termed the female portion of a finger clutch, each having four slots into which fit cor-



responding projections on the male portion of the clutch. The latter is arranged between the two pinions in such a way that while it rotates with the motor shaft it is free to be moved either to the left or right along it, this movement being controlled by the series of levers seen in the illustration, which are connected with a small handle attached to the frame of the tricycle in front of the rider. Pulling this handle over in one direction brings the clutch into gear with the left-hand pinion, the machine being then driven at the normal speed of the motor; up hill the handle is pushed over in the opposite direction, bringing the clutch into gear with the right-hand pinion, and so reducing the speed of the machine without decreasing that of the motor. The handle, and con-

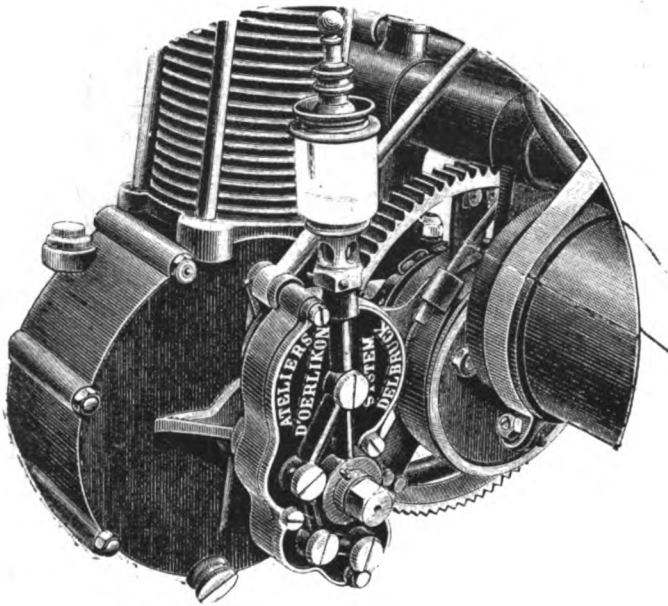


FIG. 5.—THE DELBRUCK GEAR.

sequently the clutch, may also be placed in a central position, thus enabling the motor to be entirely and instantly cut off from the power transmission mechanism. One of the principal claims made for the Didier variable-speed gear is that all the spur-wheels are always in gear with each other and revolving, so enabling the change from a high to a low speed to be made without stopping the motor, and without any fear of damaging the teeth of the wheels. The illustration (Fig. 4) shows the gear uncovered, but in practice it is enclosed in an oil-containing case. The Didier gear has, we understand, been tried by and received the approval of M. Bouton, of Messrs. De Dion & Bouton, the makers of the well-known motor-tricycle.

Fig. 5 gives a general view of another speed-reducing gear for motor-tricycles which has recently been put on the market by M. Georges Delbruck, of 7 Rue Garnier, Nice. The gear, as will be seen from the illustration, is enclosed in an oil-containing case. Unfortunately, we have been unable to obtain a drawing of the gear with the cover removed, but we learn that it consists of a series of spur wheels. It is controlled by a small handle fixed on the frame in front of the rider. With the handle pulled over in one direction the normal speed of the motor is transferred to the tricycle, while with the handle pushed over in the opposite direction the tricycle is only driven at half the speed of the motor, the latter being entirely cut off from the transmission mechanism when the handle is in a central position. One of the drawbacks to the Delbruck gear, which weighs  $7\frac{3}{4}$  lb., is that it is necessary to almost bring the motor to a standstill before changing from one speed to the other.

THE much "bepuffed" American Compressed Air Auto-Truck Company have announced their intention of running a line of omnibuses in Fifth Avenue, New York.

## A NEW VOITURETTE: THE "UNION."



CONSTRUCTORS in France, as well as those in England, are at last recognising to the full the public demand for a light, cheap, two-seated motor-car. The French makers have recognised the demand for some time, but instead of striving to reproduce a carriage in miniature, have endeavoured to make the public put up with more or less unsatisfactory adaptations of the tricycle or quadricycle body with additional seats for the convenience (?) of riders.

Makers do not seem to understand that the public do not really desire this class of vehicle: they will take it in some cases, owing to the inability to obtain better designed vehicles, but there are still a large number of people who will rather go without the desired motor-voiturette than put up with the crude transformations offered them at present. The whole character and meaning of the word "voiturette" seems to have been deliberately overlooked, both in France and in England, and manufacturers have been content to pervert its meaning by advertising their productions by this term. "Voiturette" means simply "a little carriage," it certainly does not mean a two or three-seated tricycle, nor does it mean a trailing car that can be attached to a tricycle. Some French makers have designed vehicles which conform to the term used, such as the Elan, Decauville, and some other concerns, but in England no such endeavour has been made, so far as practical cars are concerned.



Amongst the latest productions partaking of the voiturette character is that illustrated herewith, but this still leaves much to be desired. The vehicle is known as the "Union" voiturette in France, and is certainly not the worst of many similar productions. It is, to French people at least, "elegant" in form, and possesses the further advantage of being light in weight.

The frame is constructed of steel tubing, and is carried on two pairs of wheels. The motor employed is of the De Dion type, developing  $1\frac{3}{4}$  h.p., and is mounted at the back and gears with the rear road-wheel axle similarly as is the case with the De Dion tricycle. Two different speeds are, however, available, a "demultiplicateur" or reducing gear being provided; and the motor, moreover, can be thrown out

of action by a release of the friction clutch. The ignition of the gaseous charges is effected by an electric spark, the current for producing this being controlled by a switch placed on the handle-bar of the steering apparatus. The vehicle is also provided with a hand lever, as shown in the illustration, which is utilised for starting the motor. The advancing of the ignition and the control of the air supply, and consequently the carburetting device, is obtained by means of two small levers placed on the front of the seat beneath the driver.

In practice we have found the "Union" voiturette to work very satisfactorily indeed, but its average speed is, of course, not very high, especially on hilly roads. The main objection to this voiturette arises from the fact that the motor employed is not really sufficiently powerful to give the range of speeds so generally desired by those requiring this type of vehicle.

## SCOTTISH NOTES.

### The Weather and Dress.

THE cold March winds to which we have been treated this week have naturally kept many motor-car enthusiasts from their favourite long-distance driving. It has been cold enough for out-of-door locomotion of any sort, but the speed-travelling obtainable on a motor-car is, at low temperature such as we have been experiencing, enjoyable only to those who are specially protected from cold in clothing approximating that of the Esquimaux, or the leather costumes adopted by many French automobilists. So far as Scotland is concerned nothing in the way of a specially-designed costume has been adopted by motor-carists. For cold weather such as obtains in early spring as well as autumn and winter, clothing of a particularly warm character is absolutely necessary—something different to anything we have yet been accustomed to. Before the advent of the motor-car we never thought of road driving for 50 to 100 miles at a time, consequently no provision was necessary beyond a warm driving coat and gloves. It is quite different now, and some advance in costume-making for motor-carists is urgently required.

### A New Stirling-Daimler Car.

I HAD an opportunity this week of a ride of some 25 miles on one of the latest cars turned out by Stirling's Motor Carriages, Ltd., of Hamilton. The car, which is fitted with a 5½-h.p. Daimler motor, has been purchased by an Edinburgh gentleman, and I must say is the most elegant and fleetest looking car I have yet seen. The body is of the type known as the "dog cart," but its lines have to be seen to be appreciated. The front or driving seat is built up in wood framing, and has finely curved panels. Its upholstery in fine blue cloth is of the most luxurious description, and the occupant experiences the comfortable sense of sitting in the most heavily upholstered easy arm-chair. The form of the hind seat is simpler, with rectangular lines which contrast well with the circular lines of the front. The body panels curve gently outward, and are relieved with well-proportioned louvres. The body is painted in dark blue, with wheels and undercarriage of exquisite ivory white, and lined out in two shades of blue. It is furnished with handsome brass-mounted lamps and fitted with elegantly curved patent leather mudwings, giving the whole vehicle a distinct and graceful character. In aristocratic Edinburgh it is certain to be much admired, and will do much to remove the prejudice of many good people who objected to the designs of some of the earlier vehicles. The run was of the most pleasant description. The ease with which the car could be manipulated under the varying conditions of road and traffic was remarkable, and I dismounted from the carriage after my 25 miles

"spin" feeling that it only required a run of that distance on a really first-class motor-car to convert the most obstinate opponent of the mechanical carriage.

### The Scotch Police and Motor-Cars.

IN my wanderings in various parts of England and over a considerable portion of the land of the "mountain and the flood," I have had occasion to remark on the attitude of the police authorities in both divisions of the kingdom with regard to the new vehicles. I have invariably found the Scottish police well-disposed to the motor-car, and in several instances I believe they have been able to render valuable assistance to autocarists. A case which came under my notice recently illustrates this: A motor-car party were returning from a trip one evening last week some miles south of Glasgow when they encountered a stretch of newly-laid road metal extending about 150 yards and across the whole width of the roadway. To have driven through it would have seriously damaged the rubber tires, to say nothing of the wheel rims, and to avoid it one course only was open—that of riding on the footpath. This was the course adopted, and although a bold representative of the law was present he, metaphorically speaking, "looked the other way." I do not know the law in the matter of road-making and road obstruction, but I imagine that the county council who are responsible for this antiquated method of road-repair could be held responsible for damage to vehicles compelled to pass over roads in this condition.

### The Benz in Scotland.

THESE little cars, so popular on the Continent, are now obtainable in Aberdeen, Harper's Motor Company of that city being the sole agents for Scotland. I understand specimens of these cars are at present being exhibited in Edinburgh and Glasgow, and as soon as their merits are demonstrated on our Scottish roads the agency should become of considerable importance.

### Dundee Enterprise.

TO the enterprise of the Dundee and District Tramway Co., Ltd., is due in no small measure the popularity of the motor-car in the north-east of Scotland. As early as February of last year the directors of this concern, who, in addition to their tramway system, possess a large coach-hiring business, visited all the motor-car manufactories in the kingdom. The last place visited, curiously enough, was the Hamilton factory of Messrs. Stirling, where they found exactly the type of motor-car they were in search of, and an order was placed shortly afterwards. The success of this car led to orders for two more being placed with the same firm, and throughout the summer they have been in great demand. Another mark of this Company's confidence in the motor-car may be found in the fact that the Hamilton firm have a steam omnibus at present being built for them. The vehicle is to seat eighteen persons, and will be propelled by a Leyland motor, which was so successful in the official trials at Liverpool and Birmingham last year.

### The Mors Challenge.

I HAVE heard many regrets expressed in view of the probability of this contest falling through, the letter of the Automobile Association, Limited, which appeared in last week's issue of *The Motor-Car Journal* being generally read to mean that quibbles would be raised which in the end would effectually obstruct the progress of arrangements. It is regarded as quite ridiculous on the part of the Mors people to suggest to race a 125-guineas Pennington car with a small single motor advertised as speeded no higher

than 18 miles per hour against their Mors with double cylinder motor at more than three times the price (380 guineas), and described as speeded to over 30 miles per hour. A two-cylinder "Mors" against a two-cylinder "Pennington" is considered here to offer a fair and reasonable contest, and it is hoped an effort will be made to bring off the event.

#### Motor-Cars for Bathgate.

I AM informed that premises have been acquired in Bathgate, Glasgow, for the purpose of establishing the motor-hiring business. The enterprise, I believe, is a private one, and considering the populous nature of the district it should prove remunerative. There is, no doubt, a great opening for such ventures in large districts as well as in holiday resorts, and the progress of the Bathgate establishment will be watched with interest.

#### The Pennington at Edinburgh.

THE practical demonstrations of the capabilities of the new Pennington cars which I had the opportunity of witnessing during the Edinburgh show last month have left a very pleasing impression on minds which had previously been somewhat sceptical. There is perhaps no better city or district in Scotland in which a motor-vehicle can be more completely tested. For speed on the level the Queensferry Road offers every facility, and for hill-climbing our "modern Athens" presents a dozen gradients ranging from 1 in 4 to 1 in 12, some of them long and difficult. It was when the Pennington car was seen to skip up such hills with apparent ease that faith was born in the sceptical and fresh confidence in those who were believers. I understand that within the next week or so several of the new Pennington-Stirling cars will be put on the road, and so soon as I have had an opportunity of a trial of one of them I will report fully the results thereof.

#### The Scottish Club.

I HAVE been requested to invite all who are interested in the proposed Motor-Car Club of Scotland to send their names to Messrs. Mitchell and Smith, C.A., 59 St. Vincent Street, Glasgow, who have, I am informed, agreed to act as *pro tem.* honorary secretaries, in order that a date may be arranged convenient to all on which to call a preliminary meeting. It should, of course, be understood that the club will not be confined to owners of motor-vehicles, but will be open to all who are in any way interested in, or desire to become connected with, the motor-car movement. I need hardly say that it will expedite matters considerably if names are forwarded promptly.

BROWN HEATHER.

TART, a motor cyclist, has beaten the world's record for motor-tricycles from 1 to 47 kilometres at the rate of 39 1-3rd miles per hour.

FRANK MORRIS, of London Road, King's Lynn, has been appointed sole agent for Norfolk for the Daimler Company's motor-cars. He also holds an agency for the Benz carriages and Beeston motor-tricycles.

A COMPANY has just been formed in Paris (22 Rue Laferrière, with the title La Société de Voitures Automobiles de Petite Livraison—Lemue & Lantry) to manufacture and introduce a new type of light motor parcels delivery van.

THE first public motor-cycle race will take place at the Crystal Palace on Easter Monday. The first event is one hour's race between C. G. Wridgway and a Parisian "Chauffeur," M. Rigal. The riders will be started from opposite sides of the track, and each will have a time-keeper, so that records can be accurately kept. Chase and Palmer will subsequently ride a race paced by motor-cycles.

## THE PLANTEAU PETROLEUM-SPIRIT MOTOR.

AMONGST the many attempts to produce a perfectly-balanced impulse engine, one of the latest to come under our notice is that illustrated in Figs. 1 and 2, showing respectively a part-sectional front elevation and a transverse section of the petroleum-spirit motor invented by M. J. Planteau, of Bolbec (Seine-Inférieure, France). From the illustrations it will be noticed that the cylinder *C* is made rather longer than usual to contain two pistons *D* and *D'*, the explosion taking place between the two pistons and forcing them outward at the same time. The piston *D* is directly connected to the crank *v* on the crank shaft *A*, while on the other hand the piston *D'* is provided with a short piston-rod which terminates at its upper end in a cross-head *F*. At each end of the latter are attached sliding rods *tt'*, which, extending along the sides of the cylinder, pass through holes in the crank casing *B*, the lower ends of these sliding rods being connected together by a short shaft *o*. Two pairs of sliding pieces *T* are arranged within the casing *B*, between which the shaft is kept in a perfect vertical up-and-down movement by means of sliding bearings. On the shaft *o*, between the two sliding pieces *T*, is arranged a connecting rod *d'*, which works on a second crank *v'* on the crank-shaft set at an angle of 180 deg. to *v*, the

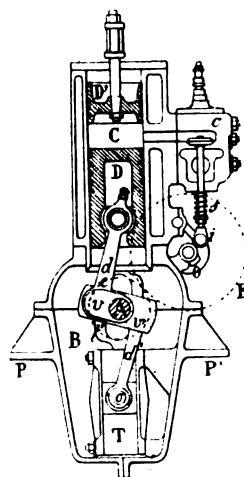


FIG. 1.

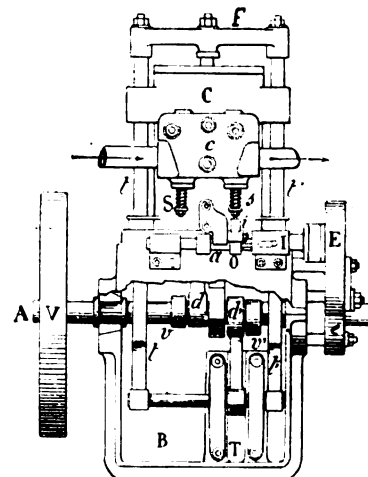
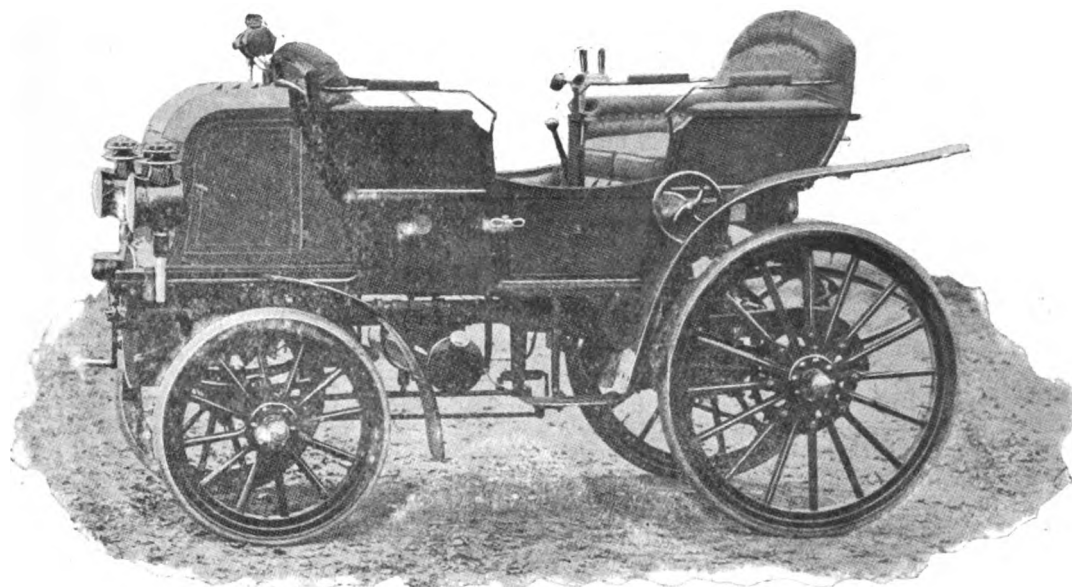


FIG. 2.

two connecting rods being, it is claimed, in this way equally balanced at every point of the stroke. The valves are contained in a special chamber *C* at the front of and cast in one piece with the cylinder. The admission valve *S* works automatically—that is to say, it is opened by the aspiration stroke of the motor. The exhaust valve *s* is opened by means of a little pivoted piece *i*, which is lifted at every second revolution of the motor-shaft by the cam *O*. The latter is carried on a sleeve *I* on an intermediary shaft *a* driven off, and at half the speed of, the motor shaft, through the gear-wheels *E e*. The motor is provided with a governor which controls the sleeve *I*; when the speed becomes excessive the latter is caused to slide to the right, carrying with it the cam *O*, the exhaust valve being thus kept closed until the speed has again assumed the normal. The ignition is arranged to be effected as desired, either by an incandescent tube or electrically. The cranks and connecting rods work in an oil-containing chamber *B*, which is built up of two halves, so that the working parts may be readily accessible in case of necessity. M. Planteau claims that by the arrangement he has adopted he has succeeded in not only obtaining a perfectly-balanced engine, but also an equality in the direction and intensity of the strains, in this way overcoming vibration. The motor, which has a water-jacketed cylinder, normally runs at a speed of 500 revolutions per minute.

## Motor-Cars in Holland.



DAIMLER (CANNSTATT) *Vis-à-Vis* CAR. EXHIBITED BY HERREN WILLEM REMMERS & CO.

THE EXHIBITS AT THE CYCLE AND MOTOR-CAR EXHIBITION IN AMSTERDAM.

EVER since the visit of the members of the French Automobile Club to Holland last year, an increasing amount of attention has been paid in that country to the automobile movement, and if proof of this fact were needed it is to be found in the large display of motor-vehicles which is at present being made in connection with the Cycle and Motor-Car Exhibition which was opened in the Paleis voor Volkslijdt in Amsterdam on the 16th inst., and which closes on Sunday next, the 26th inst. Although the exhibition contains nothing very new to those who keep in close touch with the motor-car movement, the bulk of the vehicles displayed being of foreign construction, yet the show is attracting considerable attention on the part of Dutch *chauffeurs* who have taken advantage of the opportunities the exhibition has afforded of comparing the products of motor-car builders in England, France, and Germany.

Mr. Willem Gerth, of Trans II., Utrecht, exhibits a four-seated 4-h.p. victoria, constructed by M. H. Vallée, of Le Mans, France. It is unnecessary to deal at length with the Vallée car, its details being already fairly well known in this country. Mr. Gerst also exhibits a light three-seated carriage of French construction known as the "Dumond." The vehicle is fitted with a 3-h.p. petroleum-spirit motor. The ignition is electrical, while the cylinder is provided with a water-circulating jacket. The weight of this little car is stated to be just over 3 cwt. A De Dion motor-tricycle and a "Dumond" motor-quadracycle, fitted with a 2-h.p. motor, to seat two persons, are also exhibited at this stand.

The De Hinde Rijwielen Machinefabriek (Van Gink, Ott Bultmann & Co.), Amsterdam, show the parts of a new light motor-vehicle they are constructing. The car, which will seat four persons, *char-a-banc* fashion, has a frame built up of steel tubes, and is provided with two petroleum-spirit motors of 2½-h.p. each, which are so arranged that only one, or both, the motors can be employed as desired. The motors, which are located in the rear portion of the vehicle, are fitted with electrical ignition and with radial discs to the cylinders for cooling purposes.

Messrs. Willem Remmers & Co., of Amsterdam, the agents for Holland and the Colonies for the Daimler Motoren

Gesellschaft, of Cannstatt, Wurtemberg, have on view a couple of vehicles constructed by this company—a four-seated 4-h.p. *vis-à-vis* (which is illustrated in Fig. 1) and a 1½-ton 4-h.p. motor-lorry, which call for no special description at this time, a similar remark applying to the exhibit of Mr. W. J. Stokvis, of Arnhem, the Dutch agent for the Daimler Motor Co., Ltd., of London and Coventry, which comprises three vehicles constructed by this company—a Rougemont wagonette, a Wyley phaeton, and a delivery van.

Mr. B. J. Rubens of Amsterdam, who represents in Holland Messrs. De Dietrich & Co., of Lunéville, France, exhibits a 6½-h.p. motor-wagon built on the Amédée Bollée system. The vehicle is built on similar lines to the one which took part in the French Automobile Club's *poids-lourds* trials last year.

La Société des Voitures des Etablissements Decauville Ainé, of 11 Boulevard Malesherbes, Paris, shows through its Dutch agent, Mr. H. J. Van Ewijk, of Amsterdam, four of its well-known type of light two-seated motor-carriages.

Mr. B. A. Jansen, of 379 & 380 Zuid-Willemsvaart C., Hertogenbosch, exhibits a 5-h.p. petroleum motor-carriage constructed by Messrs. Cambier & Co., of St. Maurice, Lille; a small 2-seated 3-h.p. carriage by the Anglo-French Co., and a couple of motor-tricycles.

Other exhibitors of motor-cars are the Groninger Motor Rijtuigen Exploitatie, of Groningen, and the Simplex Rijwielabriek, of Amsterdam. In addition, several firms show motor-bicycles and tricycles, among which may be mentioned the "Wilhelmina" Rijwielabriek, of Zeist; Messrs. Gebr. Willink, Amsterdam (Werner motor-bicycles); the Gruno Rijwielabriek, of Winschoten; Messrs. Hugo Smit & Son, of Arnhem (Beeston motor-tricycles and quadracycles); the Erste Nederl Rijwielabriek (Burgers), of Deventer, and Mr. J. Leonard Lang, of Amsterdam.

Although the display of motor-vehicles at the Dutch show is only a relatively small one, yet it is sufficient to prove that the automobile movement has already got a firm footing in the Netherlands. Several of the Dutch cycle-making concerns are known to be looking into the question of motor-vehicles and cycles, and it is fully anticipated that a year hence motor-cars will make a bigger showing at the exhibition than has been the case this year.

## A New Type of Motor Vehicle.

**A** MOTOR-VEHICLE for heavy traction entirely new to this country is being introduced by Mr. Charles T. Crowden, of the Motor Works, Leamington. It is designed more especially to act as a tractor, although possessing load space in itself, and its purpose is the hauling of heavy loads, such as furniture vans, etc. In appearance the tractor is somewhat like a tramcar, but its body is articulated in the centre, and the wheels and axles are mounted on springs and fitted with horn plates similar to an ordinary railway or tramway vehicle, but instead of running on the road they run inside large iron rings which virtually form road wheels. Inside each road-ring is bent and secured a rail of light section in which the main axle wheels are constructed to run. The wheels are driven by a suitable motor and gearing, with change-gear apparatus fitted in the body of the vehicle, and both pairs of axles are driven so that the tractor drives with all four wheels through the road-rings (without racks and pinions or cogs) without any of the difficulties hitherto experienced with traction engines.

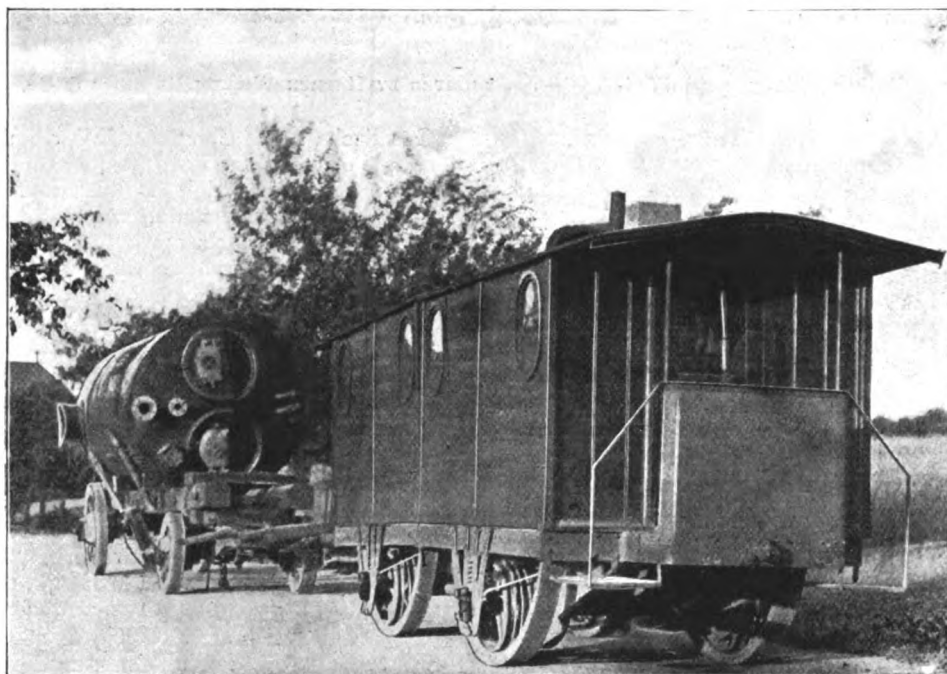
The road rail-rings are steadied in the following manner:—Across the centre of each are two guide rollers, about 10 in. diameter, of a similar section to the driving wheels. These rollers are carried on a suitable frame on the body of the car, and pivoted over the centre of each axle and road-ring. The rollers are extended by two strong spiral springs concealed in the roller frame. When the waggon is in motion, if one or any of the road rail-rings comes in contact with an obstacle, instead of being lifted suddenly and almost vertically over it, as would be the case with an ordinary wheel, the road-ring is slightly arrested whilst the car is still moving onward, the resistance being taken by the guide rollers and spiral springs until the power of the springs acting on the ring lifts it over as gently as though no obstacle existed, very much in the same way as a boat riding over a wave. All four road wheels are drivers, and also steerers, and the control of the vehicle can be effected from either of its ends, both platforms being provided with the necessary levers controlling the gear.

Mr. Crowden has conducted trials with one of these vehicles at Horstell, Westphalia. This was fitted with a 20 b.h.p. oil engine, having axle or driving wheels 2 ft. 2 in. diameter, and road rail-rings 7 ft. 6 in. diameter and 6½ in. wide. The guide rollers, extended by the springs to keep the road-rings in position, were about 10 in. diameter. There were two driving gears with friction clutches, first speed 2½ miles and the second 4½ miles per hour, motion being conveyed to each axle by means of a driving chain, and there being a lever on each platform to operate the clutches, to interchange

gears, and to act upon the four road-rings for steering purposes. The tractor was provided with water tanks, condensers, and oil tanks for running a day with one oil tank supply. The total weight in working order about six tons.

The following are the results of the experiments:—1st. Blocks of wood 4 in. high were placed at intervals on the macadam road, and the vehicle ran over them at the high speed with perfect ease, the engine running light with very little vibration, and the governor cutting out every six revolutions. 2nd. In the second experiment the tractor was attached to thirteen brick trucks 19 ft. 5 in. long, 6 ft. 4 in. wide, 4 ft. 8 in. high; hind wheels 3 ft. 9 in. diameter, front wheels 3 ft. 6 in. diameter. Each truck carried 1,000 bricks; weight of bricks 42.9 tons, and trucks 13 tons; total, 55.9 tons. The road was soft macadam. The tractor drew this load with the slow speed developing about one-third of its full power or 6.3 h.p., and blocks of wood were thrown in front of it and also in front of individual trucks, with the result that the truck wheels were

skidded, and ploughed up the surface of the road without, however, stopping the progress of the train, the tractor passing easily over the obstacles. The high speed was also applied during this test with satisfactory results. Next, the last two trucks had their hind wheels skidded by means of screw brakes, and the engine then developed full power. In no instance did the driving wheels of the tractor skid in the road rail-rings, nor did the latter skid on the wet macadam. In the third experiment the tractor was man-



œuvred over some soft sandy loamy soil, into which she sank 9 in., with the result that the chain and chain-driving wheels were in the ground; but she pulled herself out of this without the wheels slipping in the road-rings. The petroleum consumed with a full load is 1¼ gallons per hour, or 7 pints per brake h.p. per hour.

The hauling power of the tractor when fitted with road rail-rings having been ascertained by dynamometer tests, the road rail-rings were removed as a final test, and it was found that the provision of the road rail-rings increased the hauling capacity of the tractor by over 60 per cent. Mr. Crowden regards these tests as conclusive, and holds the opinion that the provision of the road rail-rings will minimise many difficulties previously encountered in driving motor-vehicles over uneven surfaces, and will at the same time reduce the customary cutting-up of soft road surfaces where heavy loads are hauled over them.

An Italian motorist has covered 59 kilometres in the hour.



## A DIARY OF MECHANICAL ROAD LOCOMOTION IN ENGLAND.



WE append herewith a concise diary of the progress of road locomotion in England. The dates, wherever possible, have been carefully verified, and may, we think, be depended upon. It will doubtless prove useful to our readers, the information being given in the most condensed form possible.

### DIARY.

- 1610—Drawing vehicles by mechanical means the subject of Ramsay and Wildgosse's patent.
- 1763—Cugnot exhibited the model of a carriage to be drawn without horses in Paris.
- 1769—First public trial of Cugnot's steam carriage.
- 1784—Murdock's model of a tractor for drawing wagons exhibited at Redruth.
- Symington invented a road motor-carriage.
- 1786—Sadler's experiments in motor road locomotion stopped by Watt.
- 1788—Fourness and Ashworth took out a patent for an engine for driving "travelling carriages of every denomination."
- 1789—Thomas Allen, of London, said to have invented a steam road carriage.
- 1790—Nathan Read took out a patent in America for a steam road carriage, in which a rack-and-ratchet motion was introduced.
- 1800—R. Trevithick commenced to make his first road locomotive in November.
- 1802—In March of this year Trevithick and Vivian obtained a patent for a high pressure steam engine for propelling carriages on common roads.
- 1804—Oliver Evans constructed a steam carriage at Philadelphia.
- 1808—John Dumbell patented a tractor for driving carriages and waggons on roads.
- 1813—W. Brunton, of Pentrich, took out a patent for his "mechanical traveller."
- 1814—Thomas Tindall, of Scarborough, patented a steam engine for driving carriages.
- 1816—A patent for a steam tractor for ordinary roads granted to Joseph Reynolds.
- 1821—A steam carriage was patented by Julius Griffiths, of Brompton.
- In August of this year David Gordon took out a patent for improvements in steam carriages.
- 1823—Samuel Brown patented a tractor for ordinary roads.
- A patent for a steam boiler, intended for use with steam carriages, was taken out by James Neville.
- In September a horseless carriage was invented by a Somersetshire carpenter.
- W. H. James took out a patent for a tubular boiler for motor vehicles.
- 1824—Patent granted to T. Burstall, of Edinburgh, and J. Hill, of London, for an engine for vehicles propelled on ordinary roads.
- Hancock invented his first steam engine for road locomotion.
- In May W. H. James took out a patent for his steam carriage.
- 1825—Gurney patented his first steam carriage in May, and his second in October.
- J. and S. Seaward patented a method of propelling vehicles on roads.
- T. W. Parker, of Illinois, patented his steam engine for road vehicles.
- Matthew Broemark, of Copenhagen, invented a steam carriage for roads.
- Burstall's steam carriage introduced.

- Hancock's steam engine for road carriages was patented.
- 1826—Burstall and Hill took out patents for improvements in steam carriages.
- F. Andrews invented the "Pilot" steering wheel for steam carriages.
- 1827—James Neville patented a road tractor.
- Mr. Whitelaw brought out a steam carriage.
- Dr. Harland, of Scarborough, took out a patent for a steam phaeton.
- A patent taken out by T. S. Holland for "producing a locomotive action for steam carriages on roads."
- 1828—J. Nasmyth constructed a steam carriage.
- Gurney's improved steam carriage patented.
- 1829—Col. J. Viney patented a boiler for steam road carriages.
- 1830—Rowe and Boase, of Albany Street, London, patented some improvements in steam carriages.
- Mr. Clive took out a patent for improvements in motor vehicles for ordinary roads.
- W. G. and R. Heaton, of Birmingham, took out patents for steam carriages.
- Steam coach constructed by Messrs. Shields and Son, at Cincinnati.
- Lea, of Hoxton, constructed a model of a new steam carriage.
- 1831—Sir Charles Dance ran Gurney's steam coach between Gloucester and Cheltenham, relinquishing the service in June.
- Summer and Ogle constructed a steam carriage that obtained a greater speed than any predecessor.
- Steam locomotive for use on roads patented by Messrs. Napier.
- 1832—Improvements in steam carriages effected by Dr. Church; in June a company was formed at Birmingham to place Dr. Church's steam carriages upon the road.
- In October Mr. Redmund patented a boiler for steam carriages.
- 1833—In March Gibbs and Applegarth obtained a patent for improvements in steam carriages.
- Mr. Roberts, of Manchester, patented a locomotive carriage for common roads.
- A steam carriage ran for a short time between Norwich and Yarmouth; the invention of Mr. Watts, of the former city.
- The London and Paddington Steam Carriage Co. formed to run Hancock's steam coaches.
- 1833—In July Maceroni and Squire patented their multi-tubular boiler for steam carriages.
- 1834—Mr. J. Scott Russell established a regular line of steam coaches between Paisley and Glasgow.
- Yates and Smith introduced a new steam carriage.
- Mr. Richard Witty, of Hanley, obtained a patent in connection with steam carriages.
- 1836—Sir J. Anderson introduced a boiler specially intended for steam carriages.
- A Bill ostensibly to repel the prohibitory tolls on steam carriages was introduced into the House of Commons. On reaching the Lords, it was referred to a Select Committee, which declared against the Bill.
- 1837—An Act was passed, the result of which was to discourage further experiments in the construction of steam carriages for roads.
- 1837—T. Hills, of Deptford, brought out a road tractor with compensating gear.
- 1856—Messrs. Garrett and Son, of Leiston, introduced a self-moving road locomotive with chain gear.
- 1858—Mr. Rickett, of Stoney Stratford, supplied pleasure carriages propelled by steam to the Earl of Caithness and the Marquis of Stafford.

(To be concluded.)

## CORRESPONDENCE.

## SHALL THE N.C.U. CONTROL MOTOR-CARS?

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In view of the interest at present being taken in the new rule, or rather addition to one of their old rules, that the N.C.U. recently passed, which is so broad that one cannot tell what class of motor-riding they wish to control, I have written to them as per enclosed copy letters and have received the enclosed unsatisfactory reply.

It seems to me a great pity, with the season fast approaching when a few motor competitions would possibly liven things up and help to draw the public gate at the cycle meetings, that the Union should commence to legislate for something which is essentially outside their province, that is, a pastime or sport which is distinct from an athletic sport, and in which the muscles of the competitor are not the chief factor, as in cycling, as it is obvious that the rules that go to govern all athletic sports are not applicable when one comes to deal with sailing yachts, driving coaches, playing billiards, driving motors, or in fact anything on this basis, which, so far, athletic bodies have not attempted to legislate for, feeling rightly they were outside their proper scope.

Yours truly,

London, March 15th, 1899.

S. F. EDGE.

MR. S. F. EDGE TO N.C.U.

February 9th, 1899.

The Secretary,  
National Cyclists Union,  
27M Chancery Lane, W.C.

DEAR SIR,—I notice that at your meeting held at Southampton last week you have passed a rule to control cycles fitted with a motor which reads as follows:—Clause F., Rule 103.—“Any cycle driven wholly or partially by any other power than that of the rider.”

The point that is not quite clear to my mind is, When does a motor-car become a cycle driven wholly or partially by any other power than that of the rider, as it seems to me that one might unwittingly infringe your rule unless that point is made clear.

For example, I have and use what is known as a motor-tricycle, which is a tricycle pure and simple to which a motor is attached, and which, if the motor was taken off, could be used as an ordinary tricycle, but if I did away with the pedals and chains as is sometimes the case with this type, I then have a three-wheel vehicle which it is absolutely impossible to use as a cycle, it being purely a mechanically-propelled vehicle.

Then I have another type also with three wheels, but which the manufacturer makes no provision for assistance by the rider either by feet or hand, but one or two ingenious users have and are able to adapt an arrangement whereby it can be assisted by the force of the user with either feet or hands.

It seems to me that unless this point is made clear many auto-carists may not work in harmony with you through their reading the rule one way and the N.C.U. reading it another.

Yours truly,

(Signed) S. F. EDGE.

N.C.U. TO MR. S. F. EDGE.

National Cyclists Union,  
27 Chancery Lane, London, W.C.,

February 13th, 1899.

S. F. Edge, Esq.,  
7M Tavistock Chambers,  
Hart Street, W.C.

DEAR SIR,—The rule as passed by the Council at their recent meeting reads as follows:—

“The following cycles are eligible for cycle races held under the Union rules. In every case it is understood that an artificial motor be used, but the whole motive force be that of the rider except in cases coming under Clause F.

“(F). For motor races.—Any cycle driven wholly or partially by any other power than that of the rider.”

I am directed by my Committee to say that any machine that comes within this definition will be regarded as under N.C.U. rules.

Yours truly,

(Signed) SAM. R. NOBLE,  
Secretary.

MR. S. F. EDGE TO N.C.U.

S. R. Noble, Esq.,

February 14th, 1899.

National Cyclists Union.

DEAR SIR,—I thank you for your letter of the 13th, but am afraid it does not help me very much, as the difficulty that I find is to know what is meant in your rule by a “cycle,” and that is what I wished your Committee to tell me, and thought I asked for quite plainly in my previous letter; in fact, I even went further than that, and gave them various examples of motor-vehicles which very easily could be made to appear on one or the other side of the line which divides motor-cycles proper from motor-vehicles that are not cycles as I understand them; and it was to get a definite ruling on this point that I wrote you so fully.

However, with a view not to trouble you any further, I thought I would look at Nuttall's '98 edition and see what they had to say on the matter; but under the word “Cycle” their definition is as follows, which does not meet the case at all:—

“Cycle—A series of years, events or phenomena which recur in the same order; a long period; an imaginary circle in the heavens; a body of legend connected with some mythical subject; *v.m.*, to revolve in a circle.”

From there I went to the word “Velocipede,” and that gives a definition as follows:—

“Velocipede—A sort of hand-carriage with two wheels, one before the other, connected by a beam on which the person sits astride and propels the vehicle by a treadle on the axis of the main wheel.”

This is a very much better definition, and seems to me to meet the case if we construe a “cycle” as meaning a vehicle that can be propelled either wholly or partly by means of the muscular force or weight of the rider.

Perhaps with this information before your Committee they may be able to give me a direct answer.

Apologising for troubling you,

Yours truly,

(Signed) S. F. EDGE.

## MR. WRIDGWAY AND THE SPEED OF HIS MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to a letter from Mr. Wridgway in your issue of March 10th, would he be so kind as to say what tricycle he uses on which he has often done thirty-three miles in an hour?

I have never heard of a tricycle doing this speed except in France on the track, and would like very much to know where one like Mr. Wridgway's can be purchased, how much, and if the makers will really guarantee this rate.

If it is the one I saw him riding at the Sheen House meet I should be very pleased to see Mr. Wridgway do this publicly, as I am quite certain the tricycle he then rode, but on which he did not finish first in the races in question, was not capable of covering anything like thirty-three miles in an hour, even if it was at all possible to do that rate for one mile only on a prepared track.

Yours truly,

London, S.W.

H. G. NORRIS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I must thank both Dr. Lehweß and “Cynicus” for giving me a chance to clear up a few points which probably were not very clear to them before. First of all, I will deal with the letter from Dr. Lehweß. I have only to call the attention of Dr. Lehweß to the fact that I was waiting for him at the top of a certain hill at the end of the “impromptu race,” and he will remember distinctly that I waited for him several times to put him on the right road, he being a total stranger in the district. I got clear away from the Mors car several times, and only stopped for those reasons which I am now giving. The second Mors car turned up about two minutes after Dr. Lehweß's car. Moreover, the Liverpool competition must still be fresh in the memory of Dr. Lehweß—more especially the return journey, when I was obliged to leave the Mors car (to which I had been “hanging on” for shelter from the terrific gale), as he was going absolutely too slow for my engine to keep going. Naturally he will infer that I had to pedal; that is so, but my tricycle has not a

change gear, and, moreover, I had not the same means of lightening the weight on my tricycle as that method adopted by Dr. Lehweß by permitting his assistant to run alongside the car to allow his engine to get up speed. From the place where I left Dr. Lehweß to St. George's Hall, Liverpool, a distance of about ten miles, I gained no less than a quarter of an hour upon him.

I shall be extremely pleased indeed, providing I can spare the time from business, to arrange a match with the Mors car; and, it is needless to say, nothing would give me greater pleasure than to be present at the interesting match, which I sincerely trust will take place, between Messrs. Pennington & Baines and the Automobile Association, and no doubt there are several more enthusiastic autocarists who would be only too willing to assist in any way.

Now, in regard to "Cynicus." He is quite right when he states that I finished last in the race at Sheen House, but "Cynicus" has evidently forgotten that I asked the starter if my fellow-competitors objected to delaying the start until I had temporarily repaired my induction coil, which was very badly damaged in coming over from Paris two days before the race. The repair which I did was very quickly done, and the vibration soon undid the small repair which I had made, and naturally I only obtained an occasional spark, thereby not getting full results.

"Cynicus" doubts that I can do even one mile at the rate of thirty miles per hour; first, I will refer him to the speed claims set forth by the Automobile Association for the Mors; secondly, to Dr. Lehweß's letter of last week, in which he wants us to believe that I admitted that neither of us could leave the other, thereby admitting that my tricycle was even as fast as the Mors—and everyone knows the speed they claim for these cars; thirdly, to the impromptu race itself, which was over a distance of sixteen and one-quarter miles, which was covered in forty-one minutes, over very rough roads, very hilly, full of turnings, besides having to slow up in going through a village. This works out at something like twenty-four miles per hour, and was accomplished on a winter's day; this time includes all the stoppages which I made to put Dr. Lehweß on the right road, whereas my thirty-three miles were done on absolutely straight roads in the north of France. Naturally, "Cynicus," with his experience, is fully cognisant of the fact that a tricycle on the track is much slower than on the road, owing to the fact that upon entering the banking the machine is tilted and the carburation affected, owing to the fact that the petrol is higher on one side of the carburettor than the other, thereby touching the float on one side and not allowing a free passage for the mixture which is already in the carburettor.

I fail to see why "Cynicus" signs under a *nom de plume*, and if he will forward me his name and address I shall have great pleasure in arranging a speed trial, and, no doubt, Messrs. Pennington & Baines will be only too pleased to arrange a seat for him upon their racing car to enable him to check the times for himself.

Yours faithfully,

C. G. WRIDGWAY.

Chorlton-cum-Hardy, Manchester.

March 18th, 1899.

## DEALERS IN MOTOR-CAR SPIRIT.



THE following is a brief list of the dealers in a few principal towns who stock Pratt's motor-car spirit, and are able to supply same on demand. When running on an organized route, it is better to forward a post-card to these firms stating the quantity required and the day upon which a call will be made. For the convenience of country readers journeying to London five London dealers are given:—

| LONDON.                             |   |
|-------------------------------------|---|
| Civil Service Co-operative Society, | Haymarket, S.W.                             |
| Civil Service Supply Association,   | Queen Victoria Street, E.C.                 |
| Automobile Association, Ltd.,       | 1 Prince's Road, Holland Park.              |
| C. W. Austin,                       | 35 Brewer Street, Soho.                     |
| Motor Manufacturing Company, Ltd.,  | 47 Holborn Viaduct, E.C.                    |
| Beverley,                           | J. W. Tanfield.                             |
| Birchington-on-Sea,                 | E. Bushbridge, Stores, The Green.           |
| Bournemouth,                        | Birmingham Cycle Co., 5 Holdenhurst Road.   |
| Bradford,                           | Mrs. Calvert.                               |
| Bridlington,                        | C. Smith.                                   |
| Gainsborough,                       | Heinle & Co., 50 and 168 Trinity Street.    |
| Great Yarmouth,                     | J. Leach, Market Place.                     |
| Hull,                               | King & Co., Ltd.                            |
| Leeds,                              | G. Exley & Sons.                            |
| Barnard Castle,                     | Joshua Burn & Son, Horse Market.            |
| Middlesbro',                        | Constantine Pickering & Co.                 |
| Newcastle-on-Tyne,                  | Rowland Barnett & Co., 41 Dean Street.      |
| Thirsk,                             | Clark & Co., Market Place.                  |
| "                                   | Ayre & Son.                                 |
| Edinburgh,                          | Finlayson & Stewart, Regent Arch.           |
| Leith,                              | Graham Yool & Co.                           |
| "                                   | A. M. Reid, Commercial Street.              |
| Edinburgh,                          | Auto-Car Co., London Road.                  |
| Coventry,                           | Daimler Motor Co., Motor Mills.             |
| "                                   | Motor Manufacturing Co., Ltd., Motor Mills. |
| Tonbridge,                          | H. Wightwick & Son.                         |
| Winchester,                         | H. W. Frampton Exors., Jewry Street.        |
| Slough,                             | F. Parker, cycle agent.                     |
| Reading,                            | Speedwell Motor-Car Co., Oxford Street.     |
| "                                   | J. H. Fuller, 22 Minster Street.            |
| Norwich,                            | Geo. Base, Pitt Street.                     |
| St. Albans,                         | C. A. Sharpe, Bernard Street.               |
| Newport Pagnell,                    | F. W. Taylor, chemist.                      |
| Olney,                              | A. Timperley, grocer.                       |
| Faringdon, Berks,                   | G. E. Liddiard.                             |
| Ipswich,                            | Grimwade, Ridley & Co.                      |
| Salisbury,                          | Hardy & Son, chemists.                      |

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

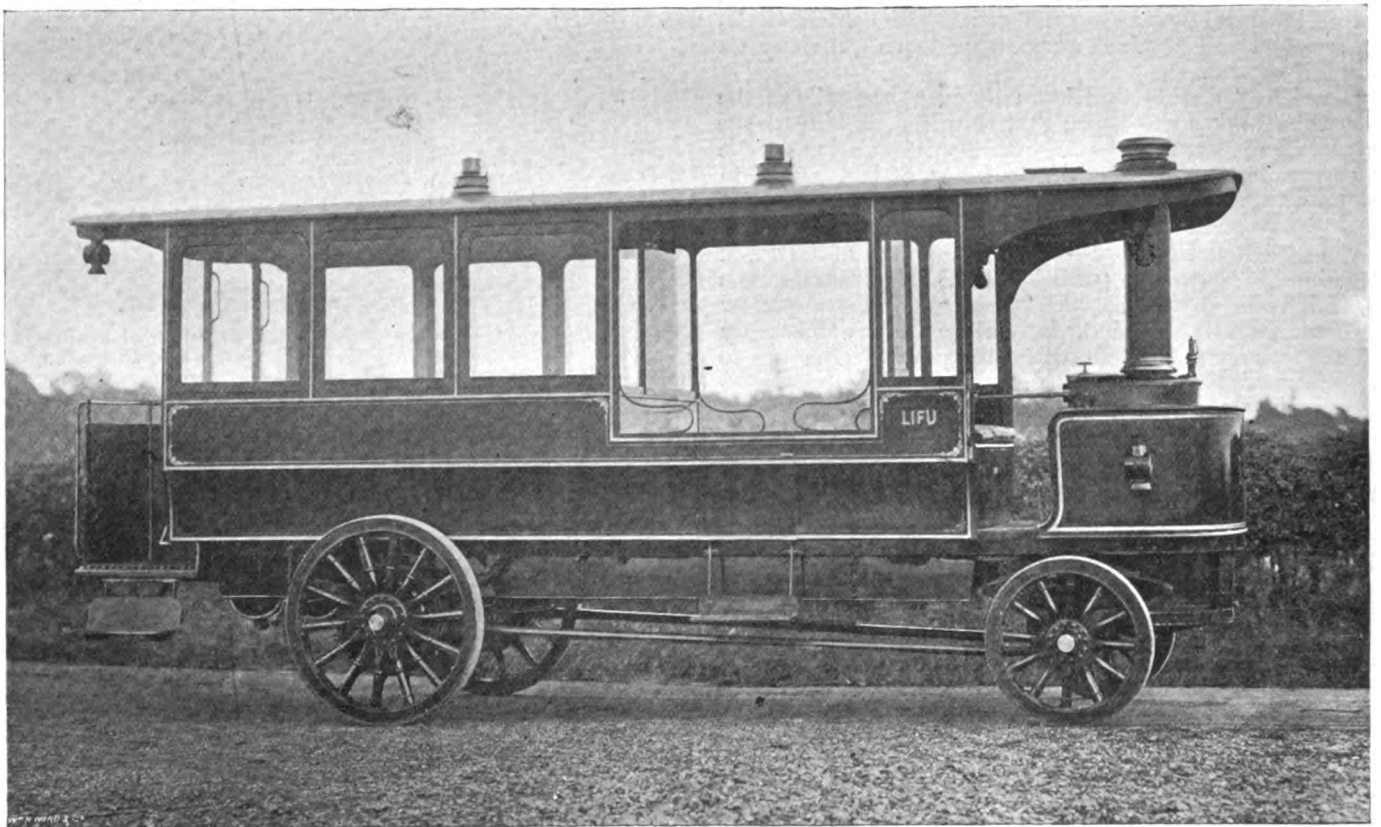
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Telephone: No. 8 EAST COWES.

# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, MARCH 31st, 1899.

[No. 4.

Published by CORDINGLEY & CO., 39 & 40 Shoe Lane, London, E.C.

## COMMENTS.



### Public Motor-Car Services.

AGAIN we have to record advances in the direction of providing motor-vehicles for conveying passengers between different stations in the Provinces. Southport is one of the latest converts to motor road locomotion, and we understand that a preliminary service is to commence there at Easter with a view to extended service ultimately. Manchester is another convert, where a service will run between Manchester and Cheetham, and another between Manchester and Cheadle. Liverpool is also waking up in this direction, and although no services are proposed at present in Liverpool proper, yet others are being formulated for different districts on the Cheshire side of the Mersey. We hear of projects in the West too, where several towns are coquetting with motor-vehicles for public service. The Sunderland project is well under way. The Dover syndicate has received an excess of applications for shares, as briefly recorded in our last issue. The suggested Canterbury and Herne Bay service is progressing favourably. The Brighton and district service is enlisting the sympathies of the "local magnates," and the Hastings project is making satisfactory headway. The Bedford and Kempston service has two cars in course of construction, and the Cambridge syndicate has now been firmly formed, and has ordered three vehicles; whilst the Isle of Man syndicate is also well on the way towards starting its service.

### The London Electric Cabs.

VERY considerable misunderstanding appears to exist in the public mind as to the reasons directing the London Electric Cab Company in calling in temporarily their electric cabs from the London streets. In addition several serious mis-statements have been made in the daily newspapers in regard to the action of the Company in this matter, and also in regard to its financial position and prospects. As we stated in our first issue, the directors considered it advisable to call in the whole of the cabs then plying for hire, in order that they might be overhauled, and fitted, amongst other things with stronger springs, which are calculated to afford increased comfort to the passengers. Of course, it might be argued that a few cabs might have been withdrawn at a time, but the directors in their wisdom thought that other circumstances warranted the whole being withdrawn at one period, so that all might be overhauled and replaced in the streets in a perfect and uniform state with the 50 additional new cabs also in progress of being completed. They were further urged to take this course from the fact that some structural alterations were desirable at the dépôt, and these it appears could not have been carried out with convenience whilst the entries to the premises were constantly in use by the incoming and outgoing cabs. In regard to the financial position of the Company, we are assured most positively by the chairman that the whole of the debentures which the directors thought it necessary to issue have been fully taken up; and it may be mentioned that amongst the largest

subscribers to this issue are the directors themselves, who have taken up considerably more than one-half the total issue. The needed necessary capital being thus secured, and the vehicles now being brought up to date as dictated by experience, it may be anticipated that success will attend the operations of the Company. As we have before stated, the cabs are now run at a profit, although the profit is not a very large one; but as the potential power of the Company's new charging station is approached more nearly, so, as a matter of course, the business will be more profitable and remunerative. It follows that if the station affords without strain on a full load sufficient current to run 80 or 100 cabs per day, it will be more profitable than restricting its output to the needs of 30 cabs, as what may be termed "establishment expenses" are practically the same for the greater as for the lesser number, and the profits are increased by the revenue from 50 or 70 additional vehicles.

### Boston, U.S.A., and Motor-Vehicles.

WE briefly recorded in a previous issue the fact that the municipal authorities of Boston, U.S.A. had restricted the entry of motor-vehicles into the Public Parks excepting during the "unholy" hours between 9 p.m. and 10.30 a.m., the entry during the day being refused entirely. Colonel Pope, of the Pope Manufacturing Company, the well-known builders of the "Columbia" electric-carriage, is reported to have said in reference to this decree, that he cannot see by "what right the park commissioners can exclude motor-vehicles." He is reported to have continued as follows: "I absolutely and unqualifiedly deny the legal or moral right of anyone to restrict me as to my vehicle, providing that I exercise due care and do no injury; but I trust that in Boston, of all places, I shall not be obliged to make a fight which I surely shall win, but which will take my time and money." "I will see the park commissioners," concluded Colonel Pope, "and try first to find out what they mean by this order. If the motor-carriages must stay out, so must all others, and baby carriages and bicycles. How would the people like that? Yet there is no difference, in law or in fact, between them. However, I do not anticipate any such trouble; I won't believe, until they tell me so, that the park commissioners of my own city seriously intend to show themselves more opposed to progress than in any other community in the United States or Europe." It appears that the Boston authorities, in issuing the decree, have also issued an order to the following effect: "No person shall run or operate a motor-vehicle of any kind on the public parks or boulevards until he shall have been examined and certified as competent by the inspector of the Park Department, and a permit issued on such certificate, nor until such vehicle shall have been inspected and a certificate of approval issued by the inspector of the Park Department, and a licence for the operation or use of such vehicle has been granted." Neither Colonel Pope nor any other reasonable being objects to such an order, provided that the "inspector of the Park Department" is qualified to carry out his duties in determining whether or not a person is capable of controlling a vehicle or the vehicle is capable of being controlled. In reference to



the decrees, it is only right to mention that the chairman of Park Commissioners has announced that the order is not a permanent one. He holds that pedestrians and users of hippomobiles ought first to have a chance of becoming acquainted with motor-vehicles before meeting them in the Parks, but on being met with the rejoinder that their appearance in the Parks would contribute to this end, made reply that "they had the whole world and the public streets of Boston in which to make the public acquainted with them." Those who know the Boston streets will appreciate the irony of this concession.

**Wanted:  
A "Voiturette."**

AGAIN and again the public have called loudly for a "voiturette" or light carriage whose motor must not necessarily be started by pedals, and whose power is sufficient to negotiate ordinary inclines without the fortuitous aid of the rider's muscles. The demand is equally as great in France as in England, but so far nothing really successful has been placed on the market except the Bollée voiturette, and this has been discredited in both France and England because some "know-all" thought it wise to place an exhaust valve on top instead of underneath the motor! Indeed, to such an extent has this discredit proceeded that we hear the only makers of this type of vehicle in England have decided to cease its manufacture. A correspondent whose letter appears in another column of this issue simply voices the demand of at least thousands of others in France and in England. There are, of course, two sides to this question of demand: one is the matter of price, and the other the matter of possibility of manufacture at the price. Now a motor-tricycle is fairly listed at 70 guineas, and in a few cases at a trifle less. Would it not be possible to build that tricycle with an attachment permitting the motor to be thrown out of gear with the road-wheels at the same price or thereabouts? There is no doubt that this can be done. But would it meet public demands? In some few instances it might; and to meet other desires we can see no reason why a new frame should not be adopted which would permit the use of a seat, rather than the uncomfortable saddle, with its lack of support to the rider. But on the whole this adapted vehicle is hardly what is wanted by the majority of the public. As a resident in Paris said to us the other day, every manufacturer in France, and every selling agent also, is inundated with enquiries for a motor-voiturette, seating two side by side, capable of mounting fair hills, and travelling comfortably on ordinary roads, with the average speed of ten miles per hour, and costing about £100 to £140. English manufacturers and agents know also that similar demands have been made upon them. Why has that demand not been satisfied in either country? Simply for the reason that no constructor has been bold enough to maintain that a motor of 3 h.p. (which would be the minimum power required for the purpose) and of the requisitely light type can be successfully driven without the aid of water to cool the cylinder walls and explosion chambers. This arises from two facts well recognised by engineers: First, to obtain the necessary lightness with sufficient power it is necessary that the impulses of the engine shall be much more frequent than would be necessary with a larger and heavier engine of the same power. As a consequence the explosions are increased to such a degree that the excessive heat thus generated is impossible to be removed from the cylinder walls and the explosion chamber by means of the circulation of air, even when the most scientifically designed *ailettes*, or cooling fins, at present known, are adopted. Secondly, there arises another difficulty. Those who have most closely examined the problems connected with very high-speed impulse engines have recognised the fact that the expansive or rather explosive forces of the fired gases have a limit, and if the speed of the piston is such that it exceeds the "speed of explosion" so to say, the force of the piston actually outpaces the explosive force and by the impulsive energy stored in the fly-wheel thus "out-

runs the constable," and receives only a portion of the impulsive energy of the exploded gases. As a consequence these two facts have rendered it imperative that the high speed, light weight motor should be discarded in favour of a slower piston speed combined with a longer piston stroke and a greater piston diameter. Directly this course is adopted there follows as a concomitant the necessity of providing cooling water with the also necessary tanks, circulating pipes and pumps. Thus weight is increased, expense grows, and more complications of mechanical parts ensue. We do not, however, desire to state that it will not ultimately be possible to cool motors of 3 or 4 h.p. by the air of cooling fins alone, but at the present moment no thoroughly satisfactory solution has been arrived at in a practical sense. De Dion & Bouton, the pioneers—indeed, the leaders—in the inventing of a light high-speed motor cooled by air, have recognised that at present the problem is beyond them, and, as recorded in our last issue, have adopted a small circulation of water, with the addition of a condenser or radiator for cooling the circulating water. If this firm have recognised the present impracticability of air-cooling for 3 and 4-h.p. engines it is time also that we recognised the fact, and, whilst not neglecting the search for a means of overcoming this present impossibility, should in the meantime produce such a vehicle as is demanded, fitted with water-cooling devices.

**Furious Driving:  
Police versus Public  
Evidence.**

MR. ALFRED RAWLINSON, of Winwick Warren, near Rugby, who was described by his solicitor as "one of the best motor-car drivers in Europe," figured as defendant at Wolverhampton Borough Police Court on Saturday to a summons for furiously driving a motor-car. A constable told the magistrates that the car darted down one street like a flash of lightning, and nearly ran over two ladies and a child, and that he tried to run after it, but could get nowhere near it, a statement that caused considerable laughter. Three other witnesses gave somewhat similar evidence, one adding that it seemed to him as if the driver had lost all control of the car. For the defence it was contended that the car was travelling at not more than five miles an hour, the defendant saying he could have stopped the car in the space of its own length. A stud groom, employed by the defendant, said he was on horseback "jogging" slowly down the street when the car passed him at "a snail's pace." Other witnesses corroborated this statement, and the magistrates dismissed the case. Fortunately for Mr. Rawlinson, the Wolverhampton magistrates were not quite so biased in favour of police evidence as is frequently the case in other courts. In another part of this issue we record the hearing of a summons in which the contrary was the case, and in spite of the evidence of unbiassed witnesses a conviction resulted. We congratulate Mr. Rawlinson on his escape and the magistrates on their fairness.

**Motor-Cars  
for Private  
Hirings.**

IN another portion of the present issue we allude to the successful work and the extensions at present going on and projected by the Edinburgh Auto-car Company in regard to providing the public with motor-vehicle services on set routes. This Company, however, do not restrict their work to this class of service only, as, besides being also selling agents for the Motor Manufacturing Co., Ltd., they further keep vehicles for private hiring purposes. In regard to the profitable character of this section of the business, Mr. Love, the manager of the Company, has said in a recent interview that he has never had difficulty in finding customers to hire these vehicles. He informs us that he has let every car in his possession for the Easter holidays, and he had applications for over two dozen additional cars for this period. He rents them to hirers by the day, week or month.

His experiences proved the correctness of our contentions in previous issues of this Journal—viz., that jobmasters and others would find it extremely remunerative to have one or two of these vehicles for letting out on hire. The only necessity is a small repairing shop, such as is generally found in most jobmasters' establishments, and without this we would not recommend anyone to embark in such a venture.

#### The London Steam Omnibus Company.

WE hear that the London Steam Omnibus Company are proceeding quietly with their work, and have also managed to satisfy some of the malcontents who desired to have their allotments cancelled and their money

returned. Motors are being constructed at the Canstatt works of the Daimler Motoren Gesellschaft, and will shortly be ready for delivery in this country for attachment to vehicle bodies. So far as we can learn, however, no progress has been made in providing steam omnibuses, the Company preferring, according to our information, to work at present with petroleum-spirit motors. We trust we may be able to chronicle additional advances towards fulfilling the destinies of the Company in putting motor-omnibuses on the roads shortly.

#### Police Evidence on Furious Driving.

THE report in other columns of this issue in regard to the proceedings against one motor-tricyclist, two riders of ordinary safety bicycles, and one rider of an ordinary tricycle, afford ample opportunity for demonstrating that in some circles the magistrates accept the nonsensical evidence of a police constable against the assertions of independent witnesses and mechanical facts. In this case it was alleged that the four defendants approached the constable at a "furious" pace—at least eighteen miles an hour, according to his assertion. He called on them to stop, and they immediately complied, and on his complaining of the pace being nearly twenty miles an hour, they denied the impeachment. During the argument, or statement of knowledge and skill against police guesswork, a stranger and independent witness arrived on the scene, and having seen the reputed furious riding interposed the remark that in his opinion the four accused persons were not only going at a pace well within a fourteen-mile limit, but that the construction and gearing of the motor-tricycle would quite prevent the rider from proceeding at any such pace as that alleged by the constable. This statement was repeated by Dr. O'Reilly on oath, but notwithstanding the fact that it was a physical impossibility to ride the ordinary tricycle at the speed alleged, the motorcyclist with his three companions was convicted and fined ten shillings.

#### Legislation for Motor-Cars in the U.S.A.

As was to be anticipated the Legislative authorities of the United States are to be asked to pass a Bill having for its objects the regulation of the speed of travel of motor-cars and the licensing of all drivers of horseless vehicles. France was previously the happy hunting-ground of those motor-car enthusiasts who desired to risk their lives by travelling on public roads at the greatest rate of speed possible by the employment of motors ridiculously out of proportion; but now, and to the regret of many of these mad enthusiasts, the Legislature has stepped in and formulated rules, as intimated in a previous issue of this Journal. As the citizens of the United States became bitten with automobilism, so some of them have been endeavouring to surpass the paces of the fast "trotters" previously employed by the "four-hundred" in their hippomobiles. As a result the Legislature is invited to step in to control the movements of the cars, which opponents of automobilism naturally, of course, describe erratic. The *New York Times*, in commenting on the intro-

duction of the Bill in the House of Assembly, states that it has been drawn up by persons in New York City who regard the reckless operation of the new motor-vehicles as offering a serious menace to life and limb, and it will be presented at their request. This is a pity, for it would have been far better for the automobilists of New York to have recognised the fact that some regulations would have been necessary and to have formulated some reasonable terms which would not have proved unduly restrictive to the pleasures of users of horseless vehicles, whilst at the same time being sufficiently stringent to protect the somewhat acute susceptibilities of their opponents.

#### Another Improperly Broken Horse.

THE following letter, culled from the columns of the *Western Morning News*, under the title of "Motor-Car," is interesting as showing that, whilst a motor-car driver is compelled by stringent laws to have his vehicle under proper control, the driver of a hippomobile expects, even when his horse is improperly broken (as is proved by his own showing), that motor-vehicles should be inconvenienced by his neglect. The letter is as follows:—

Sir,—I should be greatly obliged if someone would inform me if there is any law which compels the drivers of small motor-cars to stop when passing a horse. I met one of these cars with, I believe, two mining students of Camborne a few days ago. My horse was afraid of it and I had trouble with her, but the driver did not attempt to stop. My horse will pass the traction engine when it stops very well. The driver of the traction always stops at once if I put up my whip. If there is no law in force to make these motor-cars stop when requested, I think the County Council should at once pass a bye-law to that effect. These cars are most dangerous to horses, and I fear there will be a serious accident if some restraint is not put upon them.

Of course, every reasonable driver of a motor-car will at once stop his vehicle if desired to do so, and in accordance with the law governing motor-vehicles. We are afraid, however, that a motor-vehicle at rest, but with the motor running, is oftentimes more likely to contribute to a horse's fright than would be the case if it moved swiftly past out of the horse's vision.

#### Electric "Charging" Posts on the Continent.

ONE of our Continental correspondents in a recent issue contributed an item in regard to the forthcoming establishment of "charging" posts or pillars on the main roads of Belgium and France whereat in return for certain coins drivers of electrically-propelled vehicles, or those who use electric ignition devices, could re-charge their exhausted batteries. It was asserted that these "posts" would be established at fairly close intervals on the main roads, and, in addition to providing accommodation for charging batteries, would also comprise shops for effecting mechanical repairs, together with a restaurant, café, and refreshment bar. We recorded the opinion at the time that the scheme was much too grandiose for fulfilment, and our suspicions have been verified by the Paris correspondent of a financial daily contemporary. Speaking of another suspicious scheme, and the reputed connection therewith of Mr. Tankerville Chamberlain, "a gentleman not unknown in City circles," the correspondent continues: "This gentleman is, I believe, also connected with a concern known as La Poste Electrique . . . which is anxious to build relays on the highways of Europe for electric motor-cars which do not exist, and are not likely to exist for some years to come . . . La Poste Electrique is a Belgian Company, but has recently taken sumptuous offices in Paris, and though the Company is only six months old it is already issuing to the public 10,000,000 francs' worth of debentures. As an instance of sheer audacity I doubt if this can be equalled, for the Company (which is a creation of the celebrated M. de Verragaude, or Brémont, of "Credit" notoriety) has neither land nor property of any kind upon which debentures can be legally issued. A good many men will probably recall the generous footmen, the multitude of hangers-on, and the princely offices on the Place Vendôme

over which De Verragaude presided in state a few years back. La Poste Electrique, his latest creation, is well worthy of a man of keen intelligence and unbounded audacity in the art of extracting money from the public." We cordially agree with the Paris Correspondent of the *Financial Times*.

#### A Reported Motor-Cab Collision.

It was reported in the daily newspapers of the 24th inst. that shortly before ten o'clock on the previous day a serious collision between a motor-cab and a hansom occurred in Mile End Road, E., and was attended with serious injuries to three persons. According to these reports the guiding wheel of the motor was out of order, with the result that the vehicle dashed into a hansom cab and overturned it. The driver of the hansom, named Johnson, and the occupants of the vehicle, James Chapman and his wife, who reside in Aldgate, were injured, and had to be removed to the hospital. The report also records the fact that the driver of the motor was thrown from his seat, but escaped with slight injuries. In reference to this report we are desired by the chairman and managing director of the London Electrical Cab Company to state that the "motor-cab" alluded to was not one of the Company's vehicles, as none were out on hire that day. The only other licensed cab we know is that belonging to the British Motor Syndicate, and generally used by Mr. H. J. Lawson personally. We are also assured that this was not the vehicle in fault, so must conclude that "motor-cab" in the original report means "motor-car," and that it belonged to a private owner, whom we regret to say we have been unable to trace.

#### The Gender of Automobiles.

It has been solemnly decided in France that all automobiles are of the masculine gender, and henceforth it will be both unfashionable and ungrammatical to refer to the horseless vehicle in any other way. There appears to have been a misogynistic minority in favour of bestowing the feminine appellation upon automobiles. And these misogynists, as they thought, succeeded in establishing an unanswerable case in favour of the feminine appellation, but one of them had suffered in a motor-car accident, and the grammarians would have none of his evidence. They determined to give judgment in strict conformity with the requirements of French pedagogy, and they viewed the problem so seriously that they went out of their way to rebuke the jesting note-writers in the French press.

#### Public Motor-Vehicles in Chicago.

THE Chicagoans are the latest residents in the United States cities to desire a service of motor-vehicles for the conveyance of the public between fixed stages in the vicinity of their city. In this connection it is interesting to note the procedure which a group of capitalists have followed in order to secure a monopoly in this class of traffic. It appears that they grouped themselves into a syndicate with a nominal capital of a million sterling and then petitioned the South Park Commissioners of Chicago to grant them a permit to run a line of motor-vehicles through the Michigan Avenue and South Park thoroughfares, and agreed that, if an exclusive privilege were granted them for carrying passengers by this service, they would hand over to the Commissioners, for addition to public revenue, a sum equal to 10 per cent. of the net earnings of the vehicles. From press reports it would appear that the syndicate have the unqualified support of property owners and residents along the route, who have presented a petition in favour of the project. The Commissioners, however, are doubtful if their powers permit them to grant the required licence. Consequently, for the moment at least, the scheme is "hung up," although the projectors hope to convince the Commissioners that they possess the

necessary powers to grant the required exclusive licence. In connection with this scheme, it is interesting to note the comments of an United States technical journal, the *Electrical Review*. Our contemporary states that "if the project can be carried through, the *cabs* to be used (the italics are ours) will be of magnificent design and have a seating capacity of thirty persons"! In this country we should hardly term a vehicle carrying thirty passengers a "cab." No mention is made of the motive power to be employed in driving these "cabs," and we are rather curious as to how a vehicle carrying thirty passengers is to be propelled in view of the further fact that we are assured by our technical contemporary that "during the summer, observatory coaches would be used with seats on top"!

#### A Motor Maxim Gun for Cyclists' Corps.

It is announced that the 26th Middlesex (Cyclists' Corps) are about to experiment with a new gun-carriage at Aldershot, as they are taking down with them to-day (Thursday) a motor-tricycle with a service pattern Maxim gun attached. Quick movement being essential, the gun can be instantly unlimbered, and pulled or carried into position, the weight of gun and carriage being only some 140 lb. To ease the work of transport the wheels have pneumatic tires, and, of course, are mounted on ball bearings. A team of eight men and cycles will accompany the gun, each man carrying a box on his back wheel containing 250 rounds of ammunition, besides his regulation bandolier. In case of breakdown on the part of the motor, by an ingenious arrangement four cycles can be coupled together and attached to the pole of the gun carriage. We know that Mr. Fredk. R. Simms has been hard at work designing some such vehicle, but on appeal to him we find that the Cyclists' Corps' "motor-gun" was not of his invention. Further enquiries have elicited the fact that the "new gun-carriage" consists of an ordinary motor-tricycle, with De Dion motor, having connected to it at the back a special form of trailer, on which the Maxim gun is mounted. We also learn that the combination is due to Mr. Charter, of the Cyclometer Co., of Kirby Street, Hatton Garden, E.C., and Sergeant Rule, and that it will be used by the latter's regiment in the forthcoming Easter manœuvres.

#### The Utility of Motor-Vehicles.

EVERY ONE who takes even a remote interest in motor-vehicles is willing to allow that their share of utility in various circumstances is great; we doubt, however, whether the veriest enthusiast has, in his wildest dreams, ever imagined that this sphere is so great as a recent circumstance has proved it to be. Recently, according to press reports, a woman met with an accident at Murray Hill, N.Y., U.S.A., with the result that one arm was severely fractured. A surgeon on being called in found the fracture so complicated that to discover the exact location and extent of the injury it would be necessary to use the Röntgen rays. Instruments were at once brought, and all was ready for the operation, when it was suddenly found that no electric current was available. Fortunately, so runs the tale, an electrical cab was within hail and this was drawn up to the door, the batteries connected up to the coil by means of conductors, and the examination took place. Truly a wonderful example of American utilisation of horseless vehicles!

#### Popularising the Motor-Vehicle in America.

ONE of the most reliable of our American electrical contemporaries, the *Electrical Engineer* (which, by the way, has recently been incorporated with the *Electrical World*), had the following in a recent issue: "Somewhere in one of his essays or books, Mr. Herbert Spencer remarks that the best way to introduce wooden shoes would be to have the fashionable women of society wear them first. Then the

habit would quickly permeate downward, and sabots would be all the rage. There is the shrewdness of the cynic not less than the philosophy of the sociologist in this observation. It is a fortunate thing for electric vehicles that at the present moment the ownership of an automobile is one of the signs of being 'in the swim,' and the process of popularization and vulgarization has begun at the right end, viewed from the Spencerian standpoint. That 'tout Paris' had gone an-automobilizing we knew, but it appears to be the fashion among the royalties of Europe to indulge in exercise in the horseless carriage. Example and precedent are everything in setting a new fashion, and it is pertinent to inquire how far electrical people have gone to foster the automobile art by actual patronage. We know of but one president of a local lighting company who has an automobile, yet it would seem obvious that many such dignitaries might by setting the fashion in their own cities stimulate greatly the consumption of 'juice.' We know of but one electrical supply or manufacturing company that handles its materials with an automobile delivery waggon. There may be others, but they are doubtless extremely few and far between. Yet here surely is the chance by example and positive demonstration to help along the speedy coming of the new industry from which electricity is to derive an enormous development. Electrical journals may push these things on public attention; but the stimulus needed is the example of the whole electrical fraternity itself going in for automobiles. In the meantime, the manufacturers of these vehicles do not bemoan any lack of orders." The sermon addressed to those interested in the American electrical industries might well be tendered to British firms similarly interested. Indeed, we think that British firms, as a whole, deserve the strictures even more strongly than do the American houses. We may state that to our contemporary's credit, it has never lost an opportunity of advancing the interests of self-propelled locomotion. We would that we could say the same of some of our own leading technical journals.

#### The German Post Office and Motor-Vans.

THE report of the German Postmaster-General in regard to the use of motor-vehicles for delivery of mails is not a comforting one to those who believe in mechanical road locomotion for such a purpose. The "Master of the Mails" reports that the trials of motor-vehicles for the purpose have not proved satisfactory, but that he is ready to adopt these vehicles if reliable vans can be obtained and the expense incurred is not greater than that of horse-drawn vehicles. It is strange if the German Postmaster-General should not have secured trials with reliable vehicles, in view of the fact that the works of the Daimler Motoren Gesellschaft are located in Canstatt, Westphalia, and that this factory has the credit of turning out the most reliable, if not the prettiest vehicles, in Europe. We do not remember at the time of writing who were the makers selected, but it is obvious from the official report that the performances of the vehicles were not very creditable.

#### Torquay and its Motor-Car Service.

WE alluded in a previous issue to an agitation which had been led by certain ultra-conservative residents of Torquay against the motor-car service inaugurated last autumn by the London Motor-Van and Wagon Company, Limited, whose cars run between the Strand and the Railway Station. The *Torquay Times* in a recent issue congratulated itself that the "complaints" of the residents in question have resulted in the temporary withdrawal of the cars from service. But as a matter of fact these complaints had but little to do with the withdrawal of the cars. They were in fact taken off the road for the reason that the service was not sufficiently large to warrant the establishment of local repair shops and

the employment of a resident manager who could exercise efficient control over the drivers. That this control was necessary is proved by the fact that the receipts for two cars when a manager was not present did not amount to those of one car when a manager was present. Later in the season the service will be renewed by the London Motor-Van and Wagon Company, Limited, and an additional service started to Paignton, but care will be taken to ensure that efficient control of the men will give the Torquay residents freedom from any but "fancy" causes of complaint.

#### The "Contour" Road Book.

A RELIABLE guide to the gradients of roads and the slopes of hills is a positive necessity to the motor-carist, and in the compilation of his "Contour" Road Book Mr. Harry R. G. Inglis has placed automobilists under an obligation. The volumes dealing with Scotland and the North of England have been at the public service for some time; that concerning the south-eastern division has recently been published, and by next summer the fourth volume will have been completed. Having availed ourselves of the information in connection with some of the 400 routes indicated in the south-eastern division, we would congratulate Mr. Inglis on having upheld his reputation as a painstaking and accurate compiler. Personal knowledge has been requisitioned in preference to ancient records. With regard to route 525—from London to Peterborough—a printer's error sends us to Coventry instead of Baldock. Without desiring to appear hypercritical or in any way qualifying our good opinion of the book as a whole, some reference should be made to the signs on the diagrams. They are frequently so small as to need the most scrutinising observation. Mr. Inglis has modestly noted, in his introduction, that the explanations of these signs appear on page 243—as if that was the only place in which such explanations can be found. We have been glad, however, to find them on several other pages, and wish they had been repeated on every page where the diagrams are given. The letterpress concerning each route is concise and lucid; there are several good maps, and the volume has been issued by Messrs. Gall and Inglis in a neat size, with rounded corners, which contribute to its convenience as a pocket companion.

#### Further Extension of Motor-Car Services.

THE motor-wagonette public service inaugurated by Mr. John Love, of the Edinburgh Auto-Car Company, on the Queen's birthday last year, has proved so successful that it has been decided to extend it very considerably. To this end two more cars have been purchased from the Motor Manufacturing Company, Ltd., one of char-a-banc type and one a wagonette, the former seating nine and the latter eight. Additional extensions are also promised in the future, as Mr. Love anticipates the summer demand will be such that several additional cars will have to be put upon the road. At present the cars run from Prince's Street to Newington and Haymarket, and in the summer months and at holiday times additional vehicles run to Portobello and the Forth Bridge. Mr. Love finds that his experiment has been successful, and holds the opinion that it would have been much more so had he had more cars at his command. At the present time he contends that he could find passengers enough to keep a dozen cars running between Prince's Street and the Haymarket alone, whereas no more than two and sometimes three are so employed. As Mr. Love can obtain delivery of cars, so he intends to run them on Saturday to Peebles, North Berwick, Gullane, Banton, and Duddington, especially for the convenience of golfers and tourists. During the whole time that the cars have been running not one single accident has occurred, and this says much for Mr. Love's management and his insisting of periodical overhauling at frequent intervals in his works at Abbey Hill.

**Chain-Driving.**

A PAPER read at the second meeting of the Cycle Engineers' Institute at Birmingham on Saturday last by Mr. C. R. Garrard, M.I.M.E., dealt with this subject. The author first spoke of Mr. Hans Renold's system for compensating for the inevitable wear and elongation of chains, this, briefly stated, being effected by making the chain wheel of greater pitch than the chain, the system being equally applicable to both the block and the roller variety. It was his opinion that Mr. Renold's system would be carried still further; it was quite possible to calculate and produce different chains and different wheels, all of which would interchange and run well together—this, of course, within certain limits. Dealing with some objections which had been raised against the half-inch pitch, the author gave some figures, based on .160 as the size of the rivet, which showed that a sufficient thickness might be obtained for the other parts. The earlier half-inch roller chains had stretched abnormally, chiefly because the sleeves became loose in the side plates, this providing the most serious part of the whole problem. It remained for Prof. Sharp's testing machine to prove whether anything could be detected in the matter of efficiency between the three current pitches. The subject of resilience was next gone into at some length. The author had made carefully-planned experiments, the methods being explained by means of lantern views. Whether elasticity caused a loss of efficiency had been debated, and the balance of opinion was that within certain limits, owing to the perfect reaction, the observed resilience was a decided advantage. The author believed Mr. Staunton's "resilient" block chain to be superior to the ordinary block variety. The whole thing was a question of degree and reaction. The author had experimented to find how much pressure was required to spin out a roller. He found that, under conditions similar to those prevailing when the chain is working, it required 800 lb. pressure to make any impression; the roller tested was not hardened. In speaking of friction, the lecturer dealt with the friction of the rivets in the sleeves, chains *v.* bolts, motor-car chains, and anti-friction chains. Mr. F. W. Lanchester, to whose motor-car we referred in our last issue, gave some interesting facts referring to the chains of motor-cars, and the very high factor of safety considered necessary, explaining some of the reasons for this. Mr. P. M. Staunton then explained how this "resilient" chain reduced the disadvantage of the necessary intermittent drive of a cycle. He also drew attention to the difference in elasticity of form, and of substance, and elasticity through the multiplication of parts. A vote of thanks to the author for his paper brought the meeting to a close.

**The Bletchingley Disaster.**

In another column we give an account of the most regrettable accident that occurred to Major H. A. Barclay's car at Bletchingley last week; we are assured by Major Barclay that this account is correct in all details. This most unfortunate accident, luckily resulting in no serious injury to human beings, showed no primary fault in the construction of the car, although subsequent events would seem to demonstrate that means should be adopted to prevent the spirit from catching fire when the car is overturned, and so destroying the car and possibly further endangering the life or limbs of those who perhaps previously have been seriously injured. As to the causes leading up to the accident, there can be no dispute, we think, that these rested primarily in the unsuitability of the dress worn by Major Barclay on the occasion. A driver of a horse-drawn vehicle would be inconvenienced by a flapping hat-brim which obscured his vision at a critical moment, and even more so by his head being suddenly enveloped in the folds of a cape. The driver of a motor-vehicle would be even more so, as his hands are required for the proper manipulation of the vehicle, and he

would have, therefore, greater difficulty in freeing himself from the enveloping folds, the wind also retarding his efforts. As to the cause of the spirit catching fire, there is no doubt in our minds, and judging from the facts at our disposal, that, as a result of the collision and the turning of the car into the ditch, the connecting tube between the spirit tank and the carburettor became ruptured. Then, as the car overturned, the pressure in the tank projected the spirit directly on to the ignition lamps. Had the connection between the tank and the lamps been ruptured, the lamps would have ceased to burn, and probably no danger would have resulted. Major Barclay and his companion have our most sincere sympathy; the shock sustained by them must have been terrible; and we further congratulate them upon having emerged from the accident with such comparatively slight injuries.

**Bournemouth and its Motor-Car Service.**

ACCORDING to a provincial contemporary, during the latter half of last week, two questions appeared prominently in the street and club gossip of Bournemouth—"Have you been to the dog show?" and "Have you seen the motor-car?" The first subject is a matter of the past; the second is one which touches not only the past, but the present and the future in an even more important sense; for if there is one question more than another which is affecting the public mind of Bournemouth just now it is the question of street and road locomotion. Motor-cars are not altogether unknown in Bournemouth; from time to time vehicles propelled by electricity, oil, and steam have been seen in our streets for advertising purposes; and in some few instances medical and professional men have adopted one or other system for professional purposes. But in these latter cases the cars have been small and practically little more than tricycles or quadricycles; and it has been left to Mr. C. R. Hutchings to give Bournemouth people a really practical object-lesson as to the advantages or otherwise of the new system of vehicle on a larger scale. The question may be asked, "Who is Mr. Hutchings?" By profession Mr. Hutchings is a solicitor of long practice in Bournemouth; by choice he has given much of his spare time to the study of the science of locomotion. An ardent cyclist, and a mechanic of no small skill, he has tested time after time the various changes and improvements in road locomotion. His latest investigation has been in regard to mechanical road locomotion. As a member of the governing body having control of the Bournemouth roads, he has studied the question from the points of view of expending the ratepayer's money unprofitably, and also from that of providing the public with an efficient service of public vehicles which should give speed and ease without disfiguring the beauty of the town and its surroundings. He has found a solution, of course, in the motor-vehicle, and is supporting the forming of a service with that exceeding energy for which he is noted, and on which his great local influence rests. He has had a car supplied by the Motor Manufacturing Company, Limited, and has run this experimentally on one of the routes suggested, between Bournemouth and Canford Cliffs, besides taking longer and more extended trips in various directions. In reference to some of the advantages accruing from motor road locomotion as compared with horse-drawn vehicles, Mr. Hutchings has made some interesting and valuable calculations, which will do much to convince even the sceptical that salvation is to be found in the motor-vehicle.

AN automobile club has just been formed at Nancy, France.

THE Automobile Association desire us to state that the *Motor-Car Manual* is 1s. 6d. (post free 1s. 8d.), although the publishing price is 2s. 6d.



# The Serpollet Steam System for Motor-Vehicles.

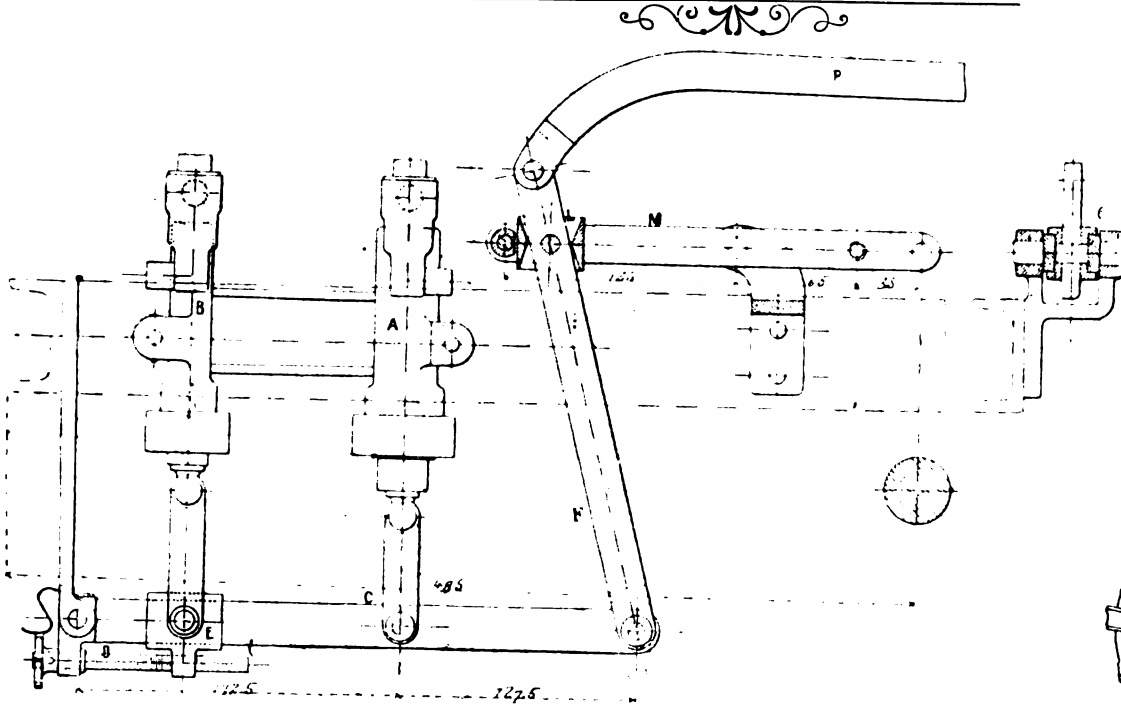
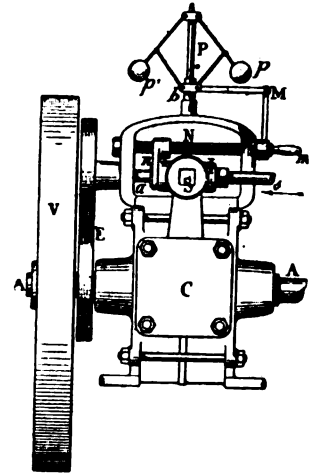
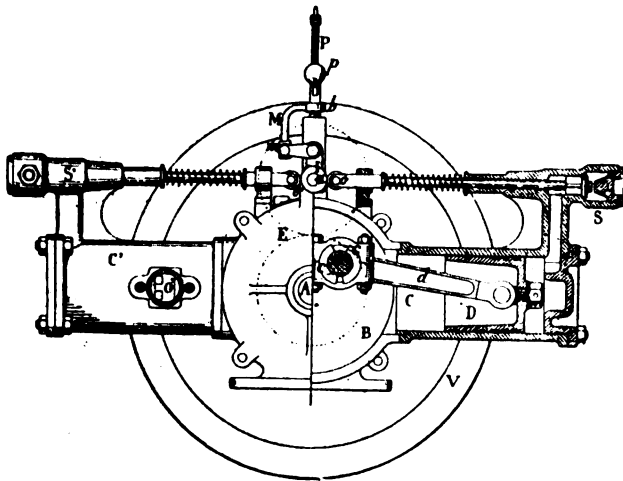


FIG. 1.—ELEVATION OF WATER AND OIL FEED PUMP CONTROL.



FIGS. 2 AND 3.—DETAILS OF MOTOR.



FIGS. 4 AND 5.—PART SECTIONAL ELEVATION AND PLAN OF MOTOR.

**R**ECENT events in France have almost made it a necessity that we shall hear much more of the Serpollet steam carriage in the future than has been the case in the past. The company having the leading interest in the Serpollet patents has had too much to do in looking after the development of vehicles running on rails and using the Serpollet system to pay much attention to the—to them—smaller question of ordinary road vehicles. It is generally understood that this company has re-transferred its rights to Monsieur Serpollet, who has made arrangements with wealthy capitalists to finance him and to provide him with adequate means to manufacture. As a partial result of this development, at the end of last month Monsieur Serpollet, together with the holders of his English patents, demonstrated one of his most recent vehicles before a "select" company in London. The demonstration was successful in every way, and although the design of the carriage was not quite in accordance with English ideas, there was no difference of opinion as to the value of the improvements effected by Monsieur Serpollet, and the consequent thoroughly efficient manner in which it travelled under all conditions of traffic, roads, and loads. The principal of the improvements effected has been in control-

ling the supplies of both oil and water automatically and synchronously, so that on any additional amount of steam being required the additional water is accompanied by an extra supply of fuel to raise that steam. We are able to give some further information and also illustration (Fig. 1) of this interesting device. Referring to the illustration (Fig. 1), *B* is the petrol pump and *A* the water pump; their plunger pistons are controlled by short connecting rods, one pivoted to the lever *C* and one to a sliding piece on the lever *C*, which latter is itself pivoted to a rigid bar at the left; the distance between the pivots on the one hand and the sections of the pistons of the pumps *A* and *B* on the other are so calculated that the quantity of petrol pumped by the pump *B* is exactly that required to vaporise and superheat the water supplied by the pump *A*. Provision is made to adjust the device in order to rectify any disarrangement due to variations of the temperature, the quality of the petrol, etc. This is effected by means of the long screw *D*, which when turned carries with it the sliding piece *E*, and consequently the connecting rod of the pump *B*, the proportions originally established between the supply of oil and water being in this way maintained or modified as desired. When this adjustment has been made, it is still necessary to be able to vary the quan-

tities in proportion to the power the motor must develop, according to the nature of the road being traversed and to the speed. To provide for this the upper end of the lever *F*, which is connected to *C*, passes through a sliding piece *L*, free to slide between the two sides of the balanced or oscillating bar *M*. The latter is mounted at its centre on a crown on which it is free to oscillate, movement being given to the bar by means of an eccentric keyed on one of the shafts of the transmission gear. Thus, by means of the lever *P*, the driver can, from his seat, vary, by altering the position of the sliding piece *L*, the point at which the balanced bar *M* acts on the lever *F*, and consequently vary the stroke of the small connecting rods and of the two pumps. Another point worthy of mention is that by placing the petrol in the storage tank under a slight pressure, or by fixing the tank at a slightly greater height than the burners under the steam generator, the petrol flows slowly, while the vehicle is standing, and, without any action of the feed pumps, lifts the valves of the latter and passes to the burners just in sufficient quantity to give a very small flame, the generator being in this way always ready to get up steam at short notice.

Several views are given in Figs. 2 to 5 herewith of the new motor, which has lately been devised by M. Leon Serpollet, to work with superheated steam, as supplied by the special type of steam generator used in the Serpollet steam motor-vehicles. It comprises two single-acting cylinders *C C'* arranged opposite to each other in such a way that the two piston-rods work on to the same crank-shaft. The piston-rods *d* are pivoted to the bottom of the piston *D*, and are connected by a special crosshead to a single crank. The crank runs in an oil-containing chamber *B*, forming the frame of the motor, through the end of which projects the shaft. Steam is admitted behind the pistons by two valves *S S'*, symmetrically arranged on the top of the cylinders, the steam from the generator passing along by the small pipes *s s'*. A feature of the motor is the exhaust arrangement; orifices *O O'* are contrived in the cylinder walls near the end of the stroke of the piston, the excess of steam above atmospheric pressure passing away by these orifices as soon as communication is made between them and the space behind the pistons. The steam which remains in the cylinders at atmospheric pressure is not exhausted; it is, however, on the return stroke of the piston, compressed, and should the pressure due to the compression become greater than that of the steam in the boiler, it is forced back through the valve *S* into the pipe *s*. This arrangement, an alternative form of which is shown in Fig. 3, while not interfering with the admission of steam, is claimed to overcome all condensation within the cylinder and its consequent troubles. The method of controlling the two valves *S S'* is shown in Figs. 2, 4, and 5. It is effected by means of a small shaft *a* fixed directly above, and driven by gear-wheels *E* off and at the same speed as the motor-shaft. A cam sleeve *I* is mounted on this intermediary shaft *a* in such a way that it can slide along it longitudinally. The displacement of the sleeve is effected by means of a specially-shaped nut *n* mounted on a long screw *N* above the cam-shaft. This screw *N* is controlled by a handle *m*, which in turn is controlled by the centrifugal governor *P*. When the balls *p p'* of the governor rise or fall the ring *b* also rises or falls; this movement, by the intermediary of the lever arms *M*, causing the handle *m* and the screw *N* to turn slightly, and consequently to vary the position of the helical cam *I*, cast in one piece with the sleeve on the cam-shaft *a*. The result is that the rollers *o o'* on the ends of the admission valve rods receive a greater or less push from the cam, as the case may be; the admission of steam into the cylinder being in this way varied from, it is stated, zero to 80 per cent. A second cam *i* is provided for reversing the engine; to reverse, this cam is brought opposite to the rollers *o o'* by turning the handle *m*; in the motor-vehicles provision is made for doing this from the driver's seat. The consumption of steam is low; a two-cylindred motor (diameter of cylinders 80 m.m. and stroke 80 m.m.) developing at 510 revolutions per minute, 4 h.p. being said to consume 10 kilog. of steam per horse-power hour.

## MOTOR-CARS ON THE CONTINENT.



### An Italian Motor-Car Fete.

WE referred in a recent issue to the automobile fête at Verona, Italy. We now learn that the fête was a great success. The chief event was a race from Verona to Mantona and back, a distance of 180 miles. The race was divided into two groups—(1) motor-cycles, and (2) motor-carriages. In the first section there were eighteen starters, the winner being Signor Bugath, who covered the distance in 4 hours 5 min. In the second section nineteen vehicles put in an appearance at the start, the victor being Signor Agnelli, whose time for the 100 miles was 5 hours 3 min.



### Turning at High Speeds.

ANOTHER motor-car accident, fortunately without any serious result, is reported from France. It appears that M. Labouré, the Director of the Société de Voitures Automobiles "La Parisienne" of Paris, was out "motor-ing" with his wife, accompanied by a mechanic. At Fréjus a good deal of traffic was met with, and in taking a turn rather too quickly the vehicle overturned, throwing out the riders. Both M. and Mme. Labouré were taken to the hospital, where, however, their injuries were proved to be not very serious.



### Local Motor-Car Regulations in France.

THE Government regulations relating to motor-car traffic in France not yet having come into force, some of the local authorities are issuing regulations on their own account. Thus at Libourne a notice has been issued to the effect that no motor-vehicle may pass through the town at a greater speed than 6½ miles per hour, and that at night each vehicle must be provided with a lamp capable of lighting up the whole of the road for a distance of 65 feet in front of the car!



### Wheel-Steering Control.

IT is well known that among French *chauffeurs* there is an increasing partiality for controlling the steering gear by means of a wheel instead of by a lever. One of those who has long been a strong advocate of this system is M. Jeantaud, the well-known Parisian builder of electrical motor-vehicles. This gentleman has, we learn, lately devised an improved form of wheel-steering gear, which is under automatic control. We hope to publish details of the appliance in an early issue.



### The French Exhibition.

ALREADY ninety-five applications have been received for space at the forthcoming Motor-Car Exhibition in Paris under the auspices of the French Automobile Club, and as a result of the rapid way the space is being taken up the Exhibition authorities have demanded permission of the French Government to use a larger area of the Tuileries Gardens, the *locale* of the Exhibition, than last year.



### Public Motor-Vehicle Services on the Continent.

A SERVICE of motor-omnibuses is shortly to be started between Bouillon and Sedan, France. The vehicles, which according to the *Chauffeur* have been constructed by M. Malevez, of Namur, are fitted with 25-h.p. steam motors, the boiler being heated by means of liquid fuel. The maximum speed will be ten miles per hour.

**The Liège Cycle  
and  
Motor-Car Show.**

A CYCLE and motor-car show was opened at Liège, Belgium, on Saturday last, and remains open until Monday next, the 3rd April. The feature of the exhibition is the large display of motor-cycles and carriages, but as the exhibits in this section form practically a condensed replica of those shown at Brussels a fortnight ago, a description of which was given in our issue of the 17th inst., no lengthy report is necessary.

## A DIARY OF MECHANICAL ROAD LOCOMOTION IN ENGLAND.

### DIARY.—Concluded.

- 1860—Messrs. Louch and Messenger, of Swindon, built a successful steam carriage.
- 1861—Messrs. Carrett and Marshall constructed a steam carriage known as the "Fly-by-Night."
- 1862—Mr. Richard Tangye made a steam carriage.
- 1863—A self-moving steam carriage made by Mr. A. F. Yarrow.
- 1862—Aveling and Porter exhibited a self-moving steam carriage at the Great Exhibition.
- Mr. A. Patterson constructed a steam carriage.
- 1866—Mr. H. P. Holt brought out a "road steamer."
- 1867—Mr. J. W. Boulton's road tractor made a continuous journey of 90 miles.
- 1871—Garrett and Son brought out a self-moving traction engine.
- Self-contained steam omnibus introduced by Nairn.
- Messrs. Ransomes, Sims and Jefferies built four of Thomson's "road steamers" for the Indian Government.
- R. W. Thompson (who in 1845 had patented the pneumatic tire for wheels) introduced solid india-rubber tires which were applied to "road steamers."
- 1875—Mr. H. A. O. Mackenzie constructed his steam boiler for road locomotion.
- 1878—Mr. A. B. Blackburn made a mechanically-propelled dog-cart.
- 1870—Steam carriage made by Mr. Loftus Perkins.
- 1881—Mr. J. G. Inshaw made a steam car.
- 1888—Electric dog-cart made by Mr. Magnus Volk.

A BILL has been introduced into the Austrian Diet for the purposes of providing motor-car services in country districts in which the cost of constructing railways would be too great to prove remunerative.

ATTENTION is to be devoted to automobilism at the meeting of the French Association for the Advancement of Science, to be held at Boulogne from September 14th to 21st next. Messrs. Cuenot and Mesnager will report on (1) motors, (2) vehicles, and (3) motor-car traffic, and this is to be presented and discussed, after which some trial runs are to be organized.

IT is probable that after all Washwood Heath district will not have a service of motor-omnibuses. At the meeting of the Birmingham Watch Committee on Tuesday morning, Councillor Waters presiding, Chief-Inspector Charsley reported that one of three of these vehicles intended for this route was inspected—and rejected. The seating accommodation was found to be inadequate. The seats were parallel, and when two passengers sat opposite each other it was impossible to get past without causing serious inconvenience. The inspector adds that he has reason to believe that the same objection will apply to the remaining two vehicles, and that the project of running these omnibuses on this route will probably be abandoned.

## THE ROAD-RACING CONTESTS AT NICE.

OUR Nice correspondent forwards us a full account of the numerous contests which took place last week at Nice, and judging from this account there are several lessons which might well be laid to heart by those organizing similar contests both in France and in England.

Fortunately for the credit of the "New Industry," as it has been termed, we are not likely to witness any such contests in England. Fortunately, too, although a few automobilists may in their enthusiasm look upon the running of motor-vehicles as furnishing opportunities for "sport," yet the majority regard them as providing "pleasure," whilst still others regard them as furnishing opportunities for "commercial enterprise." Road-racing with motor-vehicles might perhaps become popular with those who cannot enjoy life without voluntarily incurring danger, but to those quieter disposed folks who prefer to take their pleasures without material risks, motor-vehicle racing whether on path or road is undesirable.

In regard to the Nice races, it may be said at once that those who made themselves responsible for their organization and for the selection of the routes to be traversed had neither studied their duties very carefully nor carried them out satisfactorily. The route chosen for the Nice-Castellane-Nice contests proved itself to be impossible to be traversed, even at very ordinary speeds, for from Grosse the hills were stupendous and at the same time the roads at the most dangerous parts were strewn with large rocks on one side and were bounded by a yawning ravine on the other. Of the nineteen entrants several endeavoured to traverse the course before the race, but as a result very few succeeded without meeting with severe accidents, perhaps the most severe occurring to Gingolty, who rode a tricycle. His injuries are sufficient to prevent his racing for many a long day.

As a result nearly all the competitors refused to start unless the route was altered, and consequently the authorities decided on the evening of the 20th inst. that the course would be altered to Nice, Castellane, Puget, Théniers, and Nice, and that many parts of the route would be declared neutral ground on which no racing would take place. As a matter of fact, all racing through Puget, Théniers, and Castellane was stopped. After leaving Nice 92 kilometres of the route were "neutralised," racing only commencing again about 30 kilometres' distance from Nice. In regard to the race for "touring" vehicles the course at the last moment was changed to Nice-Gattières-Maganosc-Nice, instead of Nice-Maganosc-Nice. At the last moment, too, Monsieur Bardou, the "Prefet" of Nice, died, and it then became uncertain whether after so many changes the races would take place at all.

Ultimately, however, all the "tourist" and "speed" competitors gathered together on the Promenade des Anglais at Nice, and at 7.10 exactly M. Giraud was the first to start on the terrible trip. The next in order to show the rears of their vehicles were MM. Giradot, Charron, De Dietrich, De Turckheim, Leys, Brouhot, Decauville, Archdeacon, Lemaitre, etc., twenty-four carriages starting in all. The motor-cycles next started, and these included Marcellin, Osmont, Jacquelin, Teste, Tart, Beconnais, etc.

The last starter in the carriage section was Lemaitre, who drove a Peugeot fitted with a motor of 18 h.p. Before he had covered 500 yards he had to stop to repair a puncture in his tire, which a large nail had pierced. He lost as a consequence fourteen minutes, but this he speedily made up before he reached Castellane, notwithstanding the fact that two additional punctures further hampered him. Having regard to the power of his motor it is not wonderful that Monsieur Lemaitre was able to negotiate all the hills at the rate of forty kilometres an hour, passing all the other vehicles quite easily, and, indeed, leaving several of them as though they were standing still. As a result M. Lemaitre arrived first at Nice, his Peugeot carriage covering the dis-

tance in 2 h. 52 m. 50s. The times of arrival at Nice were as follows :—

## CARRIAGES.

1. Lemaitre (Peugeot), 2 h. 52 m. 50 s.
2. Girardot, 3 h. 19 m. 20 s.
3. Kœchlin, 3 h. 22 m. 45 s.
4. Loysel, 3 h. 25 m. 55 s.
5. De Turckheim, 3 h. 26 m. 45 s.
6. Georges, 3 h. 35 m. 30 s.
7. Charron, 3 h. 35 m. 40 s.
8. Archdeacon, 3 h. 40 m. 45 s.
9. De Dietrich, 3 h. 43 m. 50 s.
10. Levegh, 3 h. 51 m. 40 s.
11. Roscoff, 3 h. 54 m. 30 s.
12. Buisson, 4 h. 1 m. 10 s.
13. G. Leys, 4 h. 10 m. 30 s.
14. Schneider, 4 h. 24 m. 6 s.
15. Decauville I., 4 h. 27 m. 30 s.
16. Brouhot, 4 h. 59 m.

## MOTOR-CYCLES.

1. Teste, 2 h. 59 m.
2. Rigal, 3 h. 20 m. 37 s.
3. G. de Méaulne, 3 h. 28 m. 4 s.
4. J. Jouan, 3 h. 51 m. 55 s.
5. Caron, 3 h. 58 m. 36 s.
6. Jacquelin, 4 h. 57 m. 30 s.

Marcellin was rather severely hurt on this journey, and it is only due to his presence of mind that he was not dashed to pieces. Going down a hill he found a sharp turning, the road being bounded on one side by a ravine. Finding it impossible to negotiate the turning at the pace he was travelling, and equally impossible to stop his vehicle without serious chance of danger, he permitted his machine to precipitate itself down the ravine, throwing himself off the seat on to the road just as the edge was reached. Although Marcellin received several severe contusions, his presence of mind and pluck undoubtedly saved his life.

Another accident occurred at the same place to a driver of one of the Decauville voituresses. He had a severe fall and broke both his arms.

In regard to the winner in the motor-cycle class it must be mentioned that M. Teste had *two* De Dion motors of 1½ h.p. each fitted to his machine, which fact naturally gave him the advantage in climbing the hilly roads.

In the tourist carriage class no serious accidents are reported. The contestants started from Nice at ten o'clock, and the order of their arrival was as follows :—

## MOTOR-CYCLES.

Géo, 2 h. 21 m. 56 s.

## TWO-SEATED CARRIAGES.

1. Motocadre, 2 h. 58 m. 18 s.
2. Mme. Dhasty, 3 h. 13 m. 55 s.
3. Lacotte, 3 h. 25 m. 30 s.
4. Duquesne, 3 h. 52 m. 50s.

## FOUR-SEATED CARRIAGES.

1. Mercédès, 2 h. 27 m. 30 s.
2. H. de Rothschild, 2 h. 34 m.
3. A. de Rothschild, 2 h. 40 m. 30 s.
4. Comte de Vos, 2 h. 46 m. 40 s.
5. Clérissy, 3 h. 4 m. 2 s.
6. Gauthier-Wehrlé, 3 h. 15 m.
7. De Fabrègues, 3 h. 34 m. 5 s.
8. Vauquelin, 3 h. 38 m. 15 s.
9. Delizy, 3 h. 40 m. 35 s.

## SIX-SEATED CARRIAGES.

1. Buisson, 3 h. 54 m.

As will be seen from the above, Madame Dhasty arrived second in the class for two-seated vehicles, and this success of a "chasseuse" in such an important contest will no doubt be received with acclamation by her numerous fair colleagues in Paris.

The kilometre race took place on the 23rd inst. on the Promenade des Anglais, and, as was to be anticipated, Monsieur Lemaitre, in his 18-h.p. Peugeot, won quite easily, beating in the final heat, and covering the kilometre in forty-seven seconds, which represents seventy-six kilometres an hour.

In the motor-cycle series, M. Beconnais got the better of Tart. Altogether this event was not considered to be otherwise than disappointing.

The hill-climbing race up the Turbie took place on the 24th inst., and resulted in an additional success for M. Lemaitre on his terrible Peugeot vehicle. The distance was covered by him in 24 minutes 23 seconds, the next arrivals in the two-seated carriage class being as follows :—

2. Giraud, 26 m. 42 s.
3. De Dietrich, 28 m. 51 s.
4. Loysel, 28 m. 53 s.
5. Buisson, 29 m. 57 s.
6. De Turckheim, 30 min. 47 s.
7. Archdeacon, 31 min. 42 s.
8. Kœchlin, 32 min. 22 s.
9. De Dietrich, 33 m. 34 s.
10. Edmond Georges, 36 m. 32 s.
11. Schneider, 41 m. 56 s.
12. Motocadre, 42 m. 45 s.
13. Hachette, 48 m. 40 s.
14. Brouhot, 52 m.

## FOUR-SEATED CARRIAGES.

1. Audibert-Lavirotte, 48 m.
2. H. de Rothschild (No. 102), 43 m. 34 s.
3. A. de Rothschild (No. 103), 46 m. 34 s.
4. Roscoff, 49 m. 19 s.
5. Lacroix, 1 h. 12 min. 45 s.

## SIX-SEATED CARRIAGES.

1. Guyenet-Balvay, 1 h. 31 m. 51 s.

## MOTOR-CYCLES.

1. Gaëtan de Meaulne, 26 m. 47 s.
2. Béconnais, 27 m. 42 s.
3. Jacquelin, 28 m. 2 s.
4. Demester, 30 m. 8s.
5. Legras, 35 m. 52 s.
6. Geo, 39 m. 27 s.
7. Duquesne, 39 m. 43 s.
8. Roubert, 48 m. 43 s.
9. Garin, 52 m. 22 s.
10. Tart, 53 m. 16 s.

The distance covered in this contest was 16 kilometres 200 metres, and this was traversed last year by M. Michelin in his steam-carriage in 31 minutes 50 seconds, so that M. Lemaitre's vehicle shows considerable progress this year so far as speed goes, but it must also be added that the horsepower is also materially increased.

The "concours" for "carriages de luxe" was not very interesting, although some fairly luxurious and elegant carriages took part. The prize was awarded to a Peugeot vehicle, the body being furnished by Kellners.

Consequently all the chief honours of the Nice races fell to Peugeot, whose vehicle, driven by M. Lemaitre, was first in all the principal competitions for carriages. The result cannot be regarded as extraordinary in view of the horse-power of the motor employed, but nevertheless great credit accrues to Monsieur Armand Peugeot in view of the fact that only one carriage was employed, and that no mechanical accident or breakdown interfered with its performing the arduous tasks set out for it, and the following of the really terrible and dangerous routes selected for some of the races.

THE Rochester Electric Motor Co., of Rochester, U.S.A., has been incorporated with a capital of £2,000.

THE Belgium Automobile Club proposes to organize a motor-car meet and a number of races at Namur this summer.

IN Munich, motor-car drivers must be examined by the police commissioner before being allowed to take charge of motor-cars.

A NEW firm has just been registered at Billancourt (10 Avenue du Cours) France, with a capital of £2,400, under the style of Messrs. Renault & Co., to manufacture motor vehicles.

THE Hollandsche Automobielen Maatschappij is the name of a company which has lately been formed at Delft, Holland, with a capital of 50,000 fl. to establish a service of motor-vehicles between Delft and Rotterdam, and between Delft and The Hague. It is anticipated that the service will be inaugurated in May next.

## The "Tauzin" Voiturette.

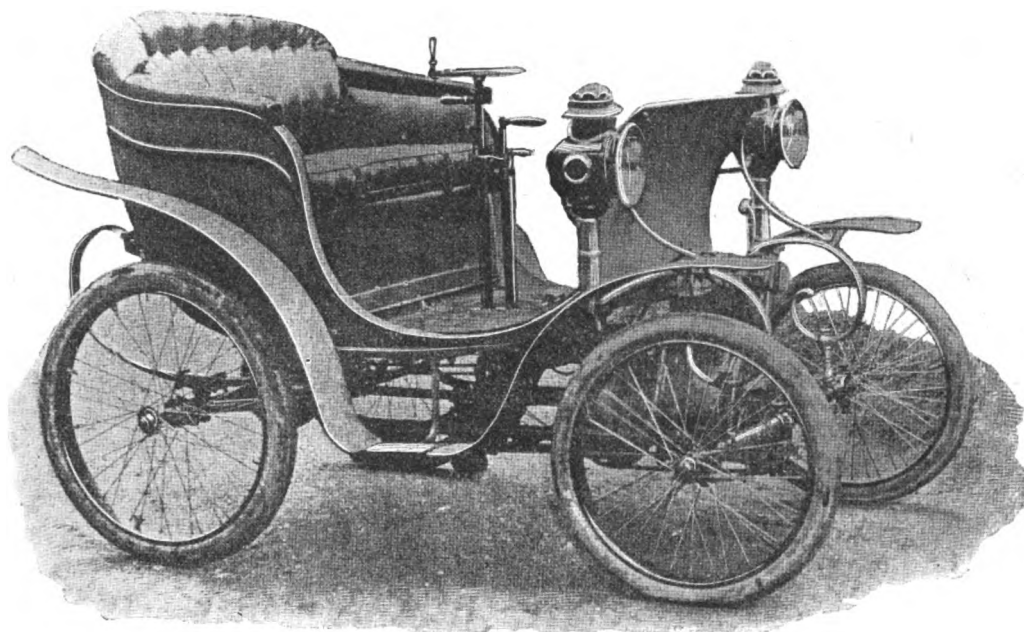


FIG. 1.—GENERAL VIEW OF CAR.

FOLLOWING on the description of the "Union" voiturette, given in our last issue, we are now able to give some particulars, with illustrations, of a new two or three-seated light vehicle recently introduced by Messrs. Tauzin & Co., of 11 Rue Bellanger, Levallois-Perret, Paris. The frame of the vehicle is built upon steel tubes, *ee* (Fig. 3), well braced together by the solid stays *e'*, *e''*, *e'''*, the body of the vehicle being supported on the frame by strong springs. To deal first with the motor (Figs. 4 and 5), which is carried on the front end of the frame,

spur wheels *e*. The ignition is effected electrically, the sparking arrangement being controlled by a cam on the motor shaft outside the cover.

The carburettor *C* (Fig. 3) is of a special type; it consists of two metal concentric boxes, in the centre of which is a series of cotton wicks. These wicks become saturated with petroleum spirit, and are so arranged as to offer a large evaporative surface. Air is free to circulate between the outer and inner boxes, and passes into the interior of the

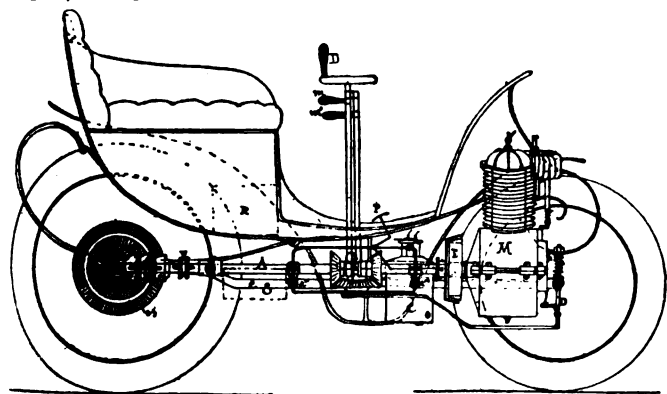


FIG. 2.—SECTIONAL ELEVATION OF "TAUZIN" VOITURETTE.

this is of the firm's two-cylinder petroleum-spirit type, and is known as the "Papillon." The two cylinders *CC'* (Fig. 4) are set in the same vertical plane, but at a slight angle to each other. It will be seen from Fig. 5 that the motor shaft *A* is in two parts, each carrying on their inner ends, within an aluminium oil-containing case *B*, discs *VV'* which take the place of the usual crank. Between these two discs two cranks *VV'*, set at an angle of thirty-six degrees to each other, are mounted, and to these the two pistons *DD'* are connected through the obliquely-fixed piston rods *dd'*. The admission and exhaust valves are mounted on opposite sides of the cylinder tops; the former work automatically, while the latter are controlled by a cam carried on a small shaft driven off, and at half the speed of, the motor shaft through

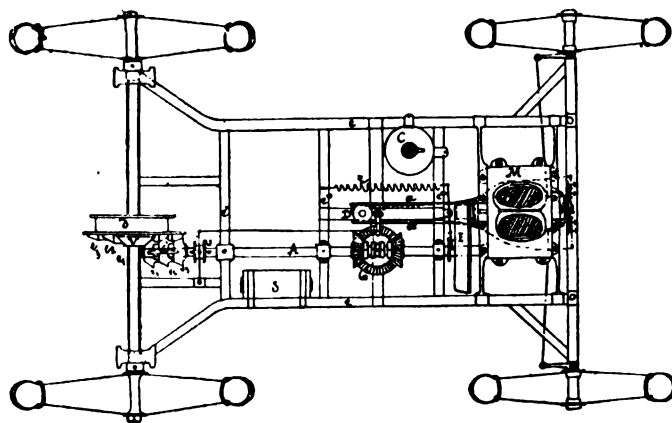


FIG. 3.—PLAN OF FRAME &amp; TRANSMISSION GEAR—"TAUZIN" VOITURETTE.

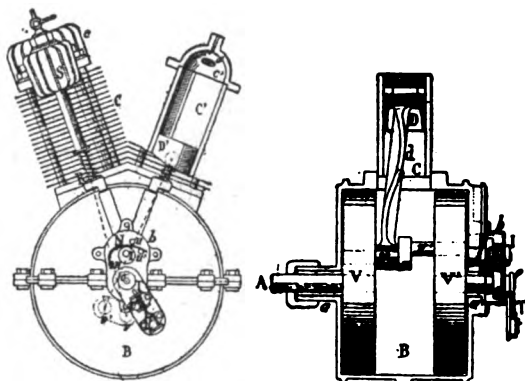
latter through holes pierced all round almost to the level of the spirit; the air thus comes in contact with the saturated wicks, the resulting hydro-carbon vapour passing to the motor along an upper pipe, in which is introduced a valve, fitted with a butterfly regulator, for the admission of the necessary amount of pure air to the explosive mixture.

For cooling purposes, the cylinder, as also the admission and exhaust valves, are fitted with radiating flanges, those round the cylinder being of copper, the placing of the motor in front allowing a constant stream of cool air to play on the same. The motor, which weighs just about one cwt., is, it is stated, capable of working up to  $3\frac{1}{2}$  h.p.

Coming now to the power-transmission mechanism, the motor is, as already mentioned, located on the front portion of



the frame, at *M* (Figs. 2 and 3). The motor shaft *A* extends the whole length of the vehicle; at *E* a friction clutch is interposed in the shaft, the two halves of the clutch being held apart by means of the spring *r*; thus, by means of the foot pedal *F* (Fig. 2) the motor can be instantly cut off from the transmission gear. Three forward speeds,  $5\frac{3}{4}$ ,  $10\frac{3}{4}$ , and  $17\frac{1}{2}$  miles per hour, and one backward motion, are provided. At the end of the longitudinal shaft *A* are loosely mounted three bevel pinions  $V^1$ ,  $V^2$ ,  $V^3$  (Figs. 2 and 3), gearing on a similar number of rows of bevel teeth  $e^1$ ,  $e^2$ ,  $e^3$  fixed around the differential gear on the rear road-wheel axle. These pinions run loosely on the shaft *A*, but are always in gear with their respective set of teeth on the differential, the desired speed being obtained by making the corresponding pinion solid with



FIGS. 4 AND 5.—SECTIONAL VIEWS OF "PAPILLON" MOTOR.

the shaft. This is effected by means of a sliding key *c'* controlled by the handle *m* on the steering pillar through suitable levers and the sliding piece *U*. This sliding key *c'* is so arranged that it can be interposed between the shaft and any one of the three bevel pinions  $V^1$ ,  $V^2$ ,  $V^3$ , thus transmitting the power of the motor to the rear road-wheel axle at any desired one of the three speeds available. The reversing motion is effected by means of the bevel wheels *G*, controlled by the handle *m'*, the direction being determined according to which of the two vertical pinions are in gear with the horizontal one.

Steering is effected by means of the front wheels, which are mounted on the usual short vertical pivots. At the lower end of the steering standard *D* is a small pinion *D'*, which gears with the racks *a*, connected with the levers to the front wheel pivots.

The oil-storage tank is located at *R* under the seats, while a silencer for the exhaust is placed at *S*. The wheels are of the bicycle type, fitted with pneumatic tires. The foot pedal *F*, which controls the friction clutch *E*, is also connected with a band brake on the differential gear *d*, the depression of the foot pedal not only throwing out the clutch but also at the same time applying the brake. Shoe brakes on the rear wheel tires controlled by a hand lever can also be provided.

It is reported that last week Dr. Roberts, the medical officer for the New Winchester Rural District Council, met with a slight accident whilst riding his motor-cycle. According to local reports, he was coming down the Alresford Road to Winchester between five and six o'clock, when "the oil tank exploded and set fire to his clothes, but he prevented injury to himself by rolling in the snow." The cycle, however, was completely wrecked. We have asked Dr. Roberts for particulars, but up to the time of going to Press with the present issue have been unable to procure them. As reported, the "accident" seems incomprehensible, but further information will doubtless tend to elucidate the apparent mystery, when we shall probably find that the "explosion" was due to a leaking pipe and the consequent igniting of the spirit.

## SCOTTISH NOTES.



### The Approaching Season.

THERE is considerable activity among motor-car owners just now in connection with the painting and overhauling of their carriages for the fast approaching season, and naturally the motor works are busy; in fact several owners have had to put up with disappointment, owing to having neglected matters, until such a period that coachbuilders could take in more work.

### The Ignition Question.

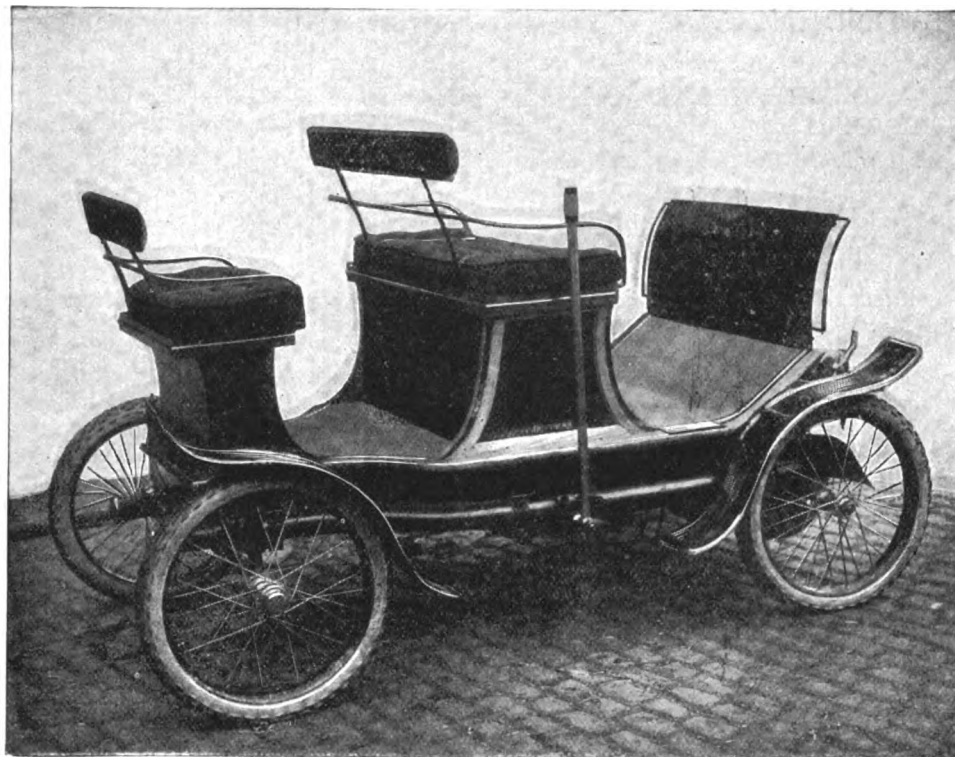
THE discussion which has for weeks past been engaged in by more or less informed persons in the south on this subject has naturally not been without its interest here. The matter is an important one, and should receive careful consideration. Personally I have had more practical experience with "tube" ignition than with the electrical, and provided a driver understands his burners, and periodically renews the wicks, he need have little trouble except perhaps when a gale is blowing. Various contrivances have been invented to protect burners under these conditions, but I cannot say that I have met with any which have proved perfectly satisfactory. In this respect, at least, electrical ignition leads, and although I have had long and favourable experience of the "tube," I am of the opinion that with the rapid improvements which are being effected in the electrical methods, this will prove to be the ideal ignition, and will be found to become increasingly popular every year.

### The "M.-C.J." and Scottish Cycle Trade Journals.

THE advent of *The Motor-Car Journal*, with its fresh Scotch news, has had the effect of leading the Scottish cycle trade journals to devote a much larger amount of space to motor-car matters. Much of the work, however, indicates the liberal use of "scissors and paste" and absence of practical knowledge of the subjects discussed. I am quite aware of the difficulty which many journals experience in procuring the services of a "specialist" qualified to write on an entirely new subject, yet it is of the utmost importance that in the work of educating their readers in the matters of automobilism, the information furnished should be accurate, and that the knowledge it is desired to instil is practical, in order that the deep-rooted prejudice—which in some minds still exists—to such a radical change in our methods of road locomotion should be the more speedily and surely removed. I observe, by the way, that more than one of the pars from my "Notes" in the first issue of *The Motor-Car Journal* were copied last week by one of the cycle periodicals referred to—but without acknowledgment. It was news—only three weeks old.

### Motor-Hiring Activity.

I THIS week had the pleasure of visiting the motor-hiring establishment at Hamilton. The company's premises are centrally situated, and the entrance is on the main thoroughfare of the town. I found the depôt capable of accommodating close on twenty cars, and replete with all the appliances necessary for the expeditious handling of the company's vehicles and for their cleaning and repair. The carriages are chiefly Stirling-Daimlers, and number over a dozen. They are of various types, including Stanhopes, wagonettes, omnibuses, phaetons, parcel vans, and lorries. Many of the vehicles are being repainted for the season, and look very attractive. The prospects for the season in this district are, I learn, exceedingly good, and with so well-equipped an establishment it should prove a profitable year to the company.



THE NEW PENNINGTON-STIRLING SOCIABLE. (SEE "A MAIDEN TRIP.")

#### A Maiden Trip.

At the invitation of Messrs. Stirling, of Hamilton, I had the pleasure this week not only of inspecting but of having a trial run on board the first new Pennington-Stirling motor-car completed by the Hamilton firm, an illustration of which is given herewith in Fig. 1. The car is, I understand, what will be hereafter known as the "Sociable." It is seated for three persons—two are carried on a commodious front seat, and one on a small seat behind but looking to the front—indeed, almost similar to the "rumble seat" on the old park phaeton. This seat should be very suitable for a servant or attendant when ladies are driving alone. The body is in natural walnut and well finished and varnished. The upholstery is in durable brown rain-proof cloth. A very noticeable feature in the carriage-building portion was its lightness and strength and the ample knee-room provided on both seats. In this latter respect it contrasted very favourably with many other types of automobiles in which I have ridden. The general appearance of this new Pennington-Stirling car is good, and it is altogether unique in regard to the method of construction of the under-frame. The small pneumatic-tired tangent wheels are new to us in this country, and as a whole the effect is most pleasing. It is a low-set vehicle, easily mounted and dismounted, and one experiences a pleasant sense of safety when riding in it. Its running pleased me most of all. On the trip of some twelve to fifteen miles the motor worked with unfailing regularity, and I was delighted with the manner in which it took some of the moderate hills met with on the high gear. On enquiry I learned that the new "Sociable" fitted with a single-cylinder motor, such as the one I had the pleasure of testing, will be sold at somewhere about 140 guineas, and at this figure it appears to be thoroughly good value and marvellously cheap. It needs no prophet, I think, to predict that the demand for these vehicles will this year be enormous. The seat-rails are nickel-plated, and the seats are upholstered in cloth. When desired, a light waterproof hood can be supplied. As the body is suspended on light graduated steel springs all vibration from the frame, to which the motor is affixed, is intercepted, with the result than as easy riding is secured as in the best-designed horse-drawn vehicle. When constructed

to carry four persons, the back seat being widened for the purpose, a twin-cylinder motor is employed, and the vehicle, even when thus fitted, weighs only 4 cwt.

#### Easter Runs.

THE need of a club nearer home is the more keenly realised when the holiday season arrives. It is too far to journey to London to take part in the tours of the Automobile Club, and many of the Scotch members have to content themselves with tours on their own account, which, after all, are perhaps not much less enjoyable for that reason. We have a lovely touring country, and to "tour" by motor-car is to experience a new and fascinating delight. So soon as the new club is instituted, this is doubtless a department of work which will receive special consideration.

#### The Notes.

I AM pleased to learn from various sources that *The Motor-Car Journal* is being welcomed by the many interested in motor matters in Scotland, and further that the "Scottish Notes" are appreciated by its numerous readers. It will be my endeavour to faithfully record passing events of general interest and to keep my readers in touch with everything of importance in connection with the development of automobilism in Scotland.

#### A New Car for Edinburgh.

THIS week a new motor-wagonette was placed on the streets of Edinburgh for public hire. It is, I understand, the property of a private firm who have just gone into the motor-hiring business. The wagonette is a very handsome vehicle, built by Stirling's Motor-Carriages, Limited, of Hamilton, on the "Daimler" system. It is seated for eight or nine persons, and is somewhat after the type of the vehicles which have been run for some time past by the Edinburgh Autocar Company. The intention, I believe, is to let out the car on hire by the day, week, or month. Edinburgh is certainly a place presenting ample scope for business of this kind.

BROWN HEATHER.

## CORRESPONDENCE.



## MR. WRIDGWAY AND THE SPEED OF HIS TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was extremely pleased to read Mr. Wridgway's letter of the 18th inst., as he clears up a number of points over which I was in doubt. I did not know the facts about the race at Sheen House, but if they were as he states it would, of course, seriously affect the speed of his tricycle.

I am glad to hear how Mr. Wridgway's estimate of his speed was obtained. He bases his assertions upon statements made by the Automobile Association, and refers to the speed claims set forth by them. I was quite sure that the statements made by Mr. Wridgway were not based upon his own calculations, as he is, I believe, too good a judge of speed to make an assertion loosely. Twenty-four miles an hour and thirty-three are very different things, as Mr. Wridgway will quite appreciate. Of course I am only referring to England, and do not wish to doubt Mr. Wridgway as to what he did in France.

I am obliged to him for his explanation about a tricycle on the track being slower than on the road, although I have never had the opportunity of proving this. I also thank Mr. Wridgway for his offer of a seat upon Messrs. Pennington and Baines' car (which he now points out is a racing car), but I have been on it before—a long time ago.

London, S.W.

Yours faithfully,  
"CYNICUS."

## WANTED: A VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I happen to be one of a large number to whom pedalling is debarred; and the motor-cycle makers in no wise help us. What we want is a reliable, inexpensive motor-vehicle that will take us about. Pray open your columns to our aid and service. We don't want elegantly-upholstered cars. What we need is something that will convey us reliably about at a moderate pace, and so bring us on a par with our more favourably placed brothers and sisters who can cycle.

Newbury, Berks.

Yours, etc.,  
R. LOVELOCK.

## THE MORS V. THE PENNINGTON VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We really feel highly flattered by the letter of the Automobile Association in your issue of the 17th inst., as, to our knowledge, the "Mors" is the fastest, and in many respects the best, of the heavy motor-cars thus far put on the market; and the wish of the Association to match their four-cylinder 380-guinea car against our one-cylinder 125-guinea car is a measure of the success we have attained in the eyes of our shrewd opponents. Had this been the view taken by ourselves solely, we might have thought there was a mistake somewhere, but we have been congratulated on the matter both personally and by mail from many quarters, and our friends seems to have regarded the matter in the same light, namely, as a striking compliment to our car.

A Scottish gentleman who comments upon the matter suggests that the fairest contest, and the one that would interest the public, would be between a "Pennington" two-cylinder motor and a "Mors" two-cylinder motor, each motor having same diameter of cylinder. On these conditions, which are obviously fair to both competitors, we shall be delighted to race for a distance of not less than 500 miles with the Automobile Association. We, however, must state that we would not care to go into a race with each party entering five or six cars, for obvious reasons. Are the Automobile Association afraid that they cannot get through with one car? If one car will not go through, it is useless to

have five. We are well aware of the fact that it is a favourite idea of French makers to put many cars of the same pattern in a race. Some time ago, when the Count De Dion wished to race us, he intimated that he would put in from a dozen to twenty machines in a 200-mile race against our car; so this plan of plural entries is quite an old one in France.

Yours faithfully,

PENNINGTON &amp; BAINES.

## THE N.C.U. AND MOTOR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As you may be aware I have arranged a match on motor-tricycles to be ridden on Easter Monday between one of the best-known Parisian motorists, M. Rigal, and the, to us, better-known English rider, C. G. Wridgway. As these men will start from opposite sides of the track and will both be going for the record, it is necessary to have a timekeeper each. I had already notified our official timekeeper, G. P. Coleman, that he and another timekeeper would be wanted for the cycle meeting, which begins half an hour after the conclusion of the motor match, and, not wishing to have the trouble of engaging another set for the match, I wrote to him on the 11th inst., asking whether the N.C.U. would object to his companion and himself timing it. To this, on the 25th inst., I received the following reply:—

DEAR BAILY,—I have got leave for ——— and I to time the motor races, provided Wridgway and the Frenchman take out licences, which can be obtained from Dr. Turner at once in the usual way.

Yours truly,  
P. COLEMAN.

This seems to show that it is the intention of the N.C.U. to apply all the rules and regulations by which they have tied up cycle racing also to motor racing. However much this process may be required in that sport, and however necessary control of some sort may be required for motor competitions, to use exactly the same rules, many of which cannot obviously apply to motors, is an attempt that, either through lack of knowledge or thought, may do incalculable harm to a form of sport that at the present juncture seems one to be cultivated not harassed. It also shows that the National Cyclists' Union is not the proper body to have control of the pastime of motor racing. Are all the motorists of England who may wish to ride in a race on the track willing to go through the fearful ordeal of obtaining N.C.U. licences by filling up the whole page of questions on the application forms? Are they willing to become professionals if they compete against or make the pace for a man who may have been declared a professional by the National Cyclists' Union through an infringement of one of its many clauses; or are they prepared if they ride in a road race and have the misfortune to be the holder of a N.C.U. amateur licence to have it revoked, and so become *ipso facto* a professional, and if holding a professional licence to be suspended? I trow not. In the case of our Easter Monday match one of the riders (M. Rigal) is riding in the Paris-Roubaix road race on Easter Sunday, and is therefore not eligible to hold a National Cyclists' Union licence. Wridgway, I fancy, has done some pacing on the road, and is therefore also in the same category. Consequently I have engaged two other timekeepers who are not under the control of the N.C.U. Will the Union tell us in what way a professional motorist has an advantage over an amateur? Will not the members of the engineering profession always have a better chance than an ordinary motorist in these races? Will the Union declare them professionals? Is it not the machine and the skilful manipulation of same that will win the race? Therefore, where is the necessity of dividing the two classes?

Yours truly,

94 Oakfield Road, Penge, FREDK. W. BAILY,  
March 29th, 1899. Hon. Sup. Crystal Palace Cycle Track.

# MR. EDGE AND THE PENNINGTON CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. S. F. Edge's letter in your issue of the 17th inst., in fairness to the public we think he ought to define his interest in motors, as he is at present posing as an impartial authority, whereas any statement or opinions he may publish would be considerably discounted if, for instance, he were known to be interested with Mr. H. J. Lawson or with the British Motor Syndicate, Limited, in some contemplated flotation of a new company to work motor-cycles. We notice that the Ariel Cycle Company announce in their advertisements that they are fitting their motor-tricycles with Dunlop motors under licence from the British Motor Syndicate, and we have been informed, rightly or wrongly, that Mr. Edge is the active and controlling spirit behind this combination. Many people have asked us: "Who is the Mr. S. F. Edge who is such a frequent contributor to the papers on motor-car subjects? If he is simply an enthusiastic motor-carist, who, as a private individual, is anxious to help on the new industry—well and good; but is he working his name in in order to grind his own axe and also that of Mr. Lawson, and is there any truth in the rumour which is circulating, namely, that shortly there will be a new flotation in which some persons whose names are familiar in connection with the Dunlop Tire Co. and the British Motor Syndicate will figure, if not prominently, at least effectively behind the scenes as wire-pullers?"

Mr. Edge can probably tell us how much truth there is in the rumour, and, anyhow, the public are entitled to know whether he is a director of the Ariel or of any other motor company, and, consequently, how far he can be relied upon as a would-be impartial critic of other motors.

Yours faithfully,

March 28th, 1899.

PENNINGTON & BAINES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I beg to thank you for the opportunity of replying to Messrs. Pennington and Baines' letter which appears in your current issue.

I certainly will have the very greatest of pleasure in answering all the queries raised by Messrs. Pennington and Baines, but at the same time I cannot help thinking that if they had refrained from a personal attack on myself and answered my queries in a straightforward businesslike way everybody would be more interested and better pleased.

Speaking personally, I have tried, ever since I have seen Messrs. Pennington and Baines' motors advertised and what they would do, to get one. When they were first advertised some two or three years ago, and somewhat similar claims to the present set forth, I wrote several times, both by registered and unregistered post, for particulars, prices, and date of delivery for one of their cars.

At that time I had no experience in regard to motors, and I took it that the claims made in their advertisement would all be justified in use. Of course, I now see that evidently that vehicle was not an efficient commercial vehicle or it would be in existence to-day; so I have to thank the gentleman who looked after Mr. Pennington's business at that time for their unbusinesslike conduct in, at any rate, saving me buying what would appear from our present knowledge not to have been a successful car. However, this is by the way, and I will now answer the queries raised.

First, in answer to their wish for me to define my interest in motors, this I have pleasure in doing. It is simply that I am a director of the Ariel Cycle Company, who buy the best motors in the best market for fitting to their tricycles, and who will, I have no doubt, always be open to buy the best motor that is going.

I am also a director of Paris Singer, Limited, which is a company who own at present a special type of gas and oil engine, whose business has chiefly been in high-speed stationary engines, but who are now making engines for heavy cars.

I am also a director of the Dion-Dunlop Company, which

is a company who have a fairly large interest in working the patents of Messrs. Count de Dion and Bouton.

In regard to their query as to what I am personally, I am afraid I must plead guilty of being an enthusiastic motor-carist, but as a private individual, who is anxious to help on a new industry; primarily because when I became a motor-carist myself some two or three years ago I was scoffed at by nearly every one I knew, but even in that short time I have seen many of those scoffers turn round to become motor-carists themselves.

I have no doubt that in due time, through being a believer in this industry and having opportunities through being a believer of becoming financially interested in what, in my opinion, are good motor businesses, I may make some money out of it. So far, I must be simply termed an enthusiastic honorary worker for the good of the cause.

In regard to any flotations that there may be remarks about, I am not interested directly or indirectly in any, nor have I ever had any experience in the flotation of companies of any description, and I feel that if there was any opening in this direction Mr. Pennington, with his great experience, would be far more capable of dealing with it than myself.

In regard to the last paragraph of their letter, I have already dealt with this in an earlier portion of my letter, the query being thus answered.

As to whether I am impartial or not, I cannot quite see how this enters into the question at the moment, as I have never criticised or discussed anyone's motors if I have personally been the slightest bit interested in anything of a similar character.

I do very sincerely trust that I may have the opportunity of seeing one of Messrs. Pennington & Baines' cars really run for a hundred miles on the road, as, if I did, no one would be quicker to acknowledge the fact; but I should like to see it in the hands of some private person who has purchased it in an ordinary business way.

Yours truly,

7 Tavistock Chambers, Hart Street, W.C. S. F. EDGE.

March 29th, 1899.

## ALARMING MOTOR-CAR ACCIDENT AT BLETCHINGLEY.

AN accident of an alarming character happened last week with the motor-car of Major H. A. Barclay, J.P., D.L., of Underhills Park, Blethingley, the chairman of the Godstone Rural District Council and Board of Guardians, and a member of the Automobile Club of Great Britain. The facts are as follows: Major Barclay started at 2.20 p.m. on his motor-car with a lady who was staying at Underhills, to see some land he had bought at Crowhurst. His groom accompanied them. As they were proceeding along the drive towards the Godstone Road entrance-gate of Underhills estate it began to blow and snow hard. Major Barclay was wearing a "slouch" hat, the rim of which was blown over his eyes. He pushed it back and lowered the speed to nine miles an hour, and was just rounding a curve in the road when the cape of his Inverness blew over his head, and before he was clear of it again he heard someone on his right side on the road shout out. The same moment he got his head free and saw a horse and cart, to avoid which latter he turned sharp to the left. whilst the occupants of the cart pulled close to their right (left) side of the road. The edging of the road, however, was high and frozen hard, and the car could turn no further, and as a result a collision occurred. The wheel of the cart, the occupants of which latter were Mr. Councillor Markham and Mr. L. Harradine, both of Earlswood, who had been to a hunting meet, struck the axle of the fore off-side wheel of the motor-car, wrenching the guiding handle of the car out of Major Barclay's hand. Major Barclay at once applied the breaks, and "threw out" the engines; the car skidded sharp round to the right, just brushing the cart and breaking one shaft of that vehicle with the shock, and then turned a complete summersault off the road and into the ditch. As the car went over Major Barclay, with great presence of mind, called to the lady to "duck" her head, and did the same thing himself, slipping down below the dashboard. The groom, who occupied a seat behind, was thrown over their heads, being trapped by the legs in some rails in the hedge on the far side of the ditch. The same instant a sheet of flame broke out all over the car above them. Major Barclay shouted to the groom to clear himself and come to their assistance, but finding that he himself was only caught by one leg, and that the fire was almost on them, he (Major Barclay) managed, with much difficulty, to squeeze himself out over the lady, who could not move herself, and dragged her out just as a sheet of flame reached where they were below the bar. The

instant they were out all the rugs and coats, etc., were one huge bonfire. The man at the back only just got free as the flames reached him. He immediately rushed round to help Major Barclay with the lady, who was cut about the head and bleeding badly. By Major Barclay's direction the man endeavoured to let off the pressure, which he succeeded in doing very pluckily, while the gallant officer tried to ascertain if the lady was much hurt. They were about ten yards below the car at this time, but the flames, and heat were so intense that Major Barclay had to pick the lady up again, and remove her further away for safety. In a short time from the moment of the upset the car body was practically consumed. It was the most providential escape possible for Major Barclay and the lady, and if they had not been thrown into the ditch, and been thus protected from the crushing weight of the overturned car, or if Major Barclay had been unable to get free, or been as much hurt as the lady, they must have both been burned alive before help could have reached them. The upset itself was bad enough, but the terrible part of the affair was the fact of the car catching fire even while in the act of turning over. We are pleased to state that the lady is progressing favourably, though she is cut and much bruised, and confined to her bed. Fortunately, Major Barclay and his groom are very little the worse. The car is a wreck, no woodwork being left.

### "FURIOUS" MOTORING AND CYCLING.

WALTER MUNN, 12 Shaftesbury Avenue, London, was summoned before the Guildford Borough Bench of Magistrates last week for furiously driving a motor-tricycle in London Road on the 12th inst. Reginald Trevor, 48 Queen's Gardens, London, was summoned for furiously riding a tricycle in London Road, on the 12th inst., and Clifford Hutton, 130 Chesterton Road, Notting Hill, and James Burden Barnes, 33 Trevor Terrace, Knightsbridge, London, were summoned for furiously riding bicycles at the same time and place. The defendants pleaded not guilty.

Sergeant Hall said at 3.35 p.m. on Sunday, the 12th inst., he was in London Road at the junction of Waterden and York Roads with P.C. Holt, when he saw the four defendants coming towards him from the direction of Guildford. Munn was riding a motor-tricycle, Trevor an ordinary tricycle, and the other two defendants safety bicycles. They were going at a very furious pace—in his opinion about eighteen miles an hour. He called on them to stop. They did so, and witness spoke to them, telling them that he thought they were going at the rate of nearly twenty miles an hour. Munn said he did not think they were going at that rate. Dr. O'Reilly came up and said he was sure they were not going beyond the regulation pace; and he thought they were going well under fourteen miles an hour. One of the defendants remarked: "I don't think you can say that." Cross-examined by the defendant Munn: He judged the pace by the rate they passed stationary objects. Mr. Munn said it was practically impossible for people to judge the rate bicycles or motors were travelling when coming towards a person.

P.C. Holt also gave evidence.

Mr. Munn said they were going at a perfectly reasonable pace. He had ridden on the road for twenty years without having an accident or without being cautioned or summoned. He was a careful rider, and would not risk his own safety or the safety of the public for the sake of going at a furious rate.

Another of the defendants stated that he had ridden for seventeen years and had never been stopped before for furious riding.

Dr. O'Reilly then gave evidence on behalf of the defendants, and said he was looking out of the window of his house when they passed. They were stopped by the police at the cross roads, and he was so astonished that he went out and remonstrated with the police. They were going at a very reasonable pace. He was a pretty good judge of speed, being a bicyclist himself, and in his opinion they were going well under the regulation speed—not more than between ten and twelve miles an hour. He based his opinion on the fact that the rider of the ordinary tricycle, a machine which was not adapted for speed, was riding easily, and it would be impossible for such a machine to travel at eighteen miles an hour. He thought the police were mistaken in this case. He was as anxious as the police to have furious motor driving stopped. He heard every word that passed, and wished to emphatically deny that any one of the defendants said: "I don't think you can say that."

Mr. Trevor said the ordinary tricycle he was riding was not adapted for speed; it being geared very low, and it was a physical impossibility to ride at eighteen miles an hour.

The Mayor said the Bench were quite satisfied on the evidence of the police that the defendants were riding at an unreasonable pace, and to the danger of the public. They would be fined 10s. each.

### LIST OF DEALERS STOCKING PRATT'S MOTOR-SPIRIT.

IN view of the Easter Holidays we give herewith an additional list of those firms keeping motor-car spirit in stock in London and the suburbs and in the provinces:

#### LONDON.

C. W. Austin,  
J. Gibbs, oilman,  
Oulds Bros.,  
Wellington Motor-Car Works,  
Taylor & Lown,  
J. Stromberg & Co.,  
Wootton & Son,  
Onward Cycle and Motor-Car Co.,  
A. Oldby,  
Southern Motor-Car and Cycle Co.,  
Paris Singer Manufacturing Co., Ltd.,

35 Brewer Street, Soho.  
High Street, Wandsworth.  
3 Market Place, Oxford Street.  
36 St. George's Square, N.W.  
2 Rosemont Road, Finchley Rd., N.W.  
Catherine Place, Clapham Rd., S.W.  
Poplar Walk, Croydon.  
417 Brighton Road, Croydon.  
167 Beckenham Road, Penge.  
59 Brixton Road, S.E.  
Manor Street, Clapham, S.W.

#### PROVINCES.

Beverley,  
Birchington-on-Sea,  
Bournemouth,  
Bradford,  
Bridlington,  
Gainsborough,  
Great Yarmouth,  
Hull,  
Leeds,  
Barnard Castle,  
Middlesbro',  
Newcastle-on-Tyne,  
Thirsk,  
Edinburgh,  
Coventry,  
Hull,  
Lynn  
Retford,  
Scarborough,  
Skegness,  
Wakefield,  
Carlisle,

J. W. Tanfield.  
E. Bushbridge, Stores, The Green.  
Birmingham Cycle Co., Holdenhurst Road.  
Mrs. Calvert.  
C. Smith.  
Heinle & Co., 50 and 168 Trinity Street.  
J. Leach, Market Place.  
King & Co., Ltd.  
G. Exley & Sons.  
Joshua Burn & Son, Horse Market.  
Constantine Pickering & Co.  
Rowland Barnett & Co., 41 Dean Street.  
Clark & Co., Market Place.  
Ayre & Son.  
Finlayson & Stewart, Regent Arch.  
Autocar Co., London Road.  
Daimler Motor Co.  
Motor Manufacturing Co., Ltd., Motor Mills.  
Hayter & Co.  
F. Morris.  
T. Walker.  
J. M. Crosby & Co.  
A. W. Rowley.  
W. Pollard.  
Fletcher Ritson, chemist and optician.

### SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

### Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

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[No. 5.]

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## COMMENTS.

### The First Motor-Car Trip to Baslow, Derbyshire.

A CORRESPONDENT sends us the following:—"I had a great piece of luck recently in running against a man in Sheffield who had a motor-car seating eight people, and who wanted a passenger and a route for a run. Some members of the Press Club and a certain number of cycle agents of the city suggested that we should load up the car and have a run to Baslow, Derbyshire. This motion was carried unanimously, and it was remarked this would be the first car to negotiate the difficult roads between Sheffield and Baslow. Ultimately, the suggestion being a good one, the party was increased to ten, and although constructed to carry but eight, the wagonette on this special occasion managed to accommodate the party of ten, including the driver. We started from the Moor about noon and journeyed straight on without hitch or trouble until the 'cravings of the inner man' required attention, which they duly received at the 'Peacock' Inn. The glorious views of the Derbyshire hills from this high spot appealed to the whole company, and I would that it were possible to secure a camera with a range long enough to take one huge photograph of this magnificent view. We lighted our lamps and started off again to Baslow, and having enjoyed a substantial lunch at the 'Royal Hotel,' the host complimented us on the appetites gained by this exhilarating run of over twelve miles in that magnificent rocky country. We paid a flying visit to Chatsworth House, and enjoyed our inspection of that historic seat of the Duke of Devonshire to the full. After leaving Baslow it was all 'collar work' for six good miles, but the motor was not 'collar-proud,' nor did it 'jib' at these stiff hills, even with its heavy load of passengers. We reached the Press Club at Sheffield in thoroughly good time, and were so pleased with this impromptu outing over the Yorkshire and Derbyshire moors that we decided to present Mr. Gilbert (a representative of the Motor Manufacturing Co., to whose kindness we were indebted for our enjoyment) with some little souvenir of the occasion. We ultimately found a means of doing so by handing him a gold scarf pin, and we hope that Mr. Gilbert may wear it long enough to give us another run on one of the excellent cars made by the Company he represents."

### "The Motor-Tricycle Explosion at Winchester."

WE briefly reported last week an accident which was said to have occurred to Dr. Roberts, the medical officer for the New Winchester Rural District Council. At the time of going to press with our last issue the "accident" was incomprehensible, it having been reported that the spirit tank had exploded, enveloping Dr. Roberts in flames, which he only succeeded in putting out by rolling in the snow. We then surmised that if an explosion did occur it was due to a leaking pipe between the carburettor or tank and the engine. From further particulars now gathered we learn that our surmise was correct, and that the accident was due

to the cause suggested. The other details of the accident as reported were, however, considerably exaggerated. There was undoubtedly an explosion, but it was a very slight one; and in regard to the rider having been set on fire, we find that a small quantity of spirit was projected on to the lower portions of his nether garments, but that the flames were very speedily and easily put out. His machine, instead of being a "perfect wreck," was but very slightly injured, and we are glad to state that Dr. Roberts was able to take part in the tour of the district by the Automobile Club on its Easter run.

### Public Motor-Vehicle Services.

THE extension of public motor-vehicle services still continues in all parts of the kingdom. Amongst the latest districts to take up this matter is Newcastle, and it is certain from the local evidence gained on the spot that residents in Newcastle and its vicinity will gladly welcome the inauguration of at least three distinct services in the neighbourhood. The other day the local papers recorded a visit of the managing director of the Motor Manufacturing Company to the district, and gave an account of the means taken to advance the establishing of a motor-car service in the vicinity. During the past week these journals have contained accounts of the visit of Mr. W. M. Hodges, the secretary of the London Motor-Van and Wagon Company, who has taken down a car and given the townspeople examples of the convenience of local motor-car services. We understand that as a result of these visits negotiations are pending for the purchase of six cars with a view to establishing at least two services in the district. Ireland also is coming to the front in this matter, for on Thursday last week a meeting was held in the Mayor's parlour at Waterford to consider the feasibility of establishing a company to own public motor-vehicles and to run them between Waterford and Dunmore during the coming season. We understand that the project has been taken up enthusiastically, and that already close upon £1,000 have been promised towards the formation of the company. Munster will thus probably be the first province in Ireland having a public motor-car service.

### Wanted: "A Volturette."

IN our last issue, in referring to the necessity of manufacturers endeavouring to supply the large public demand for a light vehicle not fitted with a pedal-starting arrangement, we ventured to criticise the altering of the old form of Bollée voiturette by placing the exhaust valve at the top of the explosion chamber instead of at the bottom, as was previously done. A correspondent, writing over the initials, "C. R. H.," has been bold enough to allege that we have made a mistake in this matter, and that the exhaust valve has never been put at the top of the explosion chamber in the Bollée motors. We publish his letter in the present issue. Our valued correspondent is, however, himself in error. We have ridden in France some two hundred miles on a Bollée voiturette with the exhaust valve placed as alleged, and have ridden over one hundred miles in England on machines of both French and English construction, the

exhaust valve being placed at the top in each case. "C. R. H." has evidently one of the old types of French-made Bollée vehicles of  $1\frac{3}{4}$  h.p. If he desires to see a vehicle constructed as described, we are quite sure the British makers of this vehicle will be pleased to show him such an one, and if desired also to give him a trial spin. It is no part of our present intention to criticise the placing of the valves, but from our own experience we judge the alteration to be a fatal one, and we are sure that if "C. R. H." had possessed a machine with the exhaust valve on top, he would not be able to record the experience he has in regard to having no trouble with the valves as fitted on the old pattern cars. In regard to the cooling of the cylinder, we regret that we cannot support either of the suggestions made by our correspondent. We certainly do not think the walls of the cylinder would be cooled so quickly were radiating fins not provided, nor can we commend the ingenious but untidy arrangement adopted by "C. R. H." We regard it as a both unsightly and inconvenient arrangement to have water slowly dripping on to the outer surface of the cylinder walls. In regard to the hill-climbing capacity of the Bollée, we support our correspondent, for with all its numerous faults, and very troublesome and annoying features, the old style of Bollée voiturette furnished a means of having thoroughly enjoyable and exhilarating runs.

#### A Reminiscence of 1834.

THE death of Mr. Robert Baillie, the shipbuilder and engineer, on Saturday last recalls one of the first attempts to run a regular service of self-propelled vehicles on ordinary roads. For Mr. Baillie had been employed in building the steam-carriages with which Mr. J. Scott Russell established regular communication between Glasgow and Paisley in 1834. These attained a speed of seventeen miles an hour, but incited the anger of the trustees of the road who allowed cartloads of stones to be placed upon the highway to obstruct their progress. Nevertheless, the service continued until a wheel of one of the carriages gave way, the whole weight of the back portion of the vehicle falling upon the boiler, which burst, causing the deaths of five persons. The Court of Session then interdicted the carriages on Scottish roads, and, for a time, two of them subsequently plied on the road between Hammersmith and London. The motive-power was supplied from the hind part of the conveyance—the weight of the carriage resting on springs—and a tender was attached intended for water and fuel.

#### The Abandonment of Birmingham's Motor-Car Service.

As we briefly announced in our last issue, the Birmingham Watch Committee refused to grant a licence to the vehicles which the Llandudno Touring Company proposed should serve the citizens. We now learn that the Company have decided not to proceed with the venture owing to this adverse decision, and will utilise the cars in some other district, where "leg-room" is not regarded from the same extravagant point of view as is the case in Birmingham.

#### The Motor Maxim Gun.

WE recorded in our last issue that the 26th Middlesex Volunteers proposed to experiment with a Maxim gun attached as a trailer to a De Dion motor-tricycle, on their Easter manoeuvres at Aldershot. Experience proved on Good Friday, however, that a  $1\frac{3}{4}$ -h.p. motor-tricycle was not sufficiently powerful to give satisfactory results. This we anticipated would be the case. The idea of trailing a Maxim gun in this way is by no means new, but the weight of the gun hanging dead on the tricycle axle puts much too great a strain on the motor and also in the gearing. Besides, we should not think the rider had a very enviable job in starting the combination, and opine that his muscular development would need to be fairly considerable.

#### The Institute of British Carriage Manufacturers.

THE Council of this Institution have arranged to hold their next meeting at York, commencing on September 12th, when the members will be received by the Lord Mayor at the Mansion House. The president (Mr. S. G. Turner, of Bristol) will deliver his presidential address, and several papers will be delivered, including one on "Aluminium as applied to Coachbuilding." Visits will be paid to Scarborough and Studley Royal. A strong reception committee is being formed, and the duties in connection with the meeting have been placed in the able hands of Mr. Johnson Wilkinson, of Huddersfield, and Mr. T. F. Wales, of York. The secretary of the Institute (Mr. Andrew W. Barr) has already visited York and made the necessary arrangements in regard to hotel accommodation and for the dinner to be held on the first evening of the conference. The original date (September 5th) was abandoned owing to the Doncaster races being held at that time.

#### Public Motor-Vehicle Services.

AMONGST other towns who are considering the feasibility of starting public motor-vehicle services is Grimsby, where Mr. Ryder has applied to the Hackney-carriage Committee for a licence to drive these vehicles in the town and its vicinity. The licence was withheld until the members of the Committee had inspected the vehicle, and, *pari passu*, had a ride in it in order to test its capabilities and the skill of the driver. A car was furnished one day last week, and a large number of the members of the Committee attended, apparently with a view of enjoying a comfortable ride. The Mayor, Alderman Louth, and several Councillors took part in the trial trips, journeying through various streets of the town and round the park. The utmost admiration was expressed with the vehicle and its performances, and, after their experiences, the Committee had not the slightest hesitation in granting a licence, which, by the way, was "granted" actually during the progress of the experimental runs. A car now runs between Grimsby and Cleethorpes, and already the patronage given to the vehicle assures the venture being commercially successful.

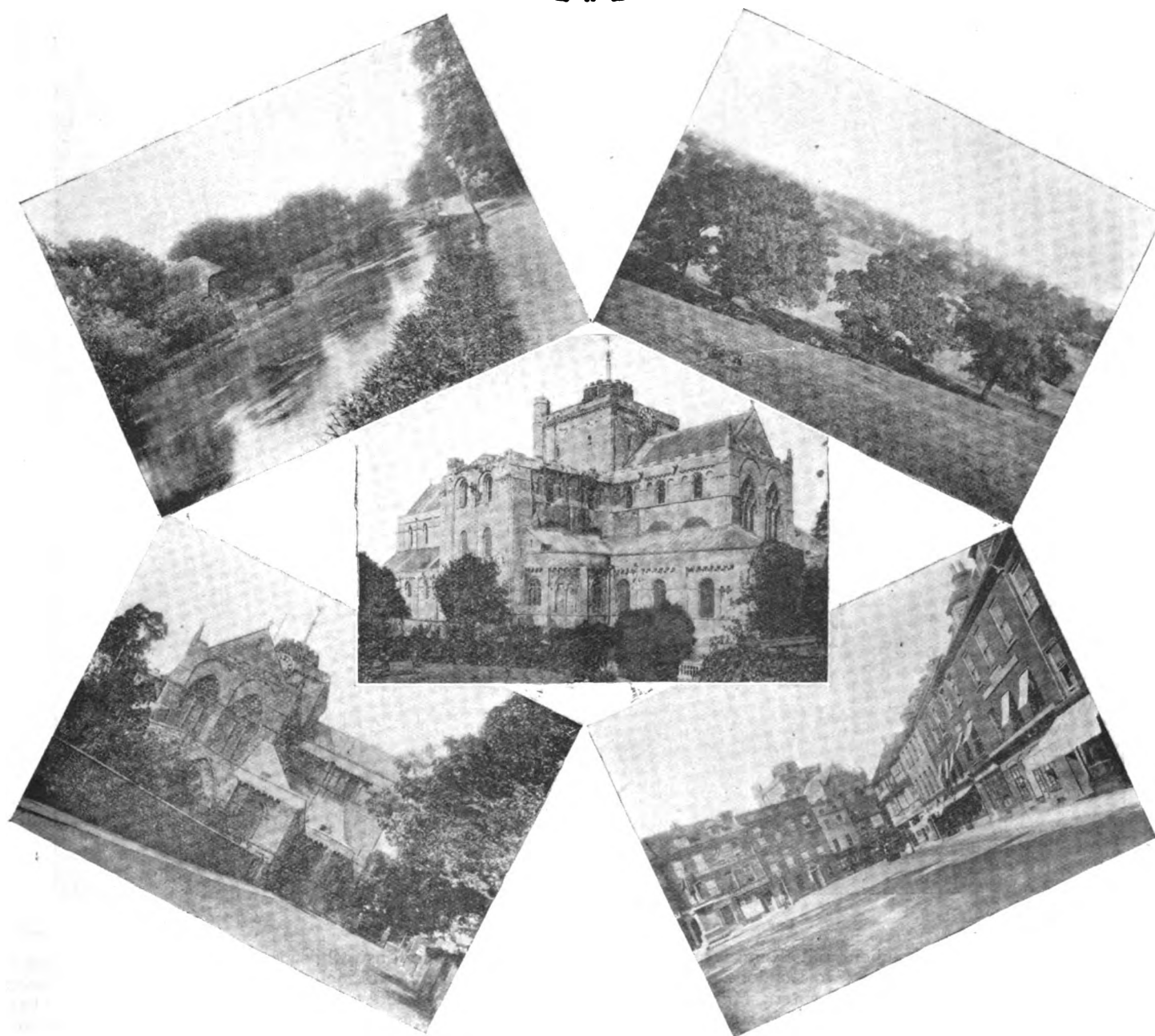
#### The Victor Steam Motor-Cars.

THE Overman Wheel Co., Chicopee Falls, Mass., are now exhibiting the Victor steam automobile at their works. They refer to it as perfectly automatic in character and as being so graduated that any speed from the barest motion up to whatever the owner wishes it geared to can be obtained. An average gearing is about 20 miles an hour. The vehicle is guaranteed for 25 per cent. gradients. Usually the engines are of 4 h.p., the carriage being a light one, with seating accommodation for two. The complete machine weighs about 600 pounds, and is equipped with 28-inch pneumatic rubber tires from 2 to 5 inches in diameter as ordered, a medium size being 3 inch. It is guaranteed to be perfectly safe, with no possibility of explosion, and the cost of operation is stated to be  $\frac{1}{2}$  cent a mile. Gasoline is used as a fuel to generate steam.

MESSRS. S. KRAUS & Co., of 27 Potsdamerstrasse, Berlin, have lately secured the agency for Germany for the Phebus motor-tricycles, quadricycles and light voiturettes of Messrs. Noé, Boyer & Co., of Paris.

MOTOR-VEHICLES are responsible for new words in the vocabularies of most modern languages. To describe the man who is addicted to the new habit, the French say "chauffeur" or "motorcyclist." In London he is called "autocarist" or "motocyclist." The Hollanders say "automobilist," and the Italians "carbonaro." The Germans amplify by saying "motorfahrer" or "autombifahrer."

## The Automobile Club's Easter Tour.



SNAP SHOTS ON THE AUTOMOBILE CLUB'S EASTER TOUR.—ROMSEY.

**F**INE weather and pleasant company are factors which go a long way towards making for success on a motor-car tour, and these conditions the above Club enjoyed on its Easter tour. Amongst those who took part in the run were: Mr. Frank H. Butler (Benz 5-h.p. double-cylinder dog-cart); Mr. S. F. Edge and Mrs. Edge (Panhard); Mr. C. Jarrott (Panhard); Mr. Townsend (Papillon tricycle); Mr. Herbert Capel (Benz Ideal); Mr. Chas. Cordingley, Mrs. Cordingley, and Miss Purchasehouse (Iveagh phaeton); Dr. Lehwess (Mors); Mr. Frentzel (Mors); Mr. Ernest Estcourt and Mrs. Estcourt (Daimler); Mr. Lyons Sampson and Mr. S. Beevor (Benz 5-h.p. Victoria; Mr. and Mrs. Kitto (Benz Ideal); Mr. and Mrs. A. W. Armstrong (Peugeot-Daimler); the Club wagonette (Daimler), Mr. Ernest M. Instone; the Club phaeton (London Motor-Van and Wagon Co.).

The passengers on the Club vehicles were: Mr. Roger

Wallace, Q.C., Mr. Louis d'Egville, the Rt. Hon. J. H. A. McDonald, C.B., LL.D., F.R.S., Lord Justice Clerk of Scotland (Winchester to London), Mr. Worby Beaumont, Mr. Staplee Firth, Mr. David Waterlow (London to Salisbury), Mr. Holland Tringham, Mr. Andrew W. Barr (Winchester to London), Mr. A. Poole, Mr. C. Johnson (secretary) and Mrs. C. Johnson.

The following also took part, some for only a portion of the journey: Mr. W. J. Crampton (motor-tricycle), Mr. J. Gretton (sporting drag), Mr. Fuller and Mrs. Fuller (Daimler), Mr. and Mrs. W. C. P. Wills (Benz), Slough to Reading; Dr. Acworth (De Dion tricycle), Brentford to Lyndhurst; Mr. Robert E. Phillips (De Dion tricycle), London to Lyndhurst; Mr. Peacock (Daimler), London to Lyndhurst; Mr. Buttemer and Mrs. Buttemer (Benz Ideal), Salisbury to Romsey; Mr. and Mrs. J. A. Koosen (Lutzmann), Salisbury to Lyndhurst; the Hon. John Scott Montagu, M.P.



From Photographs

THE AUTOMOBILE CLUB'S EASTER TOUR.—STONEHENGE.

by Judd, Stonehenge.

(Daimler), Lyndhurst to Beaulieu and Romsey; Mr. H. Egerton (motor tricycle), Lyndhurst to London; Mr. J. H. Knight (Benz), Winchester to Blackwater; Major-General H. P. Montgomery (Daimler), Romsey to Basingstoke; Mr. and Mrs. H. A. House and party—eleven in all—(Lifu steam wagonette), Salisbury to Winchester; Mr. John R. Hargreaves, J.P. (8-h.p. Daimler), Slough to Salisbury; Mr. Muir (Daimler), London to Longford; Mr. Mulliner (Benz), London to Hounslow; Mr. Parr (Headlands electric carriage); Mr. J. McManus (Headlands electric carriage); Mr. Oppermann (electric carriage); and at Slough Dr. Porter, of Windsor (Daimler), joined the party.

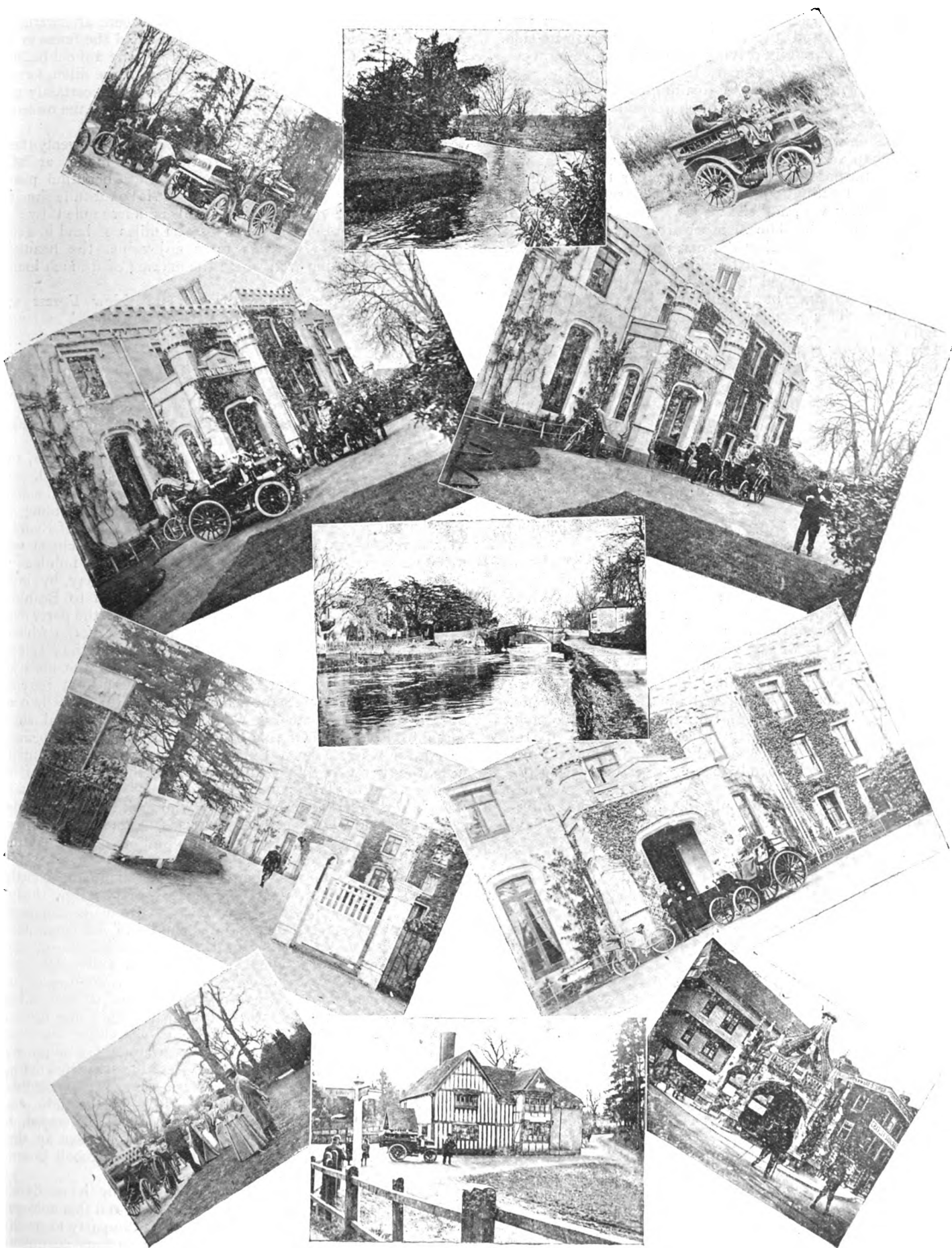
There was, we heard, the usual large crowd outside the Club premises at Whitehall Court, but this we missed through being a few minutes late at the start. We, however, on an Iveagh phaeton, soon overtook some of the rear-most cars, and at Kensington came up with the electric and several other cars. With these we kept company, with Mr. and Mrs. Edge immediately in the rear, until Hounslow was passed. A short stoppage was made at Slough for tea, and then with a comfortable run we duly reached our destination at Reading, covered with dust but in good time. About five miles before reaching Reading, a Mors car passed us, enve-

loped in a cloud of dust, whilst we also passed, but in opposite directions, several cars, including one driven by Mrs. Weguelin.

It may be interesting to note that two pneumatic tires were punctured, one being on Mr. Frentzel's Mors car and the other on Mr. Edge's Panhard—while Mr. Armstrong on his Peugeot-Daimler took from 6.30 till 11.40 p.m. to traverse the distance between Brentford and Reading, about 30 miles. About thirty-five sat down to dinner, under the presidency of Mr. Roger Wallace, Q.C.; the only toast given was that of "The Queen."

Some excitement was caused after dinner by the arrival of Mr. Jarrott on a Panhard car with the news of what might have been a serious accident. It appears that he left London rather late, and when travelling well, within about three miles of Reading, suddenly saw something white rise up just under his front wheels. This was followed by a concussion, and Mr. Jarrott, who was alone with his dog, was shot out, but fortunately was uninjured. Quickly picking himself up he was just in time to see sheep racing away up the road. He saw that his car was on its side, apparently much damaged. Assistance was soon at hand and the car was righted, when it was seen that one lamp was smashed to pieces, the other bent backwards, the splashboard splintered, the axle of the





SNAP SHOTS ON THE AUTOMOBILE CLUB'S EASTER TOUR.—HERE, THERE, AND EVERYWHERE.



near-side wheel slightly bent, the engine-casing dented, steering gear bent, etc., etc. The front of the vehicle looked as if the car had struck the road on its edge and had then gone on to its head and afterwards rolled over on to its side. Mr. Jarrott, after carefully driving his car in Reading, completed the tour on Mr. Edge's car.

There were in the stables at Reading on Thursday night sixteen cars, scarcely any two having similar bodies, and three motor-tricycles, including a "Papillon" vehicle. As we were making up our minds to retire for the night, news of another mishap arrived. It appeared that the Club car was used for the purpose of conveying a member to his home a few miles from Reading, and during the journey it was run into by a furniture van, and the woodwork of the rear seat of the car was smashed. The member arranged for some men to work all night in repairing the car, and it duly ran next day, albeit it started somewhat behind time. Dr. Lehweß and Mr. Frentzel returned to London on their Mors cars immediately after dinner, but promised to join the party again at Lyndhurst. This promise, however, was not fulfilled, to the regret of many taking part.

The next day, Good Friday, opened gloomily, heavy rain having fallen overnight; but when a start was made about 10 o'clock the sky had cleared, and by midday the sun was shining gloriously. Our destination for lunch was Whitchurch (thirty miles). Some journeyed thither by the Bath Road and others *via* Pangbourne; but a general halt was made at a charming little spot called Newtown, about two miles beyond Newbury. This Newtown was situated at the foot of two hills, and consisted apparently of only a single inn that must have been hundreds of years old; close by this inn was a picturesque old bridge and a running stream. At this spot, an 8-h.p. Daimler joined us, with Mr. and Mrs. Hargreave on board, while just over the brow of the hill Mr. Edge was seen busily engaged in repairing a puncture. Time getting on, a start was made for White Shoot Hill, a stiff and loose gradient of 1 in  $6\frac{1}{2}$  (measured by Mr. Worby Beaumont). At the foot of the hill the 8-h.p. Daimler passed us and was only just in front when it stopped dead, and so brought our car also to a standstill, compelling the passengers to get out and walk. The 8-h.p. Daimler, we afterwards heard, had to be pushed up the hill, whilst Mr. Edge's car (Mr. Jarrott driving), through slipping a clutch, ran backwards up a steep bank and had a narrow escape of turning over. Whitchurch was duly reached in good time, the hotel yard being enlivened by one member, in entering the stable, trying to take down one of the pillars, but only succeeded in smashing a lamp and splashboard. Another enterprising member on a tricycle, for the second time that day, tried to test the strength of his front wheel against a brick wall, with the result that on his second attempt he succeeded in producing a bent frame. After lunch the run over the Downs to Salisbury (24 $\frac{3}{4}$  miles) was much enjoyed, and most of the cars ran through without a stoppage, all excepting one member arriving in good time. A numerous party sat down to dinner, under the presidency of Mr. Roger Wallace, Q.C., and a pleasant evening was spent. We may mention that about 7 o'clock the 8-h.p. Daimler left us with the intention of starting on a seventy miles run.

Saturday morning opened dull but broke gloriously, and Stonehenge was seen at its best. Some hours were spent by the party in endeavouring to secure photographs, and several of these photos we have been enabled to produce in this issue. The Lifu wagonette, with a dozen passengers on board, joined us here, having been driven over from Southampton that morning. The party included Mr. and Mrs. House, Mr. and Mrs. Towsey, Mr. and Mrs. Andrews, Miss Nicholls, the American Consul at Southampton, Mr. Songhurst, the secretary to the Liquid Fuel Co., etc. On returning to Salisbury to lunch, a horse-drawn carriage was encountered with its wheels locked; the horse was out of the shafts, and the engineer on the Lifu car was seen busily at work unblocking the wheels. A little further we passed Mr. Capel on his motor-tricycle, who was evidently in trouble, and about a

dozen yards away was a third vehicle, the owner of which was engaged in making "one of those little adjustments which are sometimes necessary"! We were afterwards informed that Mr. Capel's tricycle had startled the horse in the horse-drawn carriage first encountered; the animal backed, and threw Mr. Capel and his tricycle into the ditch, fortunately without any ill-effects. The Lifu folks certainly performed a meritorious act of courtesy in helping the owner of the carriage.

The afternoon run was a short one of about twenty-three miles to Lyndhurst, and a variation was made, at Mrs. George Morrison's invitation, to visit her beautiful place, Hamptworth, at Landford. The house is beautifully situated overlooking the New Forest, and is surrounded by the estate of seven thousand acres—seven miles of land in every direction. This visit was most enjoyable, the beautiful conservatories being well worth the making of a much longer detour.

The subsequent drive through the New Forest was most exhilarating. Nothing noteworthy occurred excepting the passing of our vehicle by the Club car, which was driven by Mr. C. J. M. Instone. The chase was a long one, and the "passing" was only accomplished by the passengers bending down to the bottom of the car, to avoid the windage. The Hon. John Scott Montagu, M.P., took the chair at "dinner" that night, and the speeches were commendably brief. About eighty sat down to dinner.

Easter Sunday opened with gloriously fine weather, and the ride to Bournemouth for lunch was much enjoyed. On our way we passed a second Lifu wagonette (stationary), owned, we were informed, by a gentleman residing at Lymington, and a car belonging to Mr. Passmore, of Bournemouth, each car having a party on board. Luncheon was served at 3 p.m., and a stroll round the town was indulged in before a return journey was made. On Monday, by invitation of Lord Scott Montagu, a visit was paid to Beaulieu Abbey, and his Lordship personally conducted the party over the house, and afterwards through the ruins of the Abbey, describing in detail the many instances which has helped to render this charming place certainly are of the most interesting in that part of the country. After light refreshments the Hon. John Scott Montague, M.P., personally conducted the party on his Daimler, a pleasant and short route to Romsey. Of this charming town with its beautiful church we give several views. A long stoppage was made here, the party dividing and exploring the beauties of its environs. Proceeding on the journey we met outside Winchester General Montgomery (who took the chair in the evening) on his Daimler. A halt was made for stragglers, the party forming in procession, and thus entered the crowded streets of the old-time city.

On Tuesday morning fine rain was falling, and shortly after 10 a.m. a start was made for Blackwater, thirty-two miles. This place was reached without a stoppage, the only incident on the journey being the noticing, near Basingstoke, of a wagonette body by the side of the road, then two wheels some distance apart, and a labourer wheeling a barrow with other portions of a wagonette *debris*. It appears that the horse belonging to this vehicle shied at Mr. Barnes' Benz carriage, throwing out the driver, breaking his arm, and smashing up the vehicle. A capital lunch was enjoyed at the "White Hart Hotel," Blackwater, the tables being magnificently decorated with arum lilies, azaleas, camelias, etc., and these were afterwards presented by Mr. Gretton to the ladies of the party—a thoughtful act which was much appreciated. The rain having ceased, a pleasant ride, after a short stop on Staines Bridge for the cars to close up, landed us at the Club, Whitehall Court, in time for afternoon tea.

The distance travelled by the Club during its six days' wanderings was nearly three hundred miles, and this mileage was accomplished in easy stages, enabling the party to spend as much time as desired in visiting the various charming places *en route*. The cars all came through—the majority



SNAP SHOTS ON THE AUTOMOBILE CLUB'S EASTER TOUR—HERE, THERE, AND EVERYWHERE.

comfortably—in fact, all travelled splendidly, with one notable exception, however. Mr. F. Butler had a new double-cylindered Benz, beautifully finished by Mulliner's, Ltd., of Brook Street, W., which ran splendidly without mishap or trouble until somewhere near Staines, where we noticed him making a stoppage to put on a belt which had come off. Mr. Capel rode a Benz Car on the first day to Reading; but had ordered a new De Dion tricycle from Paris, which



SNAP SHOTS ON THE AUTOMOBILE CLUB'S EASTER TOUR!—A TALL MAN—AND Tall Words.

arrived at the hotel in time next morning for him to use it the remainder of the journey. The luggage van of the London Motor-Van and Wagon Company (Tottenham Street, W.C.), gave no cause for anxiety, being always well up to time to enable members to dress for dinner; and while it would be invidious to further particularise the cars we cannot refrain from mentioning our satisfaction with the Iveagh phaeton supplied us by the Motor Manufacturing Company. It travelled through from point to point, without trouble or adjustment. It maintained its average speed well, and confirmed our opinion that there is not a better car in the market. The shape of the car is a comfortable one, and there is an absence of extreme vibration. We had to walk one hill only on the tour, and it is just possible, we believe, that this would have been unnecessary had we not been bothered by the stoppage of a car in front. For the photographs, through which we are enabled to give our readers some idea of the scenes on the journey, we are indebted to Messrs. Herbert Capel, Ernest M. Instone, and C. Jarrott.

THE membership of the French Automobile Club is increasing at a rapid rate. The number now stands at no less than 1,740.

THE Prince of Wales is said to have taken a fancy to driving in motor-cars, and has hired one for his immediate use since he has been staying abroad. His Royal Highness assures his friends that he thinks there is no more pleasant means of travelling.

THE London Traction Haulage Co., Ltd., is the title of a company which has just been registered, with a capital of £5,000, to adopt an agreement with J. Cattermole, and to build and deal in traction engines, motor-cars, steam rollers, trucks, wagons, and other conveyances.

HERR CHR. N. SCHAD, cycle dealer, Munich, has acquired the local agency for De Dion motor-tricycles from Messrs. Cudell & Co., of Aix-la-Chapelle, the German licencees. The latter firm have also appointed Messrs. Schaller & Co., of 136 Leipzigerstrasse, Berlin, their agents in the German capital and the provinces of Brandenburg.

WE regret to announce that Mr. H. House, of the Liquid Fuel Co., caught a severe chill on the Easter tour of the Automobile Club, and had to be left behind at Lyndhurst. Mrs. House was with her husband, and, like nine out of ten of the members and friends, was lodged in an adjoining cottage, where the surroundings were such as not to be—well, conducive to a speedy recovery. We believe he was moved to his home on Tuesday, and trust that he will have a speedy recovery.

## SCOTTISH NOTES.

### A Wet Easter.]

THE weather in the West of Scotland made anything in the way of organized Eastertours impossible. Easter Monday was an improvement on Good Friday, but the roads in most places were extremely soft. Weather of the kind we have been favoured with for some time past impresses upon one the need of ample mud-guards and a suitable chain-case. The former are of course more easily procured than the latter. If, however, one will take note when a car is running at fair speed, it will be observed that most of the mud which finds its way to the driving chains proceeds from the front wheels. By a downward extension of the front mud-guards a most effective means of keeping off the mud has been found, and this at the same time, contributes enormously to the life of the chains. A simple method of obtaining the same results is by attaching a leather flap to the end of existing guards. So effective is this that it practically does away with the need of a cumbersome gear-case.

### The Scottish Club.

I HAVE been asked to remind any of the readers of *The Motor-Car Journal* interested in the formation of a Motor-Car Club who have omitted to send their names to Messrs. Mitchell and Smith, 59 St. Vincent Street, Glasgow, that it will facilitate arrangements if they will do so this week if possible. It is intended, I believe, to organize a Whitsuntide tour in the Highlands in connection with the club, and it is certain to create a good deal of public interest. The support already promised bids fair to secure the firm foundation of the club, but it is of course desirable to "draw to the fold" every possible member.

### The Falkirk Motor-Hiring Co.

In the thriving and populous burgh of Falkirk there are to be found many far-seeing and enterprising people. It is not at all surprising therefore to learn that Falkirk possesses one of the most successful and best-managed motor-hiring concerns in the country. The Company is a private one, having as chairman a well-known and highly-popular county gentleman, Captain J. F. Livingstone, of West-quarter, and the success so far attained is to a large extent due to his energy and personal devotion, which has been ably augmented by the Company's manager, Mr. Thos. Dodds. The Falkirk and District Motor Co., Ltd.—to give the Company its full title—has an excellent depôt, fitted up with the necessary tools and other appliances, and their own staff undertake the bulk of their own repairs. They own a fleet of some eight Stirling-Daimler cars in several designs, and during last summer the Company's vehicles were to be found all over the country with their parties of tourists, the cars being extremely popular and in great demand. I understand that the Company are looking forward to a good season this year. Here, as in other places, trouble has been experienced with car drivers, the supply of which last year was naturally limited, and therefore proprietors were to a large extent in the hands of their men. That many of the drivers are capable men, with their employers' interests at heart, I know from personal observation, but that others are quite the reverse there has been ample evidence, and I am informed that their culpable negligence in some cases led to more or less serious accidents, bringing the new vehicles into disrepute. This season, however, will witness a change in this respect, the supply of men, I am informed, being ample, and, very naturally, only the best men will be retained. Every year there is bound to be an increasing number of openings for steady, intelligent young men as drivers, and I understand makers are doing their best to meet this demand.

**The Motor Industry and Investment.**

THAT the motor industry presents opportunities for the profitable investment of capital is undoubted, and this in spite of the evil which has been wrought through the greed of promoters who placed inflated values on motor patents. Fortunately for Scotland the motor business at its birth got into the hands of people of repute whose name was a guarantee in itself. The prospectus of the first Scotch Motor Company (Stirling's Motor Carriages, Ltd.) bore this out, and presented a very striking contrast to the prospectuses of some of the early English companies, especially in the fact that the vendors stipulated that the purchase price for their business should be paid not in cash but wholly in the shares of the Company. The public appreciated this and their confidence and support was secured—a matter of no small importance in the development of a new industry. Not only was this Company unique in its promotion but also in its operations, it being also the first autocar manufacturing company to pay a dividend to its shareholders. I record these facts to show that in Scotland those interested in the motor-car movement are going about the new business in the right way.

**An Ideal Touring Car.**

A MOTOR-CARRIAGE of a somewhat uncommon appearance passed through Edinburgh one day this week on its way north. From what I saw of it it seemed to me to be an ideal car for touring. It was fitted with the motor in front, in the usual Daimler fashion. It was of the wagonette type, but its chief interest lay in its portable top. This entirely covered the car from front to back, including the driving seat. The frame-work was extremely light, with roof of waterproof material. In front, above the dashboard, there was a large plate-glass window, hung on hinges at the top. In the centre of the sides were two more windows on similar hinges, and leather curtains to roll down. In fine weather the windows all hinge up inside, and are buttoned to the inside of roof, and with the curtains rolled up there is nothing left to obstruct the view of the occupants. With the windows closed and the curtains down and fastened with the convenient screw buttons, nothing, I think, could be more comfortable in stormy weather. I observed also another item, which must add greatly to the comfort of the passengers on the driving seat. It has often been felt that in cold weather it is very difficult to keep one's feet protected when driving, the pedals having to be operated from time to time, and, no matter how closely an apron may be made to fit, the cold wind finds its way in. On this car two close-fitting side doors were fixed, comfortably upholstered on the inside, most effectively keeping out the cold. To people who desire to have the greatest degree of comfort in touring by motor-car, it would be difficult to find anything more suitable.

BROWN HEATHER.

LA Société Commerciale d'Automobiles of Paris has just declared a dividend of 16 per cent. for the year 1898.

WE learn that the Star Cycle Co., Ltd., of Wolverhampton, are taking up the construction of motor-tricycles, utilizing the well-known De Dion motor.

THE Motor Carriage Co., of Ontario, at Toronto, has been incorporated with a capital of £50,000 to manufacture carriages, etc., to be propelled by electricity.

THE Austrian Automobile Club is organizing a motor-cycle hill-climbing race over the Exelberg, between Neuwaldegg and Königsstetten, near Vienna, for the 30th inst.

THE Washington (U.S.A.) Automobile Co. has been incorporated under the laws of Virginia, with the object of manufacturing and selling horseless conveyances. The capital stock is £10,000.

**MOTOR-CARS ON THE CONTINENT.**

**Motor-Car Racing in Italy.**

WE learn from Italy that the Turin Automobile Club is organizing a race between Turin, Pignerol and Trana and back, a distance of about 56 miles, to be run off on the 30th inst. The race is divided into three sections:—  
(1) One-seated motor-cycles, (2) two-seated ditto, and (3) three and more seated motor-carriages. The "road-racing fever" has evidently reached Italy. We are glad that English laws prevent it spreading to England.

**Motor-Car Touring Congress.**

A SPECIAL committee of the Belgian Automobile Club has been appointed to make the necessary arrangements for an automobile meeting at Spa, when an international congress on automobile touring is to be held. The programme, so far as it has been arranged, comprises: July 2nd, a race of touring motor-cars from Brussels to Spa; July 3rd, opening of the Congress; July 4th, a race for speed cars; July 5th, second day of the Congress, also motor-vehicle manoeuvring competition; July 6th, an automobile fleuri, or promenade of motor-vehicles decorated with flowers; and July 7th, a motor-car excursion.

**A Motor-Car for Physicians.**

THE *Motorwagen* of Berlin, in its last issue to hand, illustrates a four-seated motor *vis-a-vis* for the use of country doctors, constructed by the Daimler Motoren Gesellschaft, of Cannstatt, Wurtemberg. The motor, which is of the Daimler 4-h.p. type, is located in the rear portion of the vehicle. The carriage is provided with a hood, and is stated to be capable of mounting gradients of 15 per cent.

**Steam Omnibus Service at St. Etienne.**

IN our issue of the 17th ult. we referred to the formation of a company at St. Etienne, France, with the title La Compagnie Stéphanoise de Traction Automobile. We now learn that the Company is about to start a service of steam omnibuses in the St. Etienne district, and that it has placed an order with Messrs. De Dion, Bouton & Co., of Puteaux, for five vehicles. This Company has a much better showing than the London Steam Omnibus Co., who, after many months' existence, are apparently making no headway with steam vehicles.

**"Record"-Breaking in France.**

MOTOR-CAR records have been very much to the front in French motor-car circles for some time past. The battle has hitherto been waged amongst electrical *chauffeurs*, but now war has been declared in the *petrole* camp, M. Lemaître having announced his intention of shortly endeavouring to create the kilometre record for petroleum-spirit motor-vehicles. We wonder whether the 18-h.p. Peugeot car will be used for the purpose or whether a new vehicle will be built.

**Wheels for Motor-Vehicles.**

THE question of wheels for motor-cars continues to attract considerable attention as well in France as in this country. In their current advertisement La Carrosserie Automobile Vinet, of 35 Rue Brunel, Paris, give a long list of motor-car builders who have *exclusively* adopted the Vinet wheel, among which we notice the name of the Daimler Motor Co. We were rather astonished to find that this firm went to France for the wheels of their cars, and do not for one moment believe that this is the case.



### The Soudan Motor-Cars.

M. FELIX DUBOIS, who some time ago took out a couple of De Dietrich motor-vehicles to the Soudan, is back again in Paris. The Governor of the French Soudan, General de Trentinian, is preparing a report on the trials of the vehicles which is expected to be shortly submitted to the French Minister of the Colonies. The publication of the report is being awaited with interest in France, and it will doubtless also prove interesting to Englishmen and their Colonial brethren.

### Motor-Car Races in Paris.

UNDER the new regulations which will shortly come into force in France, the speeds of motor-vehicles, both in towns and rural districts, will be regulated within certain limits, and it will then become necessary to obtain official sanction before it will be possible to conduct road races. The Union Vélocipédique de la Prefecture de la Seine has, however, a new idea for contributing to the feverish madness of the French nation for high-speed motor-car races in the neighbourhood of Paris. The idea is to utilise, if possible, the Longchamps race-course, hitherto sacred to the horse and occasionally to a hippomobile vehicle. With this end in view the Union has sought permission of the Paris Municipal Council to hold a motor-car race on this course early next month, and, extraordinary to relate, the Council, on the motion of Monsieur Max Vincent, has given the necessary permission, and the race is fixed to come off on May 7th next. We wonder how many years will elapse before Kempton Park race-course, or those of Sandown and Goodwood, are utilised for such a purpose.

### An Unlucky Road.

THE road from Frejus to Cannes is often reputed to be the most unlucky road in France. Almost daily it is the scene of disaster, bicycles, horse-drawn vehicles and motor-cars being equally unlucky on this road of evil repute. Last week, in one day, two accidents were reported within a very few minutes of each other. In the first a motor-car collided with a horse-drawn vehicle which a lady was driving. She was thrown out on to the road and severely injured. Only a few minutes had elapsed, and within a few yards of the same spot another motor-car collided also with a horse-drawn carriage which contained three people. On this occasion, fortunately, nobody was very seriously injured, although bruises and contusions were plentiful. The carriages in both cases were materially damaged.

### Motor-Cycle Race at the Parc des Princes.

THE result of this race, which was over a distance of 20 kilometres, was that Barras was the winner, Vasseur being second, and Rigal third, neither Griet nor Beconnais being placed. The winner's time was 21 mins. 57 $\frac{3}{5}$  secs. Previous to this contest, three electrical tandems were pacing the competitors in a cycle race, and the change when these went off the track and the motor-tricycles appeared was extraordinary, the silence of the one type being emphasised by the noise of the other. An amusing feature of the contest was the dresses worn by the various competitors, freedom being allowed in this particular. Barras wore a silk cap, Griet a woollen bonnet, Rigal and Beconnais hideous jockey caps, whilst the other competitors' head-gear was much more noticeable by reason of its variety than by its beauty. The audience being in waiting, the competitors lined themselves up in front of the starter, and it was then noticed that Jacquelin was not amongst the starters, although he had entered. As soon as they were fairly on their way Barras immediately rushed off with the lead, easily outstripping the remaining competitors. Rigal ran next, but Barras overlapped him before three turns were made. The speed was

something frightful, and it was lucky that no accident occurred, or the disaster would have been fearful.

### Concluding the Nice Carnival.

THANKS to Monsieur Albert Gautier, the automobilists taking part in the Nice races had an agreeable day's rest on the 27th ult., for Monsieur Gautier, who is the leader of automobilism on the Côte d'Azur, invited the *chauffeurs* to a banquet at his splendid villa at Cimiez, quite close to that occupied by Her Majesty the Queen of England. Amongst the numerous guests were Baron de Zuylen, the Count Biscarelli, Count di Ruffia (president of the Automobile Club of Italy), Monsieur Jacques Gondom (president of the Automobile Club of Nice), Monsieur Paul Meyan, Baron de Dietrich, Prince Lubecki, and many other well-known men in automobile circles on the Continent. Monsieur Gautier made a thoroughly humorous speech, as he generally does on such occasions, and alluded to the wonderful improvements and advances in automobile road carriages, and further remarked upon the tremendous increase of speed which it was possible to obtain on these vehicles, and which apparently was being increased day by day with no present indication of its having reached the limit.

### A Belgian Solution of the Voiturette Problem.

AN Antwerp firm—M. Pitteville, of Rue de Scorpion—who have lately taken up the construction of motor-tricycles fitted with the "Aster" petroleum-spirit motor exhibited a drawing at the Liège Cycle and Motor-Car Exhibition of a new light motor-voiturette they are about to put on the market. The vehicle, which has a very graceful appearance, will be fitted with an "Aster" motor. The "body" of the vehicle is suspended on the frame by scroll springs. The weight complete is stated to be about 4 cwt., and the cost from £100 to £120.

### A Belgian Motor-Car Parade.

AFTER the close of the recent Cycle and Motor-Car Exhibition in Brussels a parade before the rooms of the Belgian Automobile Club of the motor-cars exhibited was organized. Owing to the bad weather, however, only three vehicles—two Henriod cars and the Koch heavy-oil-car—put in an appearance, the *chauffeurs* in charge afterwards going for a run to Forest.

### The Pieper Car: A Distinct Novelty.

AT the Cycle and Motor-Car Exhibition at Liège, which closed on Monday last, a novel form of motor-carriage was exhibited by the Société des Établissements Pieper, of that city, which we hope to fully illustrate and describe in a subsequent issue. In the meantime we may state that the novelty of the vehicle, which is a two-seated carriage, consists in it being provided with both a petroleum-spirit motor and an electro-motor, with a battery of accumulators. The petroleum-motor is located in the front portion of the vehicle, and is connected to the electro-motor by means of a flexible shaft. From the brief particulars at our disposal at the moment, it is not possible to fully describe the action of the combination, but it would appear that to put the vehicle in motion the electro-motor is first started, taking current from the accumulators; the electro-motor, by means of the flexible shaft, thus putting the petroleum-spirit engine in motion, consequently obviating any necessity of pulling round the fly-wheel or turning a handle. When the petroleum-motor is in action the accumulators are switched out, while on level roads or down-hill runs, when the full power of the motor is not required for propulsion purposes, the supply of explosive mixture is not varied, but the change-speed handle is put on



low-speed, the excess of power being utilized to re-charge the accumulators. In addition to the starting of the petroleum engine by means of the electro-motor, another advantage is claimed for the combination in that, should the supply of petroleum-spirit run out, the two motors—petroleum and electric—may be disconnected, and the accumulators (which have a 25-mile capacity) switched in, and thus the run can be continued without having to search for an oil store. We are sure that our readers, like ourselves, will await further particulars of the Pieper car with interest.

#### Another Belgian Solution of the Voiturette Problem.

WE have received a rough drawing, which unfortunately does not lend itself for reproduction of the new two-seated light motor-voiturette which is being put on the market by the Fabrique Nationale d'Armes de Guerre, of Herstal near Liège, Belgium.

The vehicle has a very neat and comfortable appearance, the frame and body being supported on the axles by strong plate springs. The motor, which is located in the front of the vehicle, is of the vertical twin-cylinder petroleum-spirit type; it is stated to develop 3 h.p., and weighs about 1 cwt.; electric ignition is employed, while for cooling purposes the cylinders are furnished with *ailettes* or radial discs. The power of the motor is transmitted by belts to an intermediary shaft, and from the latter to the rear road-wheel axle by the usual sprocket wheels and chains. The variable speed-gear is controlled by a single handle mounted on the steering standard. The vehicle complete weighs from 4 to 5 cwt., according to the carriage-builder's work desired. The Fabrique Nationale is also, we learn, engaged on the designs of a new four-seated vehicle provided with a 6-h.p. motor. We hope to illustrate both types in an early issue.

#### The Paris Electric Cab.

PARIS has been in some excitement over the advent of the long-promised electric cab on its streets. In some measure the expectations and anxious anticipations have been fulfilled, but unfortunately have not given complete

satisfaction. During the fine and mild days following Easter everybody was on the look-out for one of these electro-mobiles. To their great sorrow, however, exceeding many have had to put up with disappointment, owing to the fact that the French Electric Cab Company only placed some twenty vehicles on the streets for hire. This number divided amongst two and three-quarter millions of people, a large proportion of whom are, according to Parisian custom, cab hirers, did not go very far. It is evident that at the present moment the Parisian *cochers* are not yet to lose their livelihood owing to the competition of the new-born *chauffeurs*.

#### Pau-Bayonne-Pau Race.

THE whole of the Parisian *chauffeurs* who visited Nice last month did not come back directly to Paris, on their return making a tour. For this reason the Automobile Club, Bearnais, organized a match which took place on

Wednesday, the course being between Pau and Bayonne, and a return to Pau, a distance of 206 kilometres. The race was largely subsidised, and prizes to the value of 5,000 francs were awarded; in addition the Michelin firm added a special prize of 600 francs which was restricted to those competitors who made use of the Michelin tires. The roads were said to be in good condition, and very high speeds were probably obtained, as the itinerary is rather level. Monsieur Lemaitre, who three times defeated Monsieur Giraud at Nice, was looked upon as the winner. The competition was extended to several classes of vehicles. The competitors were as follows: Class A (motor-tricycles)—Rigal, Béconnais, Vasseur, Pinaud, Magendie, Marcellin, Wuillaume, Bertin, Ducom, Plocque, F. Favier, Demester, Janet, Joyeux. Class B

(motor-tricycles, amateurs)—Debacker, Géo, Labadie, Cuzac, Couderc, Dumoulin. Class C (voiturettes)—Noé Boyer, Merle. Class D (two-seated cars)—Leys, Giraud, Albert Lemaitre. Class E (four-seated cars)—Renouilh, de Gallifet, Barbereau-Bergeon. Class F (six-seated cars)—Cascault, Menjou, Lafitte.

#### More Accidents at Nice.

UNFORTUNATELY the continuity of accidents with motor-cars at Nice still exists, a most serious example occurring during the present week on the Promenade des Anglais. A *chauffeur* driving a motor-car was proceeding from Magnon Bridge to the Promenade Wharf when he tried to pass a four-horsed coach whilst passing the front of the Elysée Hotel. Unfortunately, however, he collided with it, with the result that the car was overturned, the spirit took fire, and the car was at once in flames, together with the unfortunate rider also, whose clothes had become plentifully sprayed by the spirit forced out upon him. To add to the chapter of accidents, at this moment a motor-tricycle also came by, and deliberately ran into the overturned motor-car, and, gliding off it, also ran over the burning *chauffeur*. The motor-tricyclist was violently projected over the handle-bar of his machine, but fortunately escaped with comparatively slight injury. The bystanders, of course, rushed to the assistance of the burning *chauffeur*, every endeavour being made to put out the flames by means of rugs, etc.; unfortunately, however, their success was not sufficiently speedy to save the *chauffeur* from extremely serious injuries. Another accident occurred on Tuesday, at three o'clock, on the Hill of Ville d'Avray. A motor-tricycle and a motor-voiturette, in the latter of which two ladies were riding, were proceeding at a high speed on the hill, when a company of non-commissioned officers of artillery was met proceeding in an opposite direction. Unfortunately one of the officer's horses shied, with the result that the voiturette was unable to avoid the horse, and crashed violently into it. The shock, of course, was severe, and the horse fell backwards on its rider, who received extremely serious injuries to his legs and arms; the horse had two legs broken, and was ultimately removed in an artillery wagon. The ladies in the voiturette had a most marvellous escape; they were both projected out of their vehicle, but fortunately fell on thick grass, and sustained practically no injury. The voiturette, too, most curiously escaped without injury, and the ladies remounted their vehicle and proceeded on their way to Versailles, their original destination.

#### Fool-hardiness and Accidents.

ANOTHER serious accident has been reported to have occurred on Tuesday evening, at Villeneuve (Yonne). It appears that Monsieur Devoir, a physician, bought, a few days ago, a motor-car of 6 h.p. He, together with the driver of the firm who sold the vehicle and his own coachman, together with a mechanical engineer named Dechambre, went out on a trial trip with a view of instructing the coachman in the management of the vehicle. As is so frequently the case in France, the professional *chauffeur* entrusted the driving and steering to the coachman; as is also frequently the case with novices, the coachman desired to proceed at a much greater rate of speed than was conducive to safety in view of the fact that the control of the car was in the hands of an inexperienced person. The *chauffeur* several times desired to take over the control of the car, especially in view of the fact that the gradients of the road traversed were very severe, and that in addition the road was constructed on the brink of a precipice. The stubborn coachman, however, persisted in a refusal, and continued to drive at a speed of quite thirty miles an hour down a gradient of 1 in 14. The irregularity of his steering frequently brought him perilously near the edge of the

precipice, and on one occasion, in order to avoid the danger, he turned in the reverse direction too quickly, with the result that the vehicle collided with the pathway embankment and was immediately overturned, the whole of the riders being violently thrown out. It is reported that both the physician and Monsieur Dechambre are very seriously injured, whilst the coachman who caused the accident escaped with only a few bruises. The motor-vehicle was entirely wrecked by the violence of the shock and the subsequent overturning.

#### A Curious Accident.

A VERY peculiar motor-car accident occurred on Tuesday in front of the School of Arboriculture at St. Mande, a Parisian suburb. The driver was investigating the cause of a sudden stoppage of his vehicle, when without warning the carriage became completely enveloped in flames, the passengers only dismounting with considerable difficulty, and after suffering from scorching and burns. The driver fortunately found a public pump close at hand, and, placing the front of the vehicle under the pump's mouth, gave the lever four or five vigorous strokes in the hopes of putting out the flames; his efforts, however, were not successful for some short period. The accident arose owing to the spirit leaking into the pipe which supplied air to the explosion chamber of the cylinder. It is reported that this occurred owing to the heavy descent which the car was negotiating at the time. The car, of course, had to be removed by the aid of horses, and the *chauffeur's* disgust at steering his car whilst it was being drawn by the led horses, was manifest to all who chanced to meet the unhappy individual.

#### The Fourth Anniversary of the Long-Distance Motor-Tricycle Races.

THE fourth annual occurrence of the long-distance trials has taken place over the Paris-Roubaix course. The competition this year was a particularly brilliant one, as no fewer than fifty-seven competitors fought for victory. The start took place at nine o'clock in the morning, and the fifty-seven competitors at once rushed forward, amidst a perfectly deafening noise, enveloped in an impenetrable cloud of dust. The distance was 268 kilometres, and this was covered by the winner, Monsieur Osmont, in 5 hours 35 min. 30 sec. This is at the rate of 48 kilometres per hour. The following are the first twenty-seven competitors—it will be seen that the twenty-seventh man took 10 hours 59 min. to complete the journey, or within a few minutes of double the time occupied by Osmont:—

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Osmont, 5 h. 35 m. 30 s.    | 15. Son, 7 h. 30 m.          |
| 2. Béconnais, 5 h. 45 m. 15 s. | 16. Lamon, 7 h. 35 m.        |
| 3. Girardot, 6 h. 2 m.         | 17. Nicolas, 7 h. 38 m.      |
| 4. Vasseur, 6 h. 9 m. 10 s.    | 18. Griet, 7 h. 46 m.        |
| 5. Caron, 6 h. 24 m. 30 s.     | 19. Weidenfeller, 7 h. 48 m. |
| 6. Rolland, 6 h. 31 m.         | 20. Renoire, 7 h. 55 m.      |
| 7. Baras, 6 h. 36 m. 45 s.     | 21. Christophe, 8 h. 21 m.   |
| 8. Hugues, 6 h. 54 m.          | 22. Lopard, 8 h. 24 m.       |
| 9. Echalie, 6 h. 57 m.         | 23. Gardon, 9 h. 2 m.        |
| 10. Prince, 7 h. 2 m.          | 24. Courbe, 9 h. 8 m.        |
| 11. Oury, 7 h. 3 m.            | 25. Tisci, 9 h. 50 m.        |
| 12. Lepoutre, 7 h. 20 m.       | 26. Quantin, 10 h. 34 m.     |
| 13. Bar, 7 h. 24 m.            | 27. Chenard, 10 h. 59 m.     |
| 14. Ducom, 7 h. 25 m.          |                              |

#### The Alcohol Competition.

DURING next week experiments will be carried out in Paris to ascertain decisively the results to be obtained by the use of alcohol motors on motor-vehicles. Although chemists and others interested in the production of alcohol have taken considerable interest in the matter, the French constructors of motor-cars apparently do not feel the same amount of interest. This may, of course, arise owing to the difficulties inherent to the production of a workable motor driven by alcohol, from a commercial point of view. The first trial takes place on Tuesday, the 11th inst., and the following constructors have entered:—De Dietrich (one

vehicle), Société "La Jeanne d'Arc" (one vehicle), the Henriod Co. (three vehicles), Noé Boyer & Co. (two vehicles), and Guttia & Co. (one vehicle). There are thus eight vehicles entered, but probably all will not start. The competitors have to meet at 10 o'clock in the morning, the start taking place at 10.30. The route selected is Paris, Chantilly and Paris. The main object of the competition is to ascertain whether a vehicle propelled by a motor actuated by alcohol can travel so long a distance as the same vehicle would traverse with a motor of similar power actuated by petroleum-spirit; incidentally, endeavours will also be made to ascertain what proportion of air is necessary to secure the best results, and also to enquire whether the ordinary form of carburettor such as is used with petroleum-spirit is also suitable for use with alcohol. If the competition is managed by competent engineers, any information towards the solution of these problems will be welcomed.

#### The Third Competition of Motor-Tricycles.

THE third annual competition over a hundred kilometres for motor-tricycles will be run off on April 18th, between Etampes, Chartres and Ablis. The entrance fee is twenty francs, and the four first prizes are as follows: One thousand francs, five hundred francs, three hundred francs, two hundred francs. The competitors will have the service of signalmen at all risky crossings, a green flag signifying that it is considered advisable that speed should be slackened, and a red one being displayed when a stop is considered imperative. Competitors will not, however, be compelled to regard these signals; they are given in the riders' interest, but obedience is not compulsory. Thirteen competitors have already entered; these are as follows:—1, Léon Bollée; 2, Jamin; 3, Ajax; 4, Bardin; 5, Teste; 6, Osmont; 7, Et. Giraud; 8, Rigal; 9, Béconnais; 10, Léonce Girardot; 11, Vasseur; 12, Sphinx; 13, Louis Piétri. It will be remembered that Monsieur Leon Bollée won the last year's competition with an 8-h.p. machine, but at such a terrific speed as would appear to place the rider's life in serious peril. We wonder who will be the next to imperil his life in this dangerous competition.

#### A Motor-Car Museum.

THE Committee entrusted by the French Automobile Club have had the idea for some time past of forming a historical exhibition of ancient motor-vehicles. In this connection it has approached Colonel Laussedat, the Director of the Conservatoire des Arts et Métiers, and has received a sympathetic reply, assuring the Committee of his assistance. He incidentally mentions that the progress of automobilism in France under the ægis of the Club represented by the Committee naturally compelled him to give his support, and in regard to the only example of mechanically-propelled road-carriage in the Museum under his direction—Cugnot's—expresses his readiness to place it and the records concerning it at the disposal of the Committee for their investigations.

#### A New French Solution of the Voiturette Problem.

WE referred at some length in our last issue to the demand for a "voiturette" or light carriage whose motor must not necessarily be started by pedals, and whose cost should range from £100 to £140. *La Locomotion Automobile* in its last issue to hand illustrates a new vehicle known as the "Victoria Combination," which has just been put on the market by La Société des Voitures Automobiles La Parisienne, of 71 Avenue de la Grande Armée, Paris, as an attempt to meet the demand above alluded to. The vehicle is a result of the combination of a motor-tricycle and trailing-car. The motor—a 1½-h.p. De Dion—is mounted, together with the transmission mechanism,

on a front pair of cycle wheels, thus forming an *avant-train*. Behind this is a trailing-car, the frame of which is mounted on the front pair of wheels by means of a "head" on the lines of that adopted in cycle construction. A long steering-handle is provided, on the end of which are fitted the small levers controlling the electrical ignition and the mixing valves. The vehicle, which apparently is only intended to carry one person, is stated to cost but very little more than a motor-tricycle with trailing-car. We hope to give an illustration of it in an early issue, but apparently the motor will prove the stumbling-block, as it does not appear that it will be sufficiently powerful to meet the demands of either French or English riders for speed.

## CORRESPONDENCE.

### THE SPEED OF THE MORS CAR VERSUS THAT OF MR. WRIDGWAY'S TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am sorry to have to refer again to the same matter, but I certainly must object to the way in which Mr. Wridgway "writes up" his motor-tricycle, which should be publicly known as a French machine built from start to finish in France, and not, as falsely stated, built somewhere in Coventry. On neither of the two occasions to which he refers was there the slightest idea of an impromptu race between my Mors car and your correspondent's tricycle.

In the first instance it was a friendly match between Mr. S. F. Edge's Panhard car and my Mors car, in which I easily won, gaining over 30 seconds to the mile. I did not even know your correspondent then, nor had I ever met him before.

The second time I met him just outside Liverpool, at Widnes, on the day of the trial run, where I stopped for a broken chain. Your correspondent arrived there long after me, pedalling hard, his tricycle *hors de combat*, the electric current being short-circuited. Although he stated recently in a letter to one of your contemporaries that even on the day of the big gale in Liverpool "his induction coil, being wrapped up with a piece of rubber, gave him absolutely every satisfaction," yet he had to stop there for about an hour before he could dry his electric ignition device and start again. Later on, on the return journey, he, being unable to proceed during the gale, had taken shelter with another tricyclist (who fully corroborates my observations on this date), and took advantage of the passing Mors to "hang on," as he chooses to call it, that is to say, to be dragged by the vacuum naturally created by a car of this size, and so to spoil incidentally the tail-board of my car. At the entrance of the town, however, where it was necessary for me to slacken my pace in view of the traffic, your correspondent left the (until then so welcome) shelter of my car, only showing his nerve (?) afterwards in calling this an impromptu race, and stating that he arrived a quarter of an hour before me, forgetting, of course, to mention that he left the starting point (Widnes) fully an hour before I did.

So much for your correspondent and the value of his statements.

Yours faithfully,

March 29th, 1899.

ED. E. LEHWESS.

### ANOTHER PENNINGTON CHALLENGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Edge admits his connection and interest in the Paris Singer, the Aerial, and the Dunlop-Dion Motor Companies, which shows that we were right in our conjecture that he should not pose or be treated as an impartial contributor on motor matters. Some of the concerns he admits being connected with profess to be under licence from the British Motor Company. We presume, therefore, we were right in inferring that he is also—at least indirectly—interested with Mr. Lawson or the British Motor Company.

As Mr. Edge has the motor industry so much at heart, we should like to test his sincerity by matching our 110-guinea single-cylinder car against any other single-cylinder four-wheeled car of the same diameter cylinder, the product of any of the above companies or of the British Motor Company; or, failing all these, any other car he may be able to furnish which is marketed at anything under 150 guineas. Both cars to carry two passengers of equal weight side by side, and the distance to be from Aberdeen to London—about 500 miles. *Moreover, we will handicap our car to arrive in London before the competing car arrives at Northampton.*

To make the conditions absolutely fair, and to show that our cars are the simplest and offer no difficulty in their management, we would stipulate that the competing cars use the same oils, both for running and lubricating, and that the driver in each case shall have never even ridden on one.

Further, in order that there may be an opportunity of testing the merits of the Aerial-Patent-Dunlop-Dion-British-motor-tricycle, "made entirely in England," we would like to match one of our steel cylinder motor-tricycles of equal diameter cylinder and of equal gear for a hill-climbing contest, without the use of pedals, the weight of drivers to be the same, with a minimum of sixteen stone.

We would wish the amount of oil consumed in both cases and of the water for cooling purposes evaporated on the cars to be carefully noted, in order to show the vast superiority of our cars over all others in economy of fuel and the small amount of water required for cooling purposes.

Yours faithfully,

London, April 4th, 1899.

PENNINGTON & BAINES.

### THE SPEED OF MR. WRIDGWAY'S TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some time back Mr. Wridgway's statements as to the speed he could make on his motor-tricycle were questioned, but his Easter Monday performance at the Crystal Palace track when he beat the French kilometre record-holder, Mons. Rigal, and covered over twenty-nine miles in the hour is a very conclusive refutation to the persons who questioned Mr. Wridgway's word. This performance for a motor-tricycle on a track would be equal to about thirty-five miles an hour on a "straight away." The vast concourse of people who flocked to this meeting is strong testimony of the interest taken in motor races in England, and we hope to see considerable developments in this line, especially as the law prohibits fast speeds on the highway.

Yours faithfully,

London, April 4th, 1899.

PENNINGTON & BAINES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I venture to call your attention to what seems to be a mistake in your Journal (p. 50) of the 31st ult.

The article, speaking of the "Bollée" voiturette, says: "This has been discredited in both France and England because some 'know-all' thought it wise to place an exhaust valve on top of instead of underneath the motor." I am in no way interested in the "Bollée" beyond having been the owner of one (a Paris-built one) for over two years, and in my machine and in all the machines I have seen the exhaust valve is immediately under the cylinder. It is true that the spindle and spring of the air-inlet valve are in a small plated box above the cylinder, the cover of this box being perforated with holes presumably to keep the spring and spindle cool, as no appreciable amount of air can be drawn in by this road, the spindle working closely in a tube. The air-inlet is below and on the inner side of cylinder.

I have never had the slightest hitch with the valves themselves, and my machine has had plenty of use. The only trouble has been with two small rivets connected with the driving pulley, which have given way with me twice owing to the parts being so closely packed together as not to

leave room for good heads on the rivets; but I trust I have now overcome this fault by using screw rivets.

The cooling of the cylinder, as your article points out, is certainly the problem. The iron flukes, to my mind (adding so much to the mass of the metal in the cylinder), rather serve to retain the heat, and the cylinder would cool as soon without them. I have managed the cooling perfectly by allowing cold water to leak slowly over the cylinder while running, but this means stopping every twelve or fifteen miles to fill up one's tank with water. If the road be good, I do not know her equal at climbing impossible looking hills. The great faults of the machine, in my experience, are (1) that the working parts are just a trifle too light perhaps, and (2) the difficulty of getting at the interior machinery without dismantling the whole car.\*

Yours truly,  
C. R. H.

### "THE FASTEST CAR IN THE COUNTRY."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We notice that repeated reference has been made in your columns to the Mors challenge. Will you permit us to explain in a few words to your readers our position in this matter. On February 18th we issued a challenge stating that the Mors was the fastest car on the road in this country, and on the 25th of the same month Messrs. Pennington and Baines replied with the proposition for a hill-climbing contest, going up and down a certain hill a hundred times. As we were and are absolutely determined not to give Mr. Pennington the slightest chance to back out as he has done on previous occasions, we expressed our willingness to enter even this absurd contest, making only the condition that the engine on the respective cars should not be stopped during the whole of the contest, foreseeing that the water circulation in Mr. Pennington's engine would be in no way effective. This condition did not allow him to cool his motor, but it sufficed to cool his ardour for the proposed contest, and we heard no more about it. Then he came out with the proposed run of 500 miles in France, and we hope sincerely that this trial will come off; and, at least so far as we are concerned, we shall endeavour to see that Mr. Pennington does not let this opportunity slip as he has done with his previous challenges which he issued to the world some time ago when he brought his first machine on the English market. *We are willing to enter either one or five carriages, a racer or an ordinary touring car, just as Mr. Pennington may wish.*

We should like to use this opportunity to correct a logical error of your Scotch correspondent, "Brown Heather," who finds that in Scotland there are people who object to a two-cylinder Pennington car racing a four-cylinder Mors. We fail to see how the number of the cylinders can be taken as a criterion of the actual power of the car; so, to satisfy your correspondent, we should have matched the new 10-h.p. two-cylinder Mors car against Mr. Pennington's two-cylinder car with even a better chance of our winning, but we selected our ordinary four-seated dog-cart for the reason that many cars of this type are daily used by motor-carists all over the kingdom, whilst Mr. Pennington's car has yet to give proof of its commercial value, and would therefore gain a magnificent advertisement, if it proved its potential value, by beating the fastest cars in England—the Mors.

THE AUTOMOBILE ASSOCIATION, LTD.

Princes Road, Holland Park Avenue,  
London, W., April 5th, 1899.

OWING to the increasing demand for capable drivers of motor-vehicles in Vienna, there is a talk of establishing a training school in the Austrian capital.

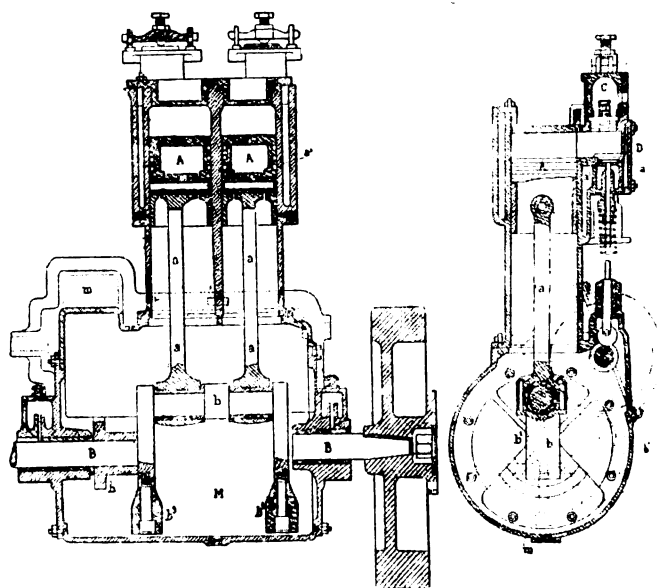
A FRANKFORT-AM-MAIN correspondent informs us that motor-cars are steadily gaining in popularity in that town, there now being over fifty vehicles in use in the district.

\* We answer our Correspondent in another column.

## THE NEW MORS VERTICAL PETROLEUM-SPIRIT MOTOR.

—8—

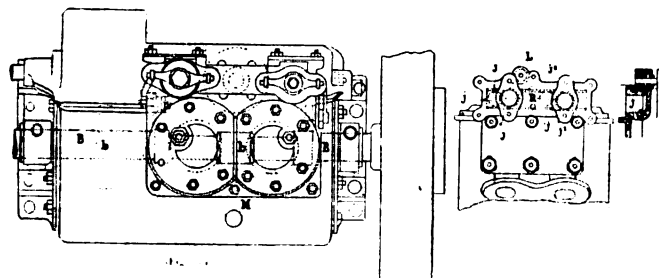
IN our issue of March 10th last we gave an illustrated description of the new two-seated carriage fitted with a 4-h.p. motor, comprising two cylinders set at an angle to each other, constructed by the Société d'Electricité et d'Automobiles Mors, of 48 Rue du Théâtre, Grenelle, France, the larger vehicles of this Company being, as is already well known, provided with a 4-cylinder 6-h.p. motor. We now learn that the Mors Co. is constructing still a further type of motor for more powerful vehicles, of which we are herewith able to present several illustrations, together with a description. The new motor is of the vertical twin-cylinder type, and is capable of working up to 8 h.p. Referring to the illustrations, Fig. 1 is a sectional elevation, Fig. 2 a cross section through one of the cylinders, Fig. 3 a plan, Fig. 4 a view of the admission valve gear, Figs. 5 and 6 are sections of the exhaust valve control gear, and Fig. 7 a detail view of the gear controlling the electric ignition. The motor works on the ordinary Otto cycle, the two piston rods *a a* (Fig. 1) working on to the same crank *b* on the crank shaft *B*, the crank *b* for balancing purposes being provided with counterweights *b<sup>3</sup>*. The admission and exhaust valves *C D* in each cylinder are arranged one above the other (Fig. 2), so that they may be readily accessible. The exhaust valve and the cylinder walls, to the extent of the stroke of the piston, are water-jacketed for cooling purposes.



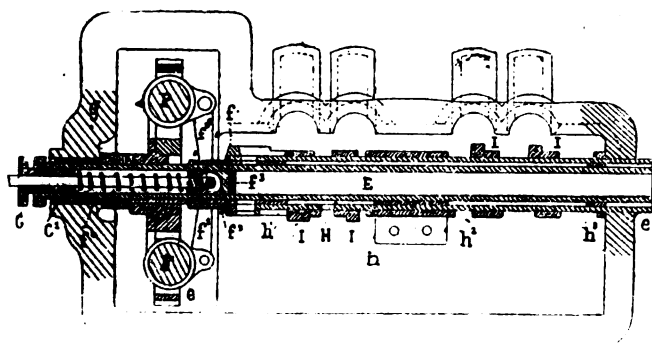
FIGS. 1 AND 2.—SECTIONAL ELEVATIONS OF MOTOR.

A feature of the new motor is the cam gear controlling the opening of the exhaust valves. The motor shaft *B* (Figs. 1 and 2) is connected by reducing spur wheels *b<sup>1</sup> b<sup>2</sup>* to a gear wheel *c* keyed on a hollow shaft *E* running above and parallel to the motor shaft the whole length of the motor. On the hollow shaft *E* (Fig. 5) slides a bush *f* of a centrifugal governor, the balls *F F* of which are placed in openings in the wheel *c*. The bush *f* is keyed on the shaft *E* in such a way that while it rotates with it it is free to slide along the shaft. The two balls of the governor are connected to arms *f<sup>1</sup>* which in turn are connected to a rod *f<sup>2</sup>* which passes through the hollow shaft *E* and through a special piece *f<sup>3</sup>* fixed, but free to slide backwards and forwards in the hollow shaft. This piece *f<sup>3</sup>* is carried on one end of a rod *f<sup>4</sup>* the other end of which is free to slide through a plug-nut *G*. The bush *f* acts as one half of a small friction clutch, and when moved forward grips the other half of the clutch formed solid with a second tubular shaft *H* surrounding the shaft *E* (Fig. 5). It is on the shaft

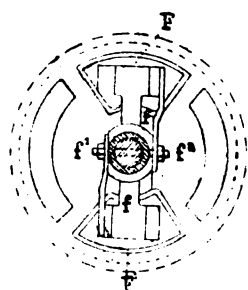
*H* that the cams controlling the exhaust valves and the electrical ignition are mounted. The exhaust valves are opened by these cams in the usual way by means of the valve rods, on the end of which are rollers in continuous contact with the cams (Fig. 2); the ignition-control device is shown in Fig. 7. Coming now to the action of the governor on the cam-driving gear, a spring *g* is provided on the rod *f*<sup>4</sup> (Fig. 5),



this spring maintaining the bush or clutch *f* in contact with the other half of the clutch on the shaft *H*, thus driving the latter and the cams mounted on it so long as the speed of the motor does not exceed the normal. When the speed becomes excessive, the balls *FF* of the

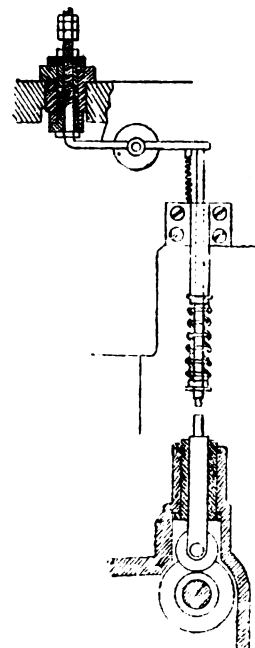


governor fly open, causing the bush *f* to move backwards against the spring *g*, and consequently breaking the connection between the shafts *E* and *H*. In this way, the cams fail to act on the exhaust valve stems until the speed has once more attained the normal, when the bush *f* again returns

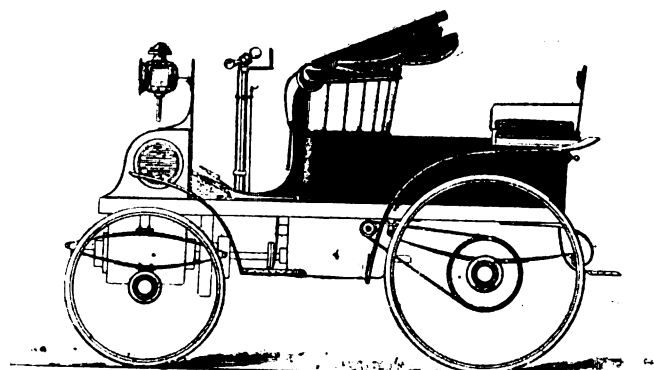


into contact with the shaft *H*. The advantage claimed for the new device is that instead of allowing the cams to continue rotating and stopping their action on the exhaust valves by other means when the speed of the motor becomes excessive, the cams themselves are thrown out of action, and at the same time the electrical ignition device is put out of gear, so economizing current. The special cam gear is only intended to maintain the speed of the motor at a rate previously decided upon, any change in the normal speed being controlled in the usual way by varying the quantity of the explosive mixture. To effect the latter, a special form of

obturator is introduced in the admission pipe, by means of which the quantity of explosive mixture admitted can be varied. These obturators consist of a thin plate sliding transversely in the admission pipes, and so adjusted that the



joint is air-tight. These thin plates are provided with two openings of a shape equal to the section of the admission tube, also a triangular-shaped part *j*<sup>1</sup> (Fig. 4). The displacement of these admission-regulating plates is effected by means of a small pinion *L*, gearing with a rack formed on the end of the plates *J*. It will be seen that according to the position of the plates in the admission tubes the quantity of explosive mixture allowed to pass can be varied from zero up to the maximum capacity of the tube. The advantage claimed for this device is that the carburettor is not interfered with in any way, and that consequently the hydro-carbon formed is utilised to the maximum degree.



The whole of the cam shaft and its controlling gear are enclosed in the oil-containing case *M*, in which the crank shaft works, a small removable cover being provided at *m* (Fig. 1), so that the various parts may be readily accessible. Fig. 8 gives a diagrammatic view of one of the latest Mors four-seated phætons, which is to be shortly imported into this country by the Automobile Association, of Holland Park Avenue, W., the agents for the Mors Co. in the United Kingdom. The motor employed in this vehicle is capable of developing up to 10 h.p.



## THE ELECTRIC MOTOR-VEHICLE.\*

BY C. E. WOODS.



FOLLOWING a very complete and interesting introduction giving the defence for the name "motor-vehicle" and the various types of vehicles manufactured, as well as the present status of the art abroad, the author makes the remarkable statement that twenty thousand carriage makers are required to-day to fill the market demand for vehicles in the United States as required for road and street transportation. A little over 30 per cent. of the total animal power used in this transportation is required in the cultivation of the soil to obtain fuel for this power and to transport such means of maintenance and stable refuse from point to point. This means, broadly speaking, that animal power has in itself but about 70 per cent. efficiency in its application. Further, horse power cannot be worked at a greater average than about five hours or twenty miles per day, which as compared with mechanical applications of any form puts such power into a very low figure of utility. Under such conditions of operation, this power unit has a depreciation of not less than 20 per cent. per annum, and from large users of horses in express companies, large liverys, etc., the depreciation has been given as about 33 per cent.—either of which figures is far in excess of any of our good mechanical or electrical propositions of the day.

These startling facts and figures bring us very close to an understanding of the possibilities in the motor-vehicle as an industrial feature, and we cannot under such circumstances deny the brilliant outlook it has for the future. The sanitary conditions attendant to its use, its lesser cost of maintenance, its greater mileage capacity, its more rapid transit, its lesser space occupied in the stable and on the street, its freedom from expense when not in use, all put together eliminate entirely the objections which at first appear as to its greater initial cost. The possibility this vehicle opens up for road and street improvement and the low cost of maintenance of same should be items of great interest to municipalities, counties and States. Streets will have a capacity for double the amount of vehicles without any increased congestion, will be freed from the continual pecking of iron feet, which are the main causes of their rapid deterioration, and sewers will perform their functions without being continually clogged up with refuse matter.

But to come from speculation to reality. The greater first cost of these vehicles is a necessity which is very readily understood; as the vehicle part itself, for the first item, is necessarily more expensive for the reason that when it comes to carrying twice or three times the weight in the vehicle ordinarily carried to running it twice or three times as fast as the horse-drawn vehicle under exactly the same conditions of road and street, it means quite a different proposition in vehicle construction without reference to its electrical and mechanical features.

I remember in my first early experience the disappointments which arose in regard to weights, constructional features, controls, etc., and three years ago I thought it would never be possible to build a motor-vehicle with any mileage capacity at all at a less weight than 1,800 or 2,000 pounds, yet to-day I have vehicles in operation which weigh 800 pounds including everything, and have a mileage capacity of about 28 miles on one charge of the batteries. My work has also developed the fact that as great a range in different vehicles can be obtained as regards size, usefulness, etc., as in any of the prior lines of vehicles, and I have found that for a diversity of design covering nearly thirty different styles of vehicles, the whole proposition is confined to what I call four different sizes of equipments. By this I mean four different sizes of motors, batteries, and so forth, which are as follows:

My lightest vehicle is equipped with one 2½-h.p. motor,

36 batteries of sixteen ampère hours' capacity for two hours, which runs the vehicle at a speed of fourteen miles per hour, carrying two people. The weights in all the construction work of this vehicle have been reduced to a minimum, the total weight of the batteries being 440 pounds, about 360 pounds being in the motor and vehicle proper.

(To be concluded.)

## MOTOR-CAR v. CYCLE.



THE record was closed in Aberdeen Sheriff Court last week in an action by William Cromar, a plumber, residing at 39 St. Swithin Street, against William Harper, the manager in Scotland of the Benz Motor-Car Company, Aberdeen, in which £500 is claimed as damages for injuries sustained. Cromar states that on Saturday, August 6th last, he, in company with two other cyclists, went for a run along the North Dee-side Road, crossing the Dee at the Maryculter Bridge. The party called at the Mill Inn, at Maryculter, and on leaving the inn had their attention occupied by a showman who was extolling the virtues of a strength-testing machine in the vicinity of the inn. A large crowd had gathered, and the pursuer, along with his friends, stood on the fringe of the crowd on the left hand side of the road. Whilst standing there a motor-tricycle car, driven by Harper, came sweeping down the road, upsetting Cromar and inflicting a compound fracture of his left leg. His bicycle also shared its owner's fate, though to a greater extent, being made practically useless. The pursuer, in consequence of these injuries, was for a considerable time unable to attend to his business, and contends that the accident was caused by the negligence of the defender whilst driving at an excessive rate of speed—twenty miles an hour it is averred. On the other hand, defender denies all the allegations, and contends that, as Cromar was injured through no fault of his own, or of anyone for whom he was responsible, he is not entitled to compensation.

WE learn that the Kölner Electricitäts Gesellschaft (late Messrs. Louis Welter & Co.), of Cologne, are about to take up the construction of electric motor-vehicles. New works are being established for the purpose, and it is hoped to commence building carriages by July 1st next.

MOTOR-CYCLE and motor-car races are just now very much *en evidence* in France. On Sunday there was a race from Montpellier to Toulouse; on Monday one from Paris to Roubaix; yesterday one from Pau to Bayonne and back; while to-morrow there is one from Pau to Perigueux.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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\* Abstract of a paper read before the Chicago Elec. Assn.

# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, APRIL 14th, 1899.

[No. 6.

Published by CORDINGLEY & CO., 39 & 40 Shoe Lane, London, E.C.

## COMMENTS.

### Saturday Tours of Motor-Cars.

THE Saturday tours recently organized by Mr. Hewetson at the wish of many owners of Benz and other cars are proving a great success. For to-morrow a tour has been organized to Effingham, the route being via Putney Bridge, Wimbledon, Kingston Vale, Kingston and Leatherhead. Afternoon tea will be served at the Blucher Hotel, Effingham, at 5 o'clock, and the return journey to London will be made by the above route. The place of meeting is Dean Street, Oxford Street, and the time of starting 2 p.m. On Saturday in next week, the 22nd inst., a longer tour is proposed. It is suggested that the tour should embrace both Saturday and Sunday. Bedford has been selected for Saturday's destination, both luncheon and tea being served at the Swan Hotel. Here Mr. D. Albone, of Ivel wheel fame, will join the party, and it is proposed to journey to Biggleswade in the evening, night quarters being secured at the Ivel Hotel. The return to town will be accomplished on the 23rd inst. Mr. Hewetson desires us to state that the presence of all motor-carists will be welcomed on these tours, and that if time cannot be spared by those participating, they need not necessarily adhere to the programme in its entirety.

### The Payment of Tolls by Motor-Vehicles.

NUMEROUS complaints have reached us as to the extortionate charges made by various toll-gate keepers and ferry owners for the passage of motor-vehicles. The Gainsborough Rural Council have taken the law into their own hands so far as the charging of tolls for their steam-roller is concerned at one of these objectionable toll-gates at Haxey. They instructed the driver of the road-roller that in the event of the toll-gate keeper demanding tolls he was to refuse the charges demanded, and to run his steam-roller through the gates, and so break them down. This order the driver carried out exactly, and the toll-gate was of course demolished. Although it is legal to charge motor-vehicles a toll, yet it appears that it is illegal to charge motor-vehicles employed in carrying out road repairs, hence the action of the Gainsborough Council. We would not advise motor-car drivers to take a similar course, although the demands of toll-gate keepers are frequently extortionate enough to cause such a course being taken.

### Automobile Club's Next Meeting.

THE committee of the Automobile Club had originally decided to hold the April house dinner at the club-house on the 12th inst., but this arrangement has been varied in favour of a much more enjoyable programme. It was next intended that on Saturday, the 22nd inst., the Club should have an afternoon run to Virginia Water, and that subsequently the house dinner should be served at the Wheatsheaf Hotel. The start was timed to take place from the club-house at 2.15 p.m., the return to town being accomplished either on the Saturday night or on the Sunday

evening, at the discretion of the participants. We now learn, however, that the Automobile Club intend having an all-day run to Frensham and back on Saturday, the 22nd inst., and that the dinner at Virginia Water is abandoned. This programme is certainly a very good commencement of the Saturday and Sunday tours to be carried out during the summer months. Several enthusiastic automobilists have written to us suggesting that we should advocate organized Saturday, or Saturday and Sunday, tours, and amongst other places suggested for the Saturday destination Sevenoaks, Tunbridge Wells, Horsham, Dunstable, Oxford, Newbury, Farnham, Basingstoke, Liphook, Eastbourne, Robertsbridge, Ashford, Canterbury, Aylesbury, Cambridge, Marlow, Chichester, and Haslemere have been proposed. We think, however, that we cannot do better than advise automobilists to participate in the runs organized by the Automobile Club, as we do not think the time is yet ripe for several distinct week-end runs of this description.

### The Liverpool Self- Propelled Traffic Association.

To the great regret of everybody concerned, the meeting originally arranged as the last of the present session of the Liverpool Self-Propelled Traffic Association has fallen through, owing to the inability of Messrs. Simpson and Bodman to deliver the paper promised for this meeting. As a consequence there will be no further meeting of this Association until the trials in September next, the entries for which we are informed are already fairly numerous.

### London Electric Cabs and the "Taxameter."

It has been announced in the daily papers that on the reappearance of the London electric cabs on May 1st they will be found to be provided with the automatic fare register known as the "taxameter." We are informed by the chairman of the Company, Mr. Walter C. Bersey, that there is at present no intention of fitting these appliances to the Company's vehicles; although the Company fully recognise their value, they do not think the present moment is suitable for their introduction on the electric vehicles.

### Motor Cars in Royal Parks.

MR. BOWLES, who never seems happy unless he is grumbling at something, recently vented his spite against motor-vehicles by proposing in the House of Commons, that such vehicles should be excluded from Hyde Park and other Royal parks. He characterised these vehicles as "those abominations called motor-cars," and held that they were "calculated" to frighten horses. Mr. Labouchere turned the tables upon Mr. Bowles by saying that this gentleman was evidently a timid rider and wanted Rotten Row to be turned into a circus—that he might pull up his horse in case of its running away with him. Mr. Labouchere added that when he had his circus Mr. Bowles wanted to exclude motor-cars therefrom as a further guard against his timidity. Mr. Akers-Douglas replied in the spirit which was to have been expected. He expressed his inability to see how a

motor-car could be excluded from these parks when it was a private carriage, simply for the reason that it was propelled by electricity or other power instead of being drawn by a horse. He, however, granted that it might be necessary to formulate regulations as to the pace at which motor-vehicles would be permitted to travel in such places.

#### Success of the North of England Public Motor-Vehicle Service.

WE recently chronicled the founding of a motor-vehicle service in Sunderland, and we now learn that this has proved so eminently successful that the same syndicate are considering the advisability of introducing similar public motor-vehicles in other districts of the north-east coast. The services suggested include one between Sunderland and South Shields, and another between Tynemouth and Blyth, Northumberland. Independent syndicates are at work with a view to establish services in Newcastle and its vicinity.

#### The Motor-Car Exhibition at the Agricultural Hall.

FROM the fact that no advertisement appears in the present issue regarding the holding of the Exhibition of Motor-cars promoted by the proprietors of this Journal it might be considered that the project had dropped. This is, however, far from being the case, and the absence of the advertisement arises from pressure on our advertising space. There remains only a few feet unallotted on the ground floor of the Agricultural Hall, nearly every maker of repute in the country who is ready to exhibit having already booked space. A large number of continental manufacturers and agents have also secured stands, and there is, we are glad to say, every promise of this being the most successful, as well as the largest, exhibition ever held in this country.

#### The New Post Office Delivery Vans.

LONDONERS have during the present week had the pleasure of noticing a further use of motor-vehicles by the Postmaster-General in conveying mails from the Post Office to various railway stations and other centres of distribution. The vans are thoroughly businesslike vehicles, very greatly in advance of anything that has yet been used for such purposes in England, and we congratulate the manufacturers of the machinery, the Daimler Motor Co., Ltd., and the builders and designers of the bodies, Messrs. Mulliner, of London and Northampton, on the excellence of their joint production. The vehicles are propelled by twin Daimler motors of 8 n.h.p., or 11 h.p. actual. The usual practice of placing the engines under a "bonnet" in the front of the splash-board of the vehicle has been departed from, and the practice of Messrs. Panhard & Levassor in constructing their light omnibuses has been followed, the motors being placed in a box under the driver's seat. We regret to state that the vehicles have not been purchased by the Post Office—they, in fact, forming a part of the ordinary vehicles hired for mail transport. The Daimler Motor Co. are the contractors in the present instance, and the following is a part of the specification to which they had to adhere in furnishing the vehicles as required by the Postmaster-General. The floor space is nine feet long and five feet wide, the height of the interior of the van being six feet. It was insisted that three vehicles should be provided, although two only are designed to be used at any one time, the third serving as a stand-by in case of break-down or other accident. We understand that the weight specified by the Postmaster-General has caused some considerable difficulty to the constructors, and even now, so we hear, it has been impossible to get the weights within the limit laid down in the specification. We have heard rumours that the vehicles are running beyond the rate of speed permitted by the Board of Trade regulations for vehicles of their weight, but at the time of writing we have been unable to gain con-

firmation of this report. In addition to the ordinary supply tank for water, it has been thought advisable to fit these vehicles with tubular heat-radiating water-coolers. By this means the quantity of water otherwise necessary to cool the four cylinders of the engines has been considerably reduced, with a corresponding reduction in the dead-load of the vehicle itself. We understand the Postmaster-General is considering the possibility of employing additional motor-vehicles for other routes, and we are glad to notice that at last one department of the Government is paying attention to the advantages of motor-vehicles as compared with those drawn by horses.

#### Fire at an Electric Charging Station.

JUST before Easter the electric charging station which has been established by Mr. Robert at Fisherton Street, Salisbury, for the convenience of drivers of electric vehicles visiting that town was the scene of a slight fire. The conflagration broke out in the engine house, and the engine itself, which uses oil as a fuel, was speedily in flames. At one time it was feared that a large tank of petrol might explode, but by the aid of a speedy use of the high pressure water supply available the fire was subdued without any very serious damage resulting. The charging station is now in full swing again, so that vehicles using electricity either as a motive power or for igniting gaseous charges can have their accumulators re-charged at this convenient station.

#### Ancient Motor-Vehicles.

IN the current number of *Cassiers' Magazine* Mr. Alfred R. Sennett contributes an article on horseless-carriages of four hundred years ago. It is hardly necessary to say that these horseless-carriages were always manumotive vehicles. The article is embellished by seven reproductions of drawings made by the celebrated Albrecht Durer. The article is an interesting one, and discusses, not too technically, the gearing proposed to be used with these vehicles. It is a moot question, however, whether any of these vehicles were ever constructed, or, if they were constructed, whether they progressed by manual power. The vehicles are extremely ornate in design and in decoration, whilst to modern ideas the dresses of those supposed to be operating the vehicles are essentially unsuited to the task which is to be fulfilled. As a matter of historical research the article is entertaining, but from a practical point of view it has very little utility.

#### May Meeting of the Motor-Car Club.

WE are glad to notice that the Motor-car Club has, since its emancipation, emerged from the gloom with which its transactions were enveloped in the past. Under the guidance of Committee, ably aided by Mr. F. W. Bailey, the Hon. Secretary, a programme of some definite form and some considerable interest has been drawn up for fulfilment during the coming summer season. The first of the series of events will take place at the Crystal Palace on May 6th next, and we may remark incidentally that the Crystal Palace Company are enthusiastically supporting the motor-car movement. We are glad to notice that the Club is not encouraging road-racing, nor is it at present paying very much attention to track races. The contests at the Crystal Palace are designed to demonstrate the practical use and utility of motor-vehicles such as are generally supplied to the public, and not to demonstrate that it is possible to build a monstrosity which is capable of moving at a rate far beyond that desirable on ordinary common roads, as has so frequently been done in France. In order to secure these aims, only ordinary vehicles of five different classes will be admitted to the competition. The contest will be held over a course marked out in the extensive grounds of the Crystal Palace

Company. This course will in its character comprise the same descriptions of roadways that are met with in ordinary driving in suburban and rural districts. The course is, naturally, comparatively short, being no more than two miles in length; but the variations in the width of the road, and the declines and inclines encountered in the route, will supply an extremely good test of the capacity of the motor-vehicles competing and those in control of them. Some of the gradients are as heavy as 1 in 10. Additional interest will be afforded in demonstrating the perfect control under which drivers have their vehicles, and it is intended that at about six places on the course the cars shall be brought to a compulsory standstill within a space of twenty feet after the signal is given. The Crystal Palace Company are offering gold and silver medals, and the whole contest promises to be both interesting and useful.

#### Advance in the Motor-Car Movement.

It is only those intimately interested in the motor-car movement who are able to appreciate the large number of firms in England that are quietly working with a view of becoming concerned in the development of mechanical road locomotion on common roads. Amongst others, the well-known firm of Sir William Bailey & Co., of Salford, have recently decided to enter this new field. They have purchased a disused foundry at Patricroft, where it is intended to establish extensive motor-car works. Another firm who are working quietly, but none the less with energy and care, is the Anglo-American Motor Company, of Halifax. Their experimental labours are now reaching a point where production on a commercial scale may soon be expected. At present their intention is principally directed to one particular type of vehicle. The vehicle is designed to carry two persons, but an emergency seat is provided for the occasional use of a third person. The motor employed is of the twin-cylinder petroleum-spirit type of 6 h.p., electric ignition being employed, the necessary current being taken from accumulators. Three forward speeds and one backing motion are provided, and the gearing and power-transmission devices are such that chain and sprocket transmission is avoided. The speed-changing gear is one of the most simple, most noiseless, and less liable to wear than we have yet seen. In order to change speed all that is necessary is to move a dial-lever to the required spot, and to lightly press a foot pedal. The pinions of the speed gear are of the ordinary toothed variety, but the gear-wheel comprises an ingenious endeavour to overcome the wearing out of these wheels. It is so designed that no stripping of teeth is possible, and in the event of any damage occurring to these "teeth" they can be replaced in a few seconds without any cumbrous appliances or the use of other tools than those customarily carried on cars. The wheels are in themselves really "blanks," bearing on their periphery a groove in which is laid a piece of twin-roller cycle chain. The rivets connecting the side plates to the rollers of this chain are carried through the sides of the wheel in several places, and these are tapped and held in position by screw nuts. We hope to give further particulars of this interesting vehicle in a subsequent issue.

#### The Development of Public Motor-Vehicle Services.

THE development of the establishing of public vehicle services in rural and provincial centres still continues. Amongst other towns Middlesbrough is being provided with such a service by a syndicate recently formed. As we have already announced, Liverpool and Birkenhead are to have services, and we understand that a substantial subsidy has been given by the new Brighton Tower Company in order to assure that their undertaking is visited on the route of some of these projected services. Leicester is also shortly to have a service of five motor-vehicles. Eastbourne, however, is apparently not to have its service so soon as was anticipated, owing to the vagaries of the Town Council

and Clerk in licensing these vehicles for hire. We understand that it has been considered by these officials that a speed of six miles per hour should not be exceeded in the town and its vicinity; but as the horse-drawn cars considerably exceed this speed it is rather curious that such a limit should be sought to be put upon motor-vehicles. The projected Newcastle service is progressing apace, and we understand that five vehicles are to be ordered at once. What with these services, besides several others mentioned in previous issues, the further utilization of motor-vehicles by the Post Office, and their use by newspaper proprietors for distributing their journals, it is apparent that at last the commercial possibilities of motor-road locomotion are becoming properly recognised throughout the kingdom. The public service inaugurated at Easter at Brighton has now taken definite form. The Watch Committee has readily granted licences, and this week one car has been started running on a definite route. We understand that additional vehicles have been ordered for early delivery, and that it is intended to run these vehicles to Patcham, Ovingdean Grange and Stanmer.

### "WANTED: A VOITURETTE."

#### WHAT HORSE-POWER IS NECESSARY?

IN the correspondence columns of the present issue Mr. R. Lovelock states his inability to appreciate that it is necessary to have a motor developing at least 3 h.p. attached to a voiturette designed to carry two persons, and practically impugns the correctness of our contention. He offers the statement that a pony or cob properly harnessed to a light trap will easily haul a load of two persons, and by this supports his inability to appreciate the necessity of a 3 h.p. motor for the purpose described. Unfortunately our valued correspondent is not alone in his want of appreciation of our perfectly correct contention, and it is this lack of appreciation that has caused such very considerable dissatisfaction in the public mind in regard to motor-vehicles. Indeed, we may go further and state that the majority of those who, being new to the industry, have sought to design motor-vehicles have invariably been disappointed at the results of their labours by finding when too late that they have not properly appreciated the power to be exerted in effecting the work to be done.

We do not desire to go into the question of the data upon which the determination of a mechanical "horse-power" is founded, as such a course would prove valueless for the purpose in view. We may state, however, that in viewing the potential value of an animal horse-power the lay mind is frequently apt to neglect some portion of the work done or power output. For instance, the "power" exerted by a horse is generally held to be determined by the load it is able to pull; but it is a fact that the "power" of a horse is certainly much more than this. It has to move *itself*; it has to utilise its "power" or muscular force in lifting its legs and its body against gravitation. All this consumes power which is not taken into consideration when simply judging by means of the load pulled; the power exerted for these purposes is by no means the only power put forth by the horse.

Another matter which the lay mind is apt to leave out of calculation when considering the power necessary for motor-carriages is the great difference between hauling and propelling. Everyone who has tried to push a barrow, for instance, up a curb or pathway edging will acknowledge that the power necessary to be exerted is at least twice as much as that necessary were he to *pull* the vehicle over the obstruction. In mechanically-propelled carriages the load is not hauled, but is pushed; hence one reason for an apparent increase in power necessary to do the same work.

It might be argued from this statement that it would be better to employ a tractor to pull the load, and perhaps this would be the case; but even then it must be remembered that the tractor itself (with all its weight) in such a case is itself *propelled* and has to extend greater power consequently.

Another point considerably affecting the power necessary is the difference between the ability of a horse to *feel* an obstruction and to avoid it by reason of its animal instinct; no such power is, of course, possessed by the mechanical motor. Let us compare for a moment what happens when the wheel of a horse-drawn vehicle meets an obstruction with a similar state of things in a mechanically-propelled carriage. Directly the horse by its animal powers *feels* the obstruction, natural laws as well as animal feelings compel the animal involuntarily to divert its path of progression away from that side on which the obstruction is felt. This can be seen quite frequently when the wheels of a horse-drawn carriage either strike the curb or come into collision with other objects, great or small. The motor or engine has, of course, no such appreciation and no such instinctive manner of directing the steering wheels—which are generally quite outside its control—away from the obstruction, and by this means avoiding it; all it can do is to endeavour to push its load *over* the obstruction, and in this endeavour the vehicle is rather turned towards the obstruction than away from it.

It is extremely difficult to describe in definite terms what the power of a horse really is, and there are many extremely interesting points that arise in comparing the so-called horse-power of an engine and that of perhaps the noblest member of the brute creation. The majority of these, however, are of far too technical a character for these columns and we will not therefore enter into them. There are one or two other points which crop up in the comparison, however, to which allusion may fairly be made.

A horse when commencing to draw its load, starting from rest, is in a position to exert its full power under the most favourable conditions. It is able not only to use its muscular power by bringing its feet to an anchor on the ground and using its legs as levers to overcome the resistance, but it is also able to *profitably* use its own great weight. It throws forward its body and, as it were, “drops” its weight against its collar and the tightened traces, and thus brings its massive weight to the aid of its huge strength and the power possible to be exerted by means of Nature’s formation of its body and legs. An engine has, of course, no such ability to utilize its weight, and besides works under additional disadvantages. The capacity or power of an engine is calculated upon its working at a predetermined number of revolutions per minute. For instance, if a six-horse-power engine is designed to develop that power when its crank-shaft, or its equivalent, is turning at the rate of 600 revolutions per minute, that horse-power will not be developed if its crank makes less than that number of revolutions. It is at the moment of starting from rest or when meeting with an obstruction that it is necessary that the greatest power shall be exerted, and it is at this moment that the engine is least capable of exerting its full power—unless, indeed, it is first run at its designed speed, and then geared down to the vehicle.

It is well known that a horse can momentarily, and even for long periods, exercise more than its normal power. Indeed, it has been found that a single horse can exert for an appreciable length of time as much as twelve normal horse-power, and frequently in our streets it is possible to see a horse exerting at least eight horse-power.

The engine, by reason of its running at its predetermined speed, and therefore developing its rated power, has no such mobility even for a second of time, and this is another reason for providing a sufficient power in mechanically-moved carriages to carry out a duty perhaps considerably above that to be normally exerted when once started.

Another point occurs in making the comparison. The horse, when drawing a vehicle, exerts its power at the shoulder-level of its chest. The line of draft starts, then, above the axles of the wheels, and inclines backwards to the road. The power is exerted, too, at a point considerably in advance of the point of obstruction or inertia. The tendency in such a case, then, is to *lift* the vehicle, or its wheels, over an obstruction, owing to the inclination of the line of draft.

In mechanically-propelled carriages this is not the case. The power is exerted through a line level with the axles, or in some cases even below them. The power, too, is applied to the wheels themselves at a point but a little higher than the axle. The wheel does not *roll* forward on its axle, as is the case with a horse-drawn vehicle, but is thrust round upon it. As a result, the wheels, instead of being *lifted over* an obstacle or an inequality in the road surface are in effect driven into the ground behind the obstacle, owing to the effort to advance through adhesion to the road surface, with the result that a much greater power becomes necessary to surmount the obstacle. In a horse-drawn vehicle the adhesion of the road-wheels to the road is unnecessary, and is, indeed, a hindrance to the drawing of the load; all the necessary road adhesion is gained through the contact of the beautifully constructed hoof of the horse with the roadway at a point in advance of the weight of the load. With a mechanically-propelled carriage the opposite is the case. The fulcrum is the same in both cases—the earth; but as the motor-vehicle has to do without the adhesion of the horse’s feet and the leverage exerted through its legs, it has to provide the adhesion and the leverage through its wheels at the point where the weight of the load rests. Hence another reason for the provision of a much greater power in vehicles actuated by mechanical means to that necessary with those hauled by animals.

Another point may be considered with advantage. It is, of course, well appreciated that a heavy horse is able to drag or haul a greater load than is a lightly-framed horse, even although the actual muscular power of both may be equal. The reason of this can be found, we think, if the problem is carefully examined. If one examines the progression of a horse, it will be noticed that its body alternately rises and falls in a regular sequence of curves. Now, when the body rises it is being lifted by muscular force against gravity; when it descends it falls by gravity alone. In addition, when it falls the whole weight of the frame of the horse is brought against the collar, and this continually “undulatory throwing” of its weight on the traces of course materially assists the hauling of the load attached thereto. The more heavily-built horse thus possesses an advantage over his more lightly-framed competitor, in that its additional weight is utilized in assisting its muscular strength to haul the load behind it.

We have written thus fully on the matter for the reason that we recognise the importance of this problem in mechanical road locomotion being properly appreciated by those lay members of the public who take an interest in the subject. The subject is a difficult one to explain without employing technicalities, but we hope our efforts will enable our correspondent, Mr. Lovelock, and others of our readers, to appreciate the reason, indeed the necessity, of employing nominally greater horse-power in mechanically-propelled road vehicles than is nominally obligatory in the case of animal traction.

In case Mr. Lovelock or others of our readers desire to carry out a test for themselves which, we are sure, will furnish them with sufficient proof of the correctness of our statements, we offer them the following means of doing so. Let a horse, cob, or pony be harnessed in the usual way to a light two-wheeled cart. Let this cart carry a load fully equal to the potential capacity of the horse at its ordinary rate of speed. Permit the horse to draw this load at its ordinary speed over a given road, carefully noticing the time taken to traverse a given distance (not necessarily a very long one), and also noticing the condition of the horse at the conclusion of the run. On a subsequent day and under similar climatic conditions load up the cart with the same weight, but this time let the horse push the load by its shoulders and chest. This can be done by placing the horse between the shafts with its head towards the vehicle, and so harnessing it that a shoulder-band or strap attached to the shafts enables the horse to thrust its weight against it, and so push the vehicle and its load forward, tail-board first. Bit the horse in the



usual way, carrying the reins through the rings of the saddle pad, and bringing them back to the driving seat, which, of course, must now be made to face the tail-board of the cart. The horse can be driven quite easily, the reins being used tiller fashion. It will be found that the horse can neither travel at the speed nor overcome road obstacles either natural or artificial nearly so well as when hauling, and its condition at the conclusion of the same run will demonstrate quite visibly that it is easier to haul a load than to propel or push it, even when the many other problems connected with mechanical locomotion on roads are entirely neglected. The undulatory movement of the horse and the consequent utilization of its weight will, during the "pushing" trial, not aid it in the slightest, indeed, it will be found to hinder it, as it will tend to drive the wheels into the ground behind the obstacle instead of assisting to overcome it by lifting them over it, just as is the case with mechanically-propelled vehicles.

## MOTOR-CARS ON THE CONTINENT.

### Motor-Car Excursions in France.

thus following the practice of the English Automobile Club. There is no doubt that if racing is discouraged in these tours the French automobilists will readily appreciate those pleasures which their British *confrères* have found so pronounced in motor-car touring. Touring contests embodying racing have been frequent enough in France, but we congratulate Monsieur Escarraguel and the Automobile Club Bordelaise on having at last inaugurated a series of non-competitive tours, which we are certain will be thoroughly well enjoyed and appreciated by all who take part in them.

### Public Motor- Vehicle Services in France.

THE provincial centres of France are becoming increasingly appreciative of the value of motor-vehicle services in rural districts and between those towns whose situation prevents an adequate railway service. Just as in England, so it is in France, and day by day in all parts of the country advances are chronicled in the founding of motor-vehicle services. The Société Général des Transports Publics Automobiles have already started their service at Libourne, and they are so pleased with the success of this undertaking that they are using their best endeavours to bring into immediate organization additional services on the Libourne-Saint Andre de Culzac road, and on the Libourne-Guitres road. We understand that the establishment of such services will not only be welcomed by the Municipal authorities through whose districts the vehicles will pass, but also by the population of the localities served by these projected services. Between Valence and Crest a Scotte Road train already carries out a motor-vehicle service, and it is now projected to continue this service further in this district, and to run a through service during the coming season between Valence and Montmeyran. Two road-trains leave each end of the route twice a day—namely, at 7 o'clock in the morning, and at 4 o'clock in the afternoon.

### Automobile Fêtes at Spa.

As has already been announced, a series of fêtes has been organized to take place at Spa between July 3rd and 7th next, and a series of contests and demonstrations which will include several diverse features will be arranged in the programme. There will be two classes of races, one designed specially for vehicles constructed for

racing, and the other suited for touring vehicles. The course of the touring vehicles will be from Brussels to Spa, whilst the speed trials will take place at Spa itself. During the holding of these fêtes it is intended to promote a congress of automobilists with a view of discussing and forming some plan for advancing international touring. The congress will open on July 3rd, the speed race will take place on the 4th, the touring race and hill-climbing competitions on the 5th, whilst the 6th will be devoted to the distribution of prizes and a floral fête, the *concours* terminating on the 7th by the whole of the participants proceeding on an excursion.

### Automobile Vehicles in Frankfort.

WE have already announced the establishment, on an experimental scale, of a motor-cab service in the City of Frankfort, and we now learn that these experiments, which have extended over a period of two months, have been conducted entirely without accident, and also with very favourable commercial success. In fact, the general results are regarded as being so satisfactory that an extension of the service is designed to take place within the next two months.

### The Rallie-Papiers Races at Nice.

SOME weeks ago we announced the holding of a motor-car paper-chase amongst the novelties projected by those responsible for the automobile features of the recent Nice carnival. This novel competition, in which we can see nothing very pleasurable, duly took place, Monsieur P. Chauchard laying the track, which extended through Caques to Villeneuve-Loubet. The start took place at the Magnan Bridge, and the course was completed by vehicles of the carriage class in forty-nine minutes, Monsieur Clerissy being actually first home. In the motor-cycle section the course was completed by Monsieur Mercade in thirty-nine minutes.

### Toll-Gate Taxes in Belgium.

As has been the case in England, so it has in Belgium in respect to the contest between the toll-gate authorities of the country and the owners and drivers of motor-vehicles in regard to the classification of such vehicles and the tolls payable by them under the different classifications. Monsieur Debruyne, the Belgian Minister of Agriculture, has now apparently set the matter at rest by informing toll-gate keepers in Belgium that automobile vehicles of all classes, including motor-tricycles and cycles and other such vehicles, shall pay for the future a toll fee of five centimes for each pair of wheels attached to the vehicle, tricycles being held to carry two pairs of wheels. This is a very satisfactory decision, and will avoid much inconvenience to automobilists traversing some of the Belgium roads. We would that some such similar decree were put in force in England, but we fear that there is very little hope of Governmental authority overcoming the rapacity of private owners and farmers of tolls, and that English automobilists will for some time to come have to fight privately against the extortionate charges at many of these barriers.

### Motor-Car Exhibition at Antwerp.

It is now announced that the Committee of the first Antwerp Salon du Cycle et de l'Automobile have decided that their Exhibition shall be held in Antwerp during the period between May 10th and 28th next, in the large hall of the Société Royale de l'Harmonie. Our correspondent reports that the demand for space is already very considerably in advance of that available, and although every inch of room has now been allotted, manufacturers and others desirous of exhibiting have had their demands cut down in

every instance, whilst many others have been entirely left out of the Exhibition.

#### Motor-Cycling in Russia.

THE craze for motor-cycle racing on ordinary roads has now reached Russia, some impetus having been given to this continental fashionable sport by the taking up of motor-cycling by several members of the Russian Royal family. The Société Velocipedique of St. Petersburg has organized a bicycle race between Moscow and St. Petersburg on June 15th next, and in this competition is included a special class for motor-tricycles. The distance to be traversed is 680 kilometres, and it is evident that the participants will have a chance of thoroughly imbuing the Russian populace with the ability of their vehicles to travel this long distance with ease.

#### The Bordeaux-Périgueux Races.

WE have been favoured with a copy of the conditions and official programme issued by the special Committee of the Bordeaux-Automobile Club, governing the Bordeaux-Périgueux race, and the exhibition and meeting to be held subsequently. The route of the race itself is between Bordeaux and Périgueux, with an ultimate return to Bordeaux. The Bordeaux-Périgueux section will be run on Sunday, May 21st, whilst that between Périgueux and Bordeaux is set down for negotiation on Monday, May 22nd. The whole of the vehicles participating in these races will have to take part compulsorily in an exhibition which lasts for the remainder of the week, and which will take place on the Concerts-Promenade des Quinconces, special prizes being offered by the committee of management of this establishment. Competitions of a minor character will also take place during the continuance of the Exhibition. Three classes of vehicles are admitted to the main contests. These comprise racing vehicles, touring carriages, and heavy vehicles designed either for carrying a large number of passengers or a heavy load of goods. The racing vehicles are divided into two types, one comprising motor-cycles and voituresses weighing under 400 kilogrammes, and the other, carriages seating two persons and weighing more than 400 kilogrammes. The touring vehicles are divided into four classes, three of which are classified into two sub-divisions. Class A comprises all carriages having motors of 8 h.p. and over, and this class is divided into those types designed to carry two persons and those which carry four or more. Class B comprises vehicles having motors from 6 to 7 h.p., and this is also sub-divided into divisions for two-seated and four-seated vehicles. Class C embraces vehicles having motors developing from 4 to 5 h.p., this being also divided into two sub-divisions of two and four-seated vehicles. The remaining, Class D, comprises motor-tricycles and voituresses weighing under 400 kilogrammes. The heavy-weight categories include omnibuses carrying at least ten persons, medium-load motor-vans, and motor-delivery wagons weighing more than 1,000 kilogrammes. The distance between Bordeaux and Périgueux is 116 kilometres, and dangerous level crossings necessitate two obligatory stoppages. The first is at St. Médard de Guisieres, 48 kilometres from the start, and the second at Mussidan, 82 kilometres from the start. Valuable prizes are offered, and a large number of entries have already been received.

#### Motor-Car Races at Antwerp.

IN connection with the Antwerp Motor-Car Exhibition, it is intended to hold several races, which, as at present arranged, will take place on May 14th next. The vehicles are divided into four classes: (1) Racing motor-tricycles; (2) Touring motor-tricycles. The course for both these classes of vehicles is by way of Merxem and then by Berg-Op-Zoon, Puppe, Calmthouche, Achterbrouck, Brass-

chaet, and thus return to Merxem. The third and fourth classes will consist of voituresses weighing under 300 kilogrammes and voituresses weighing more than that weight. The course for these will be from Merxem via Schooten, Boterneck, Brasschaet, Hoogboom, Capellen, Donk, and back to Merxem. Gold, silver, and bronze medals are to be awarded, as well as money prizes.

#### Voiturette Races in France.

THE voiturette contest organized by our Parisian contemporary, *La Presse*, promises to be a successful affair, twelve competitors having already entered at the time of our correspondent despatching his weekly letter. The competition will take place during the period between April 20th and 30th. The vehicles entered are peculiarly diverse in character, many of them in no way embracing the characteristics of what we term a voiturette in this country. They are as follows: 1. A Phébus motor-tricycle, trailing a voiturette; 2. A Phébus quadricycle, propelling a fore-carriage; 3. A three-wheel Phébus voiturette; 4. A Phébus automobilette; 5. A light carriage constructed by Turgan & Foy, having four wheels, weighing 180 kilogrammes, and priced at £160, propelled by a 4-h.p. motor; 6. A combination of a voiturette, bicycle, and tricycle, all convertible, the voiturette carrying the motor, made by Crossot, the vehicle weighing 140 kilogrammes; 9. Three motor-tricycles constructed by Monsieur P. Rennaux; 10. A Comiot motor-tricycle fitted with speed gearing, and trailing a voiturette, carrying two persons, and weighing 163 kilogrammes.

#### A Strike of Automobile Engineers in France.

FROM private information recently received from Paris it would appear that the French constructors of automobile vehicles are likely soon to be placed in a very awkward position. As is well known, most of these firms have a large number of orders on their books for specified delivery at certain dates. The difficulties, already sufficiently large, in fulfilling these contracts, are likely to be added to, as we understand that certain agitators are fomenting the French engineers employed in these works, in order to secure their simultaneously leaving work. The pay received by these men is considerably above that received by engineers employed in other sections of the engineering industry in France, and therefore it is a disgraceful abuse of the power of organization that they should now seek to strike work.

### NOTES FROM THE WORLD OVER.

It is reported in the U.S. papers that the Commissioners of Fairmount Park, Philadelphia, have followed Boston's lead and prohibited automobiles from entering the park. This will, of course, be recalled ultimately.

A NEW company has just been registered in Paris (10 Rue Hollvry), with a capital of £60,000, and with the title *La Compagnie des Automobiles et Cycles Hurtu*, to acquire and carry on the business of Messrs. Hurtu.

It is said that a Chicago electric vehicle company has closed a contract to supply pleasure motors for several Bombay princesses. The order aggregated £5,200, and the vehicles will be shipped during the early summer.

A DISCUSSION is being carried on in the correspondence columns of our French contemporary, *La France Automobile*, as to whether a *backward* or reverse motion is necessary in motor-vehicles. So far the bulk of opinion is in the affirmative.

A COMPANY has just been formed with a capital of £5,000 to be known as the Lancaster and Morecambe Motor-Car Co., Ltd., to carry on business as motor-car, omnibus, coach, and carriage proprietors, jobmasters, general carriers, etc.

# Leaders in Mechanical Road Locomotion.

## No. 3.—MONSIEUR ARMAND PEUGEOT.

IN selecting Monsieur Armand Peugeot for the third of our series of photographic reproductions of the leaders of mechanical road locomotion we desire to do honour to one whose energetic work in endeavouring to perfect motor-vehicles is, perhaps, not too well recognised either in France, the scene of his labours, or in England, where the results of his experiments are known and appreciated perhaps only by a small number of those who are interested in the "new industry."

Monsieur Armand Peugeot was born in 1849, at Valentigney. After having had a college education in his native country he came to England, not only with a view of perfecting his knowledge of the English language, but also to gain experience in British engineering practice.

The firm of Peugeot Frères was established in the same year that the subject of our sketch was born (1849), and, like many another large undertaking of the present day, it was at the date of its formation but a very small concern.

After completing his apprenticeship in England Monsieur Armand Peugeot returned to France in 1871, and at once took a prominent position in the works established by his father and his uncle. The firm of Peugeot Frères had during the time built up a considerable reputation for the excellence of their productions in furnishing ironmongery. This reputation suffered in no way by the advent of Monsieur Armand Peugeot, for it was due to him very largely, if not principally, that the firm's business continued to increase in extent and at the same time gained enhanced reputation for excellence of workmanship and material, until at last it is in extent amongst the largest works of its class in France, with a reputation entirely unsurpassed.

Monsieur Peugeot was a believer in the cycle. It was through his persistent advocacy that his firm took up its manufacture, building large works specially for the purpose, and making them one of the best equipped in France. In 1876 the style of the firm was changed, and it then became known as "Les Fils de Peugeot Frères." From the time that cycle manufacture was undertaken Monsieur Peugeot also determined that he would also be an early participant in the motor-car industry, whose advent and scope was then just beginning to be recognized in France.

Monsieur Peugeot at first turned his attention to a light self-propelled tricycle, but having very little faith in the permanency of this type, soon devoted his energies exclusively to heavier types of motor-vehicles. He examined many systems, and like his engineering contemporaries, Count de Dion and many others, first turned his attention to vehicles to be propelled by steam. He was certainly the first enthusiast in motor-vehicles to appreciate at its true worth the Serpollet boiler as an aid to mechanical locomotion on

common roads, and it was at the Valentigney works that the Serpollet boiler was first utilized in a road motor-vehicle. Indeed, the motor-car exhibited on Monsieur Serpollet's stand at the Paris Exhibition of 1889 was built at the Peugeot works at Mandeure. Monsieur Peugeot soon recognized, however, that the use of the coiled tubes with their minute interstices, as then used in the Serpollet system, was fraught with serious disadvantages, and he then turned his attention to impulse or explosion engines.

It was at this time that Monsieur Armand Peugeot came into contact with Herr Gottlieb Daimler and the late Monsieur Emile Levassor, who drew his attention to a light carriage propelled by a Daimler engine that did its duty very well indeed, so far as was considered "well" at that comparatively remote period. Monsieur Peugeot at once recognized the value of this engine, and with characteristic energy co-operated with Monsieur Levassor in promoting its successful application to motor road vehicles. Working quite independently, he soon produced successful vehicles; indeed, the first petroleum-spirit motor-car to successfully undertake a long journey was made by the Peugeot firm. This was in 1891, when the now-celebrated Peugeot car made its historic journey from Valentigney to Paris, from thence to Brest and back to Paris, and ultimately again to Valentigney, accompanying the competitors in the first great long-distance cycle race held in France, and reaching home, we are assured, in excellent condition. Since that the Peugeot carriages have taken first prizes in the Course du *Petit Journal* in 1894; the Paris-Bordeaux-Paris race in 1895; the Bordeaux-Agen race in 1896; and the Paris-Marseilles-Paris race in 1896.

The Peugeot firm followed the fortunes of the Daimler motor for several years, using even the latest form, the Phénix, until Messrs. Panhard & Levassor, the Daimler licensees, could supply no more, owing to their output being required for their own use. Nothing daunted, Monsieur Armand Peugeot, assisted by Monsieur Rigoulot, an engineer as skilful as he is modest, devised a horizontal motor possessing many excellent features, especially in the

valve-operating mechanism, which has been utilised in all the Peugeot cars produced subsequently.

For a time the "sun" of the Peugeot cars was slightly dimmed by the dazzling effulgence of the successes won by the cars of Panhard & Levassor; but not for long was this the case, and only quite recently an 18-h.p. Peugeot car won the Nice-Castellane-Nice race, the La Turbie contest, and the mile record, as has been recently chronicled in the columns of this Journal. Doubtless other successes still await the Peugeot cars, although the firm of Panhard & Levassor are trying to produce a 12-h.p. car which they hope will gain the laurel wreath in the next competitive meeting with the Peugeot vehicles. Although essentially a "business" man, and one whose



MONSIEUR ARMAND PEUGEOT.

energies find a ready outlet in the solving of problems connected with the automobile industry, yet Monsieur Armand Peugeot has found time and opportunities of demonstrating that he has a ready sympathy with the troubles and life-problems of his less fortunate and successful fellow-men. He has inaugurated many beneficent schemes for the working man, and has endowed many charitable and benevolent institutions at Valentigney. He inaugurated and financially supports an old-age pension scheme for his employes who are past work, and for this alone, as well as for many other benevolent actions, he is venerated and esteemed by his fellow-men.

With a personality direct, clear-headed, and without guile, Monsieur Armand Peugeot is always a *persona grata* with Englishmen, whilst his reputation for just dealing and conscientious fulfilment of his undertakings ensures a ready appreciation of his merits alike from Englishmen and his own countrymen. He was decorated a Chevalier of the Legion of Honour in 1889, and carries a mark of the appreciation of his value by his fellow-citizens in the fact that he has been re-elected a Municipal Counsellor of his city for the last twenty years.

DICK FARMAN.

A SYNDICATE has been formed in Vancouver for the purpose of introducing automobiles into British Columbia. While they will first be brought to Vancouver, it is confidently expected that the business of the company will be extended to include Victoria, and perhaps other cities on the coast.

We learn that the construction of motor-tricycles is being taken up at the Minerva and Romania Cycle Works of Messrs. S. de Jong & Co., at Berchem, near Antwerp. No particulars beyond that the motor to be employed is of a special type which will not infringe the De Dion motor patents are so far available.

MORGAN'S CHAINS AND PEDALS, LIMITED, was registered on March 29th by F. J. Richards, 28 Bedford Row, W.C., with a capital of £10,000 in £1 shares, with the object to enter into an agreement with H. Morgan, L. K. Elkington, and A. E. Beck, and to carry on business as manufacturers of and dealers in pedals, chains, cycles, and the components thereof, motor-car builders, etc.; managing director, H. Morgan.

TYRES, LIMITED, is the title of a company registered on March 28th by Jordan & Sons, Limited, 120 Chancery Lane, W.C., with a capital of £10,000 in £1 shares, with the object to carry on business as builders of and dealers in cycles, motor-cars, and other vehicles, tire manufacturers, etc. The directors are to be elected by the signatories. Qualification not specified. Remuneration, £50 per annum each; chairman, £75.

THE GERMAN CYCLE DEALERS' ASSOCIATION is organizing a cycle and motor-car show, to be held in Leipzig in the second half of October next. The show will be held for five days, during which only exhibiting manufacturers, members of the Association, and *bona-fide* dealers will be admitted. One of the conditions imposed by the Association is that all finished cycles, motor-cycles, and vehicles exhibited must be of German or Austrian make, but in the parts and accessory departments foreign makers will be allowed to exhibit.

MCDOWELL'S, LIMITED, is the title of a new company registered on March 29th by Cole & Jackson, 35 Essex Street, Strand, with a capital of £10,000 in £1 shares. Its object is to acquire the business of coach and carriage builders, tram-car builders, cycle makers, motor-car builders, etc., as now carried on at Warrington and Northwich by Maskery and Co. and at Liverpool by John McDowell & Sons, and to develop and extend the same. The directors are J. McDowell, sen., J. McDowell, jun., G. C. McDowell, and S. McDowell. Qualification, £500. Remuneration to be fixed by the company.

## THE AMÉDÉE BOLLÉE CARRIAGES.

THE name Bollée is, in England, principally associated with the *prénom* "Léon," and with the light three-wheeled voiturette to which the name Bollée has become attached in this country. Another Monsieur Bollée, however, exists in the automobile world, and this member of the family, Amédée, jun., has devoted his attention to vehicles of a heavier type than those associated with the name of Monsieur Léon Bollée.

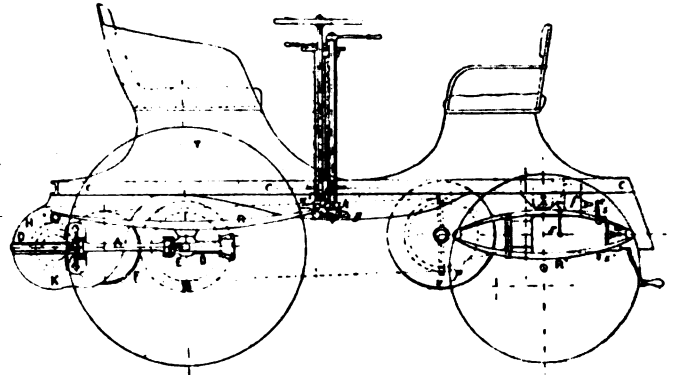


FIG. 1.—ELEVATION OF AMÉDÉE BOLLÉE MOTOR-CARRIAGE.

The Amédée Bollée vehicles are made by the well-known railway engineers, De Dietrich & Co., of Luneville, France, and have now acquired a reputation in France quite on a par with that of the Levassor, Peugeot, and Mors types of vehicles; indeed, at the present moment the Amédée Bollée, the Mors, the Levassor, and the Peugeot vehicles are all struggling for a supremacy very difficult of attainment.

Figs. 1 and 2 give diagrammatic views of the constructional details of the Amédée Bollée cars, which are all built on the same form and type of frame, whilst Fig. 3 gives a photographic reproduction of a racing car of this type, whose constantly maintained speed on the level is 60 kilometres (say 37½ miles per hour), so that the glass protection placed in front of the driver becomes a desirable adjunct to the vehicle. The form of the vehicle body, it will be noticed, is so designed as to offer the least resistance possible to wind pressure, and the whole of the upper part is constructed of thin sheet aluminium, to gain as light a construction as possible.

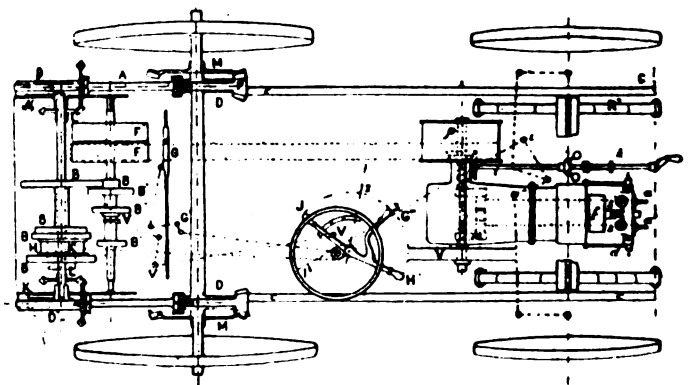


FIG. 2.—PLAN OF AMÉDÉE BOLLÉE MOTOR-CARRIAGE.

The mechanical details of the car are shown in Figs. 1 and 2, which diagrammatically represent the standard method of arrangement. It will be recognised at once that the method of giving motion to the rear road-wheels is essentially different from that employed by any other manufacturer or designer. It is, in fact, a combination of belt and bevel-wheel driving, and it is claimed that by the combination the advantages of both systems are conserved whilst the disadvantages are avoided.

The motor is of the horizontal two-cylinder type, the cylinders being cast in one piece, and having a water-jacketed



FIG. 3.—GENERAL VIEW OF AMÉDÉE BOLLÉE RACING CAR.

space around their walls. The connecting rods of the two pistons are carried on to one crank, the crank being set at an angle of 180 degrees, and the explosions are so arranged that they alternate in each cylinder, the crank-shaft thus gaining an impetus from the motor each revolution, the motor being of the two-cycle type. The ignition of the charge is effected by means of the incandescent tubes, *a a'*. The speed of the motor, which is normally 600 revolutions, is governed by the ball-governor *h*. Power is communicated from the crank-shaft, through the medium of the fast pulley *P*, by means of a belt to the fast and loose pulleys *F, F'*, carried on the first intermediate shaft *A*. This shaft carries a set of four gear-wheels *B'*, fixed on a sleeve that is free to move on the shaft *A*; these gear-wheels transmit power to the second countershaft by a corresponding series of four gear-wheels, *B*. The bevel pinions *L* fitted on each end of this second intermediary shaft convey power to the doubly articulated shafts *D* and *D'*, which in turn transmit it through the bevel-pinions *P* to the bevel-wheels *M*, fixed on the rear road-wheel axles. In this manner chain and sprocket transmission is avoided. The second intermediary shaft carries a "jack-in-the box" or compensating gear *K*, over which is carried the hand-brake drum *H*. The shafts *D* are articulated at two places, as will be seen on reference to Figs. 1 and 2, in order to provide a compensatory movement when the road-wheels are passing over inequalities in the road level.

Variations in speed travel are effected by means of the engagement of different members of the two groups of gear wheels *B* and *B'*, this being effected through the clutch *V* actuating the sliding sleeve carrying the gear wheels *B'*, by

means of jointed levers controlled by the hand-lever *J'*. The fore-wheels are carried on short vertical axles, the necessary movement for steering being effected by Ackermann gear controlled by the hand-wheel *I'*. The hand-lever *G''* controls the belt-shifter *G* through the medium of jointed levers *G'*, and the hand-lever *H'* controls the band-brake on the brake-drum *H*. The levers controlling the belt-shifting, the speed-changing device, and the band-brake, are so connected together that on applying the band-brake the belt is shifted on to the loose pulley *F'* automatically; this is also the case in some of the earlier cars when the speed-changing gear is operated. In vehicles of later construction, however, a friction-clutch actuated by a pedal is fitted in the pulley *P* carried on the crank shaft, and this permits not only a much quicker stopping of the car, but saves the trouble and wear and tear of continually shifting the heavy belt.

The motor, being carried in front of the car, is very readily accessible, and as the whole of the transmission and operating gear is carried at the back of the vehicle, this is also conveniently placed for examination and attention. It will be noticed, too, that both motor and mechanism are placed under the frame of the car, so that stability is ensured. The cylinder walls and explosion chambers are cooled by a water circulation, but no pump is employed, the circulation acting on the thermo-syphon system. Every provision is made for controlling the air admission to the explosion chamber, and the richness of the explosive mixture can be increased or diminished at will, whilst by an automatic arrangement the different qualities of the explosive mixture are also controlled by the speed of the motor itself.



It is a peculiar feature of this type of car that Monsieur Amédée Bollée was the first to successfully use a horizontal high-speed engine on a motor-car, and in this respect other constructors, including Peugeot, Ducroiset, and Augé, have followed in the footsteps of Monsieur Amédée Bollée, jun., the third member of a family which includes a father and two sons, all separately interested in the motor-car industry in France.

## SCOTTISH NOTES.

### The Benz Car.

I HAD an opportunity recently of renewing my acquaintance with the Benz motor. Some two years ago I was unfortunate enough to sample a Benz car, as it was then sent into this country with its 1½ or 2-h.p. engine, and in a hilly country like ours it can easily be imagined it proved an endless source of sorrow and disappointment. The motor, of course, was too weak, and while perhaps quite ample for flat roads, was quite unsuitable for work in Scotland. When I recall my early struggles, and compare my first experience with that of the past month on the latest type of Benz, I realise that during these years the manufacturers have not been idle. While the pleasing design is still retained the power of the motor has been considerably increased, with the result that all ordinary hills can be surmounted with comfort. For a car of its class the Benz is certainly hard to beat, although it has often surprised me to find very low-grade workmanship in several parts, and which is still visible in the latest productions from the Mannheim works. A little more care exercised in the manufacture and fitting of these minor parts would go a long way towards spreading to this country the popularity these vehicles enjoy on the continent. One of the most important improvements in the latest type is the introduction of the *double*-cylinder motor. This is a long step in the right direction, and after a good deal of practical experience I venture to predict that the industry will not be very old in this country before single-cylinder petrol motors will be things of the past. The increased power for use when required, the reduction possible in the engine-speed and consequent diminution in noise and vibration, and increased regularity in working, are all items of the first importance to the practical motorist. All these I noted in the Benz double-cylinder dog-cart which I recently had an opportunity of seeing at work. It would be well, I think, if British motor manufacturers kept this before them, and devoted their energies to the production of a motor with at least two cylinders, however many more they might have. The price will naturally be slightly increased, but the advantages obtained far outweigh the small additional cost.

### The Motor-Tricycle.

SINCE the advent of the mechanical vehicle I have always maintained that in the evolution of road locomotion the cycle came to prepare the world for the motor-car. The popularity of the ubiquitous cycle has undoubtedly gone far to make us a nation of mechanics, educating as it has done, more or less, vast numbers of the population by simple lessons in applied mechanics. From the management of a modern bicycle to the intelligent care and management of a motor-cycle or motor-carriage is but an easy step. We are not surprised, therefore, to find the number of the leading lights of Scotch cycledom who are adopting the motor-vehicle in some form or other increasing every week. From information I have received, motor-tricycles are coming into the "land o' cakes" in a merry stream, and no doubt sport promoters in the North will this year see it to be to their advantage, where practicable, to include in their programmes motor-cycle events.

### A New Comer.

THIS week the leading organ of the cycle trade in Scotland, *The Scottish Cyclist*, presents its readers with a motor-car supplement, which it is intended, I believe, to be continued without extra charge. In view of the slump in cycle advertisements, it is only natural that enterprising publishers should look around for "fresh fields and pastures new," but it is an open question whether this enterprise will meet with remunerative support for some time.

### Pennington Deliveries.

I HAD an opportunity this week of enquiring of Messrs. Stirling the cause of the delay in the delivery of new Pennington motors, which the public are so much interested in, and I have been informed that the delay is in no way caused through any defect in design or construction of the motor, but solely through the great pressure of work which is being experienced just now by every steel founder in the country, and the consequent lateness in the deliveries of steel castings. A change for the better in this respect has, I understand, set in this week, and the large batch of machines which on this account have been kept back for many weeks are now being rapidly completed, and will, I am informed, be delivered to the earliest customers very shortly.

### The New Club.

THE sunshine with which we have been favoured this week brought out more motor-vehicles than usual. I had an opportunity of hearing views on the subject of the New Club, and I found a lively interest being taken by Scotch chaffeurs in the proposal, a preliminary meeting in connection with which is, I learn, shortly to be convened, and it is to be hoped that the Club will be sufficiently firmly established to inaugurate its first tour at Whitsuntide.

### Electrical Carriages.

THE article in this month's *Royal Magazine* describing the electric and other marvels within the mansion of Sir David Salomons, at Broomhill, has been read with interest among automobilists here, and his opinion on the practical inutility of electric motors for carriages has given rise to a good deal of discussion. Coming from so eminent an authority it is worthy of notice, however. Of course, this opinion has been expressed by Sir David on many previous occasions; indeed, from the first he has pinned his faith principally to steam, with a somewhat grudging recognition of petroleum-spirit motors.

### The Easter Tour Photographs.

To find some three dozen beautiful photographs of the Easter tour of the Automobile Club reproduced in last week's issue of this Journal, surprised most subscribers in the North, and I have heard it described as a "smart bit of work." But, as I have assured many of these subscribers, this may be taken as a fair example of the "up-to-date lines" on which *The Motor-Car Journal* is being run.  
"BROWN HEATHER."

THE BEDFORD MOTOR-CAR SYNDICATE, LIMITED, was registered on April 6th by Burn & Berridge, 87 Chancery Lane, with a capital of £2,000 in £5 shares, in order to carry on in Bedford or elsewhere the business of tramway, railway, omnibus, motor-car, and van proprietors, dynamo and locomotive builders, etc., and to acquire and turn to account any patents. Registered without articles of association.



DEPARTURE OF THE MOTOR-VANS FROM THE "DAILY MAIL" OFFICES.

## A Smart and Paying Enterprise.

THE above engraving does not profess to illustrate any new type of motor-vehicle, but simply places on record the smart enterprise of the proprietors of the *Daily Mail* in issuing the first number of their Sunday edition last week. As is now generally well known, the proprietors of the *Daily Telegraph* and of the *Daily Mail* commenced issuing Sunday editions of their papers last Sunday, and the proprietors of the latter, on examining the times of arrival of the "newspaper trains" at various provincial centres, determined if possible to outwit the proprietors of the former paper by having the *Daily Mail* on sale in certain districts some hours before the arrival of the newspaper trains with the rival journal.

Mr. Alfred Harmsworth, who is an enthusiast in motor-road locomotion, at once turned his attention to motor-vehicles, and arranged at the last moment with the Motor Manufacturing Co., Ltd., for the supply of several vans, in order that his wishes in regard to early deliveries might be met. Two of these vans are illustrated above; the one on the right hand journeyed to Brighton, and the one on the left to Windsor and district.

The enterprise was so successful that the first delivery of the *Daily Mail* was made in Brighton two hours before the arrival of the newspaper train with copies of the other newspaper. Foreseeing the result of the early delivery (although Messrs. Harmsworth had despatched by motor-van every copy actually ordered in Brighton), it was decided to send by the newspaper train an additional double quantity. This was picked up by the motor-van at the station and distributed to the newsagents throughout the town before the *Sunday Daily Telegraph* had completed its first delivery to its agents.

The following is the log of the Brighton van :—Load,

12 cwt., driver and carman; time of leaving *Daily Mail* office, 1.57 a.m.; route travelled, *via* Reigate and Purley; error in taking wrong turn in route, 12 miles; time of arrival at Brighton, 7.20 a.m.; distributed papers to eight depôts and to various newsboys; stopped motor one hour for treatment; met 9.20 train at Brighton Station and distributed second batch of papers to same agents and newsboys; filled up spirit and water tanks and traversed town all day as advertisement; left Brighton 5.55 p.m. unloaded; arrived *Daily Mail* office, 11.30 p.m.

The Windsor and district van did equally well, and in this case various towns on the route were served with orders, stoppages and detours being made to reach the various agents' establishments. The following is the log of the van :—Load, 15 cwt., driver, representative, and carman; left *Daily Mail* office, 3.45 a.m.; stopped at Richmond (station) and delivered papers to agent; stopped at Kingston and delivered to one agent, stopped at Hampton Court and made one delivery, stopped at Sunbury and made one delivery, stopped at Weybridge and made one delivery, stopped at Addlestone and made one delivery, stopped at Egham and made two deliveries, stopped at Staines and made two deliveries; reached Windsor and made complete delivery by 8.10 a.m.; stopped motor about one hour at Windsor, and then returned to London, reaching *Daily Mail* office, 11.45 a.m. unloaded.

We understand that Messrs. Harmsworth are so satisfied with the result of their enterprise that they propose to employ as many vehicles as can be supplied on Sunday next, and that they are also contemplating employing motor-vans for their ordinary daily deliveries. In the meantime it is certain that vehicles of this type will be increasingly used by the firm.

# Improvements in the Bollée Voiturette.

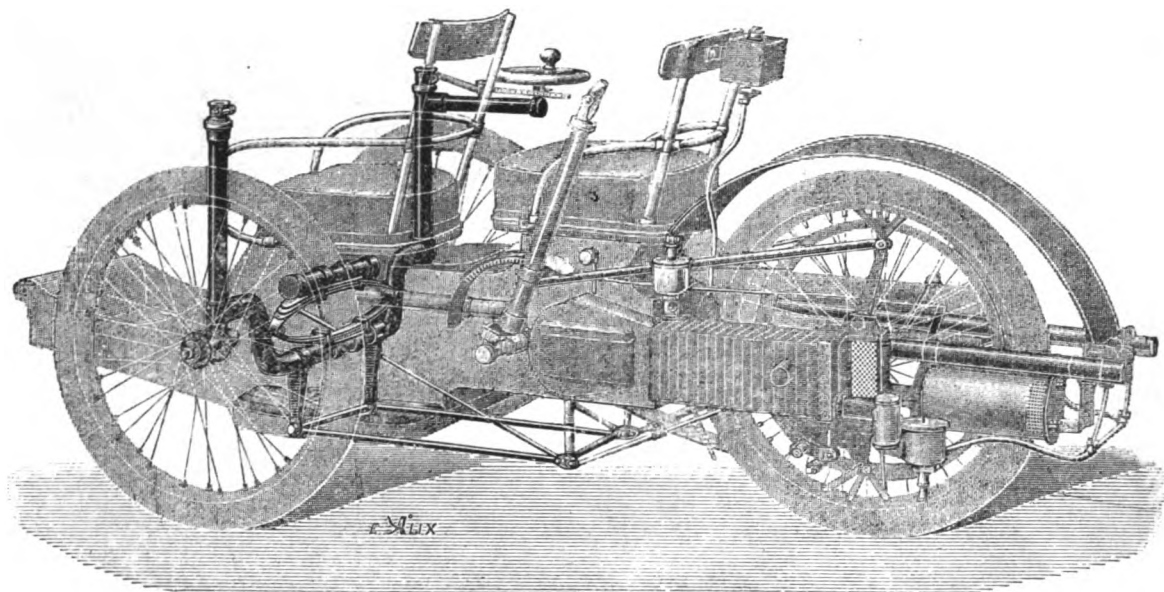


FIG. 1.—GENERAL VIEW OF IMPROVED VOITURETTE, SHOWING NEW SPRING-SUSPENSION ARRANGEMENT.

ONE or two important detail improvements have recently been introduced by La Société des Voiturettes Automobiles, of 163 Avenue Victor Hugo, Paris, in the Bollée voiturette. As this vehicle is already very familiar to *chauffeurs* on both sides of the Channel, it is not necessary to give a lengthy description of it, and we shall consequently confine ourselves to the improvements above alluded to. One of the drawbacks to the voiturette has

be seen from Figs. 1 and 2, a cranked tubular axle is now employed, a large plate spring being introduced between it and the end of the frame. To strengthen the connection between the frame and the axle two short levers are mounted on the latter and connected at their lower ends to the tension stays of the frame. The two levers are free to turn on the axle and are pivotally connected to the stays so that they may adjust themselves to the relative vertical movement due to jolting,

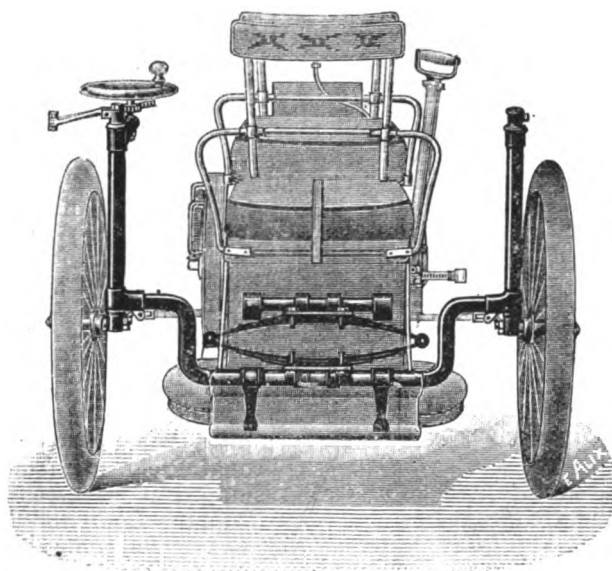


FIG. 2.—FRONT VIEW OF NEW TYPE.

hitherto been that the frame, carrying both the motor and transmission gear, as also the riders, was mounted directly on the wheel axles, and thus all vibration, jolting, etc., over and above that taken up by the pneumatic tyres, was transmitted to the riders, while the rear wheel was subject to slide-slip or skidding. To overcome these disadvantages the Bollée Co. have now introduced a new type in which a plate spring is introduced between the frame and the front axle. In the old type, Fig. 3, the latter was straight, but as will

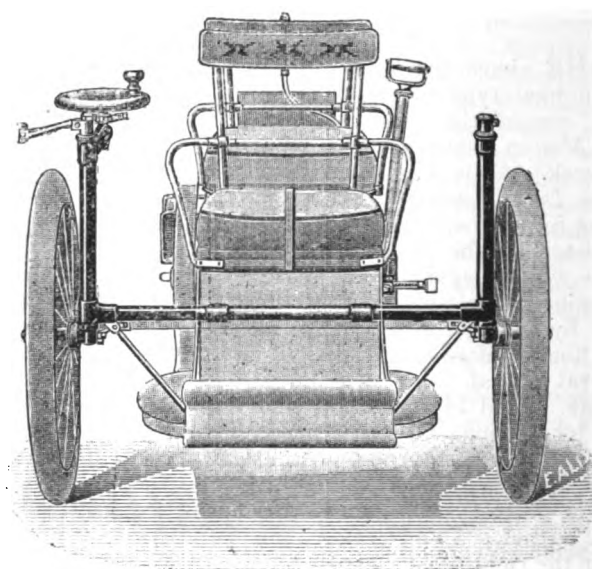


FIG. 3.—FRONT VIEW OF OLD TYPE.

etc., of the two parts—the front and the rear—of the voiturette. In addition to the increased comfort afforded to the riders the new suspension arrangement is claimed to considerably minimise the tendency to skidding of the rear wheel, the reason advanced for this being, according to *La France Automobile*, as follows: "The power which causes the rear wheel to slip sideways should, in theory, be absorbed by the forward progression of the vehicle or by the application of the brake. In practice, however, it has been found that neither of

these absorb all the power in question, but it expends itself in causing the rear wheel to drag laterally. In the new suspended frame the rear wheel, when turning, inclines slightly with the frame, the power which in the old system caused the wheel to slip being absorbed in compressing the plate spring." The new spring-suspension arrangement alters the appearance of the voiturette but little, the spring being hidden underneath the front seat; it can, we understand, be applied to existing vehicles at the cost of a few pounds.

The second improvement is in connection with the tube ignition employed on the Bollée voiturette. In the ordinary platinum tube there is a small collar fixed tight up against the tube-carrier, threaded into the opening in the explosion chamber by means of a capped nut, the bottom of which is furnished with rings or washers of asbestos. Owing to the progressive carbonisation, these rings require to be frequently tightened up; and also renewed from time to time, as any leakage at the joint would reduce the

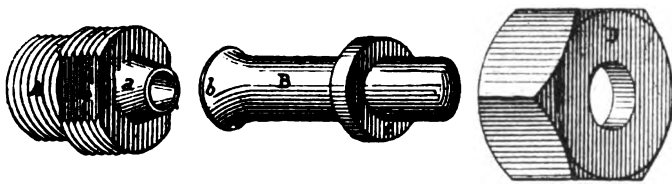


FIG. 4.—THE NEW IGNITION TUBE FOR BOLLÉE VOITURETTES.

compression and interfere with the working of the burner to such an extent as to occasionally cause mis-fires, and so diminish the power of the motor. Furthermore, owing to the high temperature, it is not often possible to promptly put the burner into proper working order again. To overcome these drawbacks the Bollée Company have lately introduced a new joint, in which the use of asbestos washers and their consequent disadvantages are obviated. The joint comprises a tube-carrier *A* (Fig. 4), screwed into the opening in the explosion chamber in the usual way. The carrier terminates at its outer end in a small cone *a*. The end of the platinum tube *B* is opened out to a shape to fit tight over the cone *a*, the two parts *a* and *b* being held close together by the washer *C*. When the latter is fixed in its proper place the capped nut *D* is screwed down on to the tube-carrier *A*, the result being that the three parts of the ignition tube are hermetically maintained together without the employment of any packing whatever.

THE Belgian Army has been discussing motors, and in consequence a military committee will test automobiles with a view to military service. The experiments will be made with heavy loads, upon which will depend the eventual introduction into the army of automobiles.

In the annual report for 1898 of the Société des Constructions La Metallurgique, one of the leading Belgian engineering concerns, it is stated that at the Sambre works of the company "a new type of automobile has been designed and will shortly be submitted to the appreciation of the public."

THE London Traction Haulage Co., Limited, has been registered with a capital of £5,000 in £1 shares. It will adopt an agreement with J. Cattermole, and build and deal in and with motor-cars, traction engines, steam rollers, trucks, wagons, etc. The company is registered without articles of association.

THE Joel Electric Carriage, Motor and Battery Syndicate, Ltd., has been registered to adopt an agreement with the National Motor-Carriage Syndicate, Ltd., to carry on business as motor-car builders, cycle manufacturers, electricians, etc., and to acquire certain inventions relating to secondary battery plates, electro-motors, dynamos, gears, and dry electrolyte for secondary batteries.

## CORRESPONDENCE.



### THE MOTOR MAXIM GUN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I venture to correct a slight mistake made in your last week's issue with reference to the much maligned motor-tricycle employed by the 26th Middlesex Cyclist Corps to drag their Maxim gun at Aldershot this Easter. As the driver of this tricycle, I can only say that the 1½-h.p. motor built in England gave the greatest satisfaction, and in point of power was amply sufficient for the work it had to do, dragging the Maxim gun and gun-carriage, weighing over 140lb., with ease. On the journey down from London to Woking, the head-quarters of the cyclist corps, the exceptionally good time of four miles in thirteen minutes was accomplished. As a matter of fact, the only hitches that occurred were from the use of inferior lubricating oil and tire troubles. On Saturday before Easter the motor did on out-post duty without the gun 19½ miles in the hour over a hilly road, and had it not been for a tire coming off in a most vile and persistent manner the motor would have been voted a huge success, and all praise is due to the 26th for their pluck and enterprise. Apologising for troubling you in this matter,

Yours, etc.,

182 Gray's Inn Road, W.C.

CHARLES H. E. RUSH.

April 10th, 1899.

### WANTED, A VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Returning again to the subject of a "Voiturette," which appears so greatly in demand, I cannot in the least understand what you say as to the engine-power (3½ horse) required to drive same.

A pony or small cob properly harnessed to a vehicle easily conveys two persons where they desire to go.

We see daily a 6 or 7-horse power locomotive moving its ponderous self, and a whole train of vehicles behind it. Why in the world do we want a 3½-horse power motor to move two people about in a carriage constructed, say, on the latest principles as to wheels and bearings? I may be only simple minded on the matter, but it has been my fate to move many thousand tons of material at the least expense, both by steam and horse, and I have been able to watch the road locomotive and portable engine grow from infancy. Judged by the experiences thus gained, I have not a shadow of doubt that we shall soon get the "Voiturette" we want.

I congratulate you on the issue of your paper, which will certainly aid the work.

Yours truly,

R. LOVELOCK.

### EFFECT OF "BRAKING" ON PNEUMATIC TIRES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter signed by Mr. L. Lecomte in your issue of the 17th ult. in reference to wheels and tires for motor-cars, he is asking for information on a point that I can very easily answer.

From actual experience, there is not the slightest harm to pneumatic tires if a car weighing 25 cwt. loaded, runs down a hill on gradients approaching somewhere what he mentions, but, of course, not being exactly the same.

There are several hills of this type which I have gone up and down very frequently, notably, Hand Cross Hill on the Brighton Road, Clayton Hill on the Brighton Road, Reigate Hill, and Westerham Hill. I think all these hills have certain portions steeper than one in twelve, and the car requires to be kept under brake control the whole time.

I do not see that there is any particular strain on the tire by doing this; at any rate, there is none set up in use that I can see; but I am taking it he does not mean brake

control through the tires or, rather, on the tires, as I should say that if the brake were only applied on the tires there would be a danger of the brake block becoming hot and damaging the tires.

Personally, I always try and use my band brakes only, only keeping the tire brake as an emergency brake.

Yours truly,  
S. F. EDGE.

London, 4th April, 1899.

### THE N.C.U. AND MOTOR TRACK RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Now that such an amount of interest is being taken in the above, I think it would interest your readers to know exactly the treatment that one is to expect from a body who profess to take over the government of a pastime when they are absolutely unprepared to do so. It will be observed by all that they cannot even see their way clear to answer a simple question which is put to them; moreover, they themselves seem to be in some doubt as to whether they will insist upon a motorist taking out a licence or not.

Trusting you will find space in your columns to insert the correspondence,

Yours truly,  
C. G. WRIDGWAY.

Manchester, April 6th, 1899.

MR. WRIDGWAY TO N.C.U.

The Secretary,

The National Cyclists Union,  
27 Chancery Lane, London, E.C.

March 27th, 1899.

SIR,—I am in receipt of a letter, dated 26th inst., from Mr. F. W. Baily, hon. sec. of the Crystal Palace Cycle Track, informing me that unless M. Rigal (my fellow competitor in the hour's race on Easter Monday) and myself hold professional licences you will regard it as an unregistered meeting, and that neither of us will be eligible to obtain a licence from you afterwards.

Now, first of all, I should like to know why it is that you have only just advised Mr. Baily, when the race has to my certain knowledge been notified in the press some considerable time since.

Secondly, why is it that M. Rigal and myself were not notified direct? Of course you may not have been acquainted with our addresses, but the cycling press would have assisted you in that matter.

Thirdly, what are your rules governing motor racing? Have they been published throughout the motor press?

Fourthly, if so, when? And I should like to have the dates.

Fifthly, by what right should I take out a professional licence? I certainly rode at about three meetings in 1896 and 1897 as a professional cyclist, but I have never ridden as a professional motorist. I am not in the motor trade, moreover, the machine which I am riding was bought and paid for by me.

Sixthly, what is the distinction between a professional motorist and an amateur motorist, and where is this distinction defined in your rules.

Seventhly, what is the licence fee, should one apply for an amateur or professional licence?

Eighthly, supposing a motorist should take out a licence from you and compete, or assist, in any race on the road, or at motor exhibitions, what would be the result? Would he be liable to permanent or temporary suspension, and which?

If you will kindly satisfy me in regard to the above questions by Wednesday next, it will give me time to further consider the question of a licence before Easter. Regretting that I cannot give you any more time to reply to this, but at the same time you must quite understand it is entirely through your own negligence in not intimating to Mr. Baily before.

Yours truly,  
C. G. WRIDGWAY.

N.C.U. TO MR. WRIDGWAY.

Date as post mark—March 28th.

I am in receipt of your letter which has been forwarded to Dr. Turner, 9 Sussex Gardens, Hyde Park, W., Hon. Sec. of the Pro-Licensing Committee, to whose department it refers.

(No Signature.)

Reverse side of post card:—

C. G. Wridgway,  
50 Keppel Road,  
Chorlton-cum-Hardy.

MR. WRIDGWAY TO N.C.U.

DEAR SIR,—I am in receipt of your post card of 28th, to which I have not replied sooner, as I have been waiting for a reply from the gentleman to whom you handed my letter. It astonishes me that you, as Secretary of the National Cyclists Union, and thereby conversant with all the rules and regulations appertaining to that body, should not be in a position to answer a few simple questions which I put to you in my letter

of 27th. Even had I been inclined to take out a N.C.U. licence, the mere fact of not receiving a satisfactory reply from you would have immediately settled the question, as I should certainly not take out a licence from the N.C.U., who wish to instal themselves as a governing body concerning motor racing, unless I have seen their rules and regulations. I asked you very fair questions, and questions which ninety-nine persons out of a hundred would have asked, and I cannot congratulate you upon the method in which the N.C.U. have started upon their self-imposed task, if this sort of treatment is a sample of what all motorists are to expect from you. I should certainly have thought that the governing body, who place themselves at the head of a sport or pastime, would have printed rules and regulations concerning that particular sport ready to be sent off at a moment's notice when they were required.

Yours truly,  
C. G. WRIDGWAY.

P.S.—It is customary in this country when addressing an envelope to a gentleman to insert the word Mr. before, or Esquire after the name, and not simply the name of the gentleman, but this is evidently a simple form of etiquette which has not been learned by the paid servants of the N.C.U. Perhaps you will kindly note in future.

N.C.U. (LONDON CENTRE) TO MR. WRIDGWAY.

March 29th, 1899.

DEAR WRIDGWAY,—In reply to your letter of the 27th inst., I beg to state that you are under some slight misapprehension with regard to the motor race on Easter Monday.

Mr. F. W. Baily has not applied for a permit, and it consequently follows that it is an unregistered meeting; and in consequence thereof, under the N.C.U. rules, you cannot obtain a licence either professional or otherwise if you ride at such a meeting.

I may say that the N.C.U. do not insist upon your obtaining a licence, but they only inform you that in the event of your riding at an unregistered meeting you would not be able to have a licence hereafter.

Motor races come under N.C.U. rules, 103, section F.

Yours truly,  
(Signed) W. MITSON, Hon. Sec.

MR. WRIDGWAY TO N.C.U. (LONDON CENTRE.)

DEAR MITSON,—I am in receipt of your letter of 29th ult., which I have only just received owing to my absence in London. I was surprised to have a reply from you considering that my letter was handed by Mr. Noble to Dr. Turner, and I had absolutely no acknowledgement from the latter. However, I suppose it is his general way of dealing with letters received by him, which shows his lack of courtesy. I am under no misapprehension whatever in regard to the motor race which was held last Easter Monday; all that I asked in my letter of 27th were a few simple questions to which, up to the present, I have not received any satisfactory reply.

You state motor races come under N.C.U. Rules 103 section "F." I have read this before somewhere, but that was not what I was asking, and it leaves me absolutely in the same position as I was before writing to the N.C.U. upon the subject. Now I will take a paragraph of your letter which runs as follows: "I may say that the N.C.U. do not insist upon your obtaining a licence, but they only inform you that in the event of your riding at an unregistered meeting you would not be able to have a licence hereafter." This is the first intimation that I have had from the N.C.U. upon the matter, and which information, by the way, arrived too late. Now I will take Mr. Coleman's letter of the 25th ult. to Mr. Baily, which runs as follows: "I have got leave for and I to time the motor races provided Wridgway and the Frenchman take out licences (which can be obtained from Dr. Turner at once) in the usual way." Who is correct? Here we have two officials of the N.C.U., and both differ on the same subject, and I take it for granted that any person racing under N.C.U. rules would be obliged to obtain a permit, either amateur or professional, before being able to compete in the races, yet you tell me that in my case it was not necessary. Am I the exception which proves the general rule?

Now, the whole thing turns upon the unsatisfactory manner in which the N.C.U. deal with letters demanding a few particulars from them; it is handed round on the it-is-not-my-work principle, and at the present time I am still awaiting a satisfactory and straightforward answer to my queries put forth in my letter of the 27th ult.

Yours truly,  
(Signed) C. G. WRIDGWAY.

### THE PENNINGTON v. MORS CHALLENGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter of the Automobile Association, Ltd., one would think from their tone that they were actually anxious that this contest should come off; but from the fact that they have been constantly changing their ground and bringing in fresh conditions in each new letter, we are by no means so sure that they are in earnest, though if they are we will do our best to gratify them. It will be remembered that when we first took up their challenge, the editor of a contemporary, who had been chosen as umpire by both



sides, declined to have anything to do with a road-racing contest in this country, on the ground that such a contest would be an infringement of the law, and be detrimental to the best interests of the motor-car movement. When we therefore proposed, as an alternative, that the cars should be tested on a hill-climbing match, the Automobile Association protested against the idea, and said that motor-cars were not intended to act as "lifts." As, however, various correspondents, and the public in general, have felt that such a match would be of real interest to motor-car users—it being notorious that, up till now, many types of motor-cars have been very deficient in hill-climbing qualities—the Automobile Association have evidently now thought better of this matter and announce their willingness to run against us on the hill. We are willing, and hereby challenge the Mors car to a straightaway run, commencing ten miles south of the summit of Shapfell, on the main road between Kendal and Carlisle, which is practically one long ascent, both cars to make the ascent to the summit twenty-five consecutive times, and the car which makes the best aggregate time on this 250 miles of hill-climbing to be considered the winner; the time of descent not to be reckoned, but such is not to exceed the time occupied in the ascent. For this match we will enter our two-cylinder motor-car carrying two passengers—the Mors car to carry the same number—but we are indifferent as to whether their car has a 10-horse or even a 16-horse power motor, and has two cylinders or four. Of course, we shall not enter our little one cylinder 125-guinea car against a Mors four-cylinder 380-guinea car, as this particular car of ours is designed for popular use in England, and consequently is not geared high.

It must have amused your readers when such a proposition was made by the Automobile Association. The Automobile people have a good deal to say about the water circulation of our car, about which they evidently know nothing. Had we wished to say nasty things we might have referred to the way which the Mors car occasionally melts off its pipes, owing to over-heating, and it is possible this defect in the Mors car has made them think that we are labouring under the same disadvantages.

When the Mors car was on show in Manchester a few weeks ago we made several attempts, directly and indirectly, to get up an impromptu race with them, but there was always some excuse, such as tires gone wrong or some part needing to be replaced, to prevent such a contest coming off.

Yours faithfully,  
PENNINGTON & BAINES.

#### THE COMMERCIAL EFFICIENCY OF THE PENNINGTON CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Messrs. Pennington and Baines' letter in your last issue, I am afraid that I do not quite follow what it is that they really wish. All I want is to see one of their cars in the hands of a private user, so that I might accompany same for a run of about a hundred miles to see how it performs. The reason that I wish for this is because their car, on paper, seems to be exactly the thing I want myself.

The very thing which they advertise in the last issue of *The Motor-Car Journal*, and which they call their "Victoria de Luxe," is a car which I will at once purchase if they will show it to me running over a journey, providing it looks as if it would wear well.

Instead, however, of publicly testing their cars, or saying where some private user has one, they write a letter to your paper trying in some way to mix me up with company promoting and asking me if I had any interests in various companies who are interested in motors. Naturally I told them exactly what companies I was interested in, simply because this information was never private but always public property. They then say that I admit my connection. I never denied it. I was always proud of my connection with the companies referred to.

From these remarks, which seem to me to be of no interest to anyone, they go on to say that as I have the motor industry so much at heart they would like to match their 110-guinea car against some other car. Why I should be expected to find a car to match against theirs I really do not know. No company in which I am interested makes anything of the sort, and my interest in the Pennington car is simply that of a would-be purchaser. I see marvellous things claimed for the article, and want to have the opportunity of seeing these claims borne out in public.

I think if Messrs. Pennington & Baines would accept the challenges of some of the people who want to race them, instead of trying to make up more matches, which, so far, they seem to have taken good care not to let materialise, and run their car, under proper auspices, for five hundred miles on the road, it would do them more good, if they want to advertise the car, and would certainly prove whether their claims are carried out in practice or not.

In regard to the merits of the Ariel Tricycle, I have no doubt that the manager of the Ariel Company is quite competent to put them forward more fully than at the present, when the order book demands it, but until that time arrives it seems to me he would naturally conclude that it would be useless to spend money in trying to make matches with a firm who, up to the present, have issued many challenges, but so far have no doubt been too busy to carry them out when other people have accepted them.

From letters in your last issue it is evident that the Automobile Association are simply thirsting to take up Messrs. Pennington & Baines' challenge, and from what I have seen of their cars I should say that if the Pennington car can beat them it will be a great feather in their cap, and should make the Pennington firm so busy in executing orders that they should have no more time for writing letters to the press, which, up to the present, have carefully avoided the point at issue.

Yours truly,  
London, W.C., April 11th, 1899. S. F. EDGE.

#### ACCIDENTS WITH HORSE-DRAWN AND MOTOR VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As one interested in the new methods of locomotion I was much struck by three incidents which came to my notice, whilst in London on Tuesday, in connection with horse-drawn vehicles.

No. 1. On passing Northumberland Avenue about mid-day I saw a hansom cab lying helplessly by the side of the road, with the off-side wheel completely smashed—evidently the result of a collision.

No. 2. In one of the streets leading off the Chelsea Embankment four or five men were vainly endeavouring to persuade a horse, attached to another hansom cab, to move. For four or five minutes I witnessed various interesting and, to me at all events, novel experiments to attain this end, but I left them at the end of this time with very little progress to show for their trouble. I say "very little" advisedly, for they had only succeeded in pushing the cab—and the horse as well!—a little further down the street.

No. 3. Coming along Piccadilly at night, a large number of people standing in the middle and on the side of the road attracted my attention. On going across, I found that their interest was centred upon a horse lying flat down in the road apparently helpless. The vehicle and harness had been detached, but all attempts to raise him, up to the time that I went on, proved fruitless, and I left those concerned with this—as I say, the third—trouble in connection with horse-drawn carriages which had come to my notice in one day, in a very unpleasant fix.

Of course, I know that the number of motor-carriages in use on the roads in this country is almost infinitesimal as compared with the number drawn by horses; but I only mention these incidents because there are some people strongly

opposed to mechanical traction who would have us believe that an accident never occurs with a horse—only with “those beastly stinking motor-cars”!

Yours, etc.,

London, April 12th, 1899.

G. H. A.

### MOTOR-CAR DEFENCE UNION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The Bench in dealing with motor-car cases are prejudiced, as they were (and are even now) with regard to cyclists, and in consequence one is continually hearing of cases which are simply “Gilbertian,” although I have no doubt it does not strike the victim in this light.

Now, is not the time ripe for the formation amongst the motor-vehicle trade, the users of motor-vehicles, and those connected, of some such association as the C.T.C., that would be able to look after the interests of victims who may not care to be altogether responsible for a well-defended appeal or test case?

Would not the fact that a car was fitted with a “speed indicator” that had been tested and passed by some public body, allow the driver of the car to make a statement that would have weight in a police-court? I have seen these instruments on bicycles, and in fact have used them, and I have no doubt that there are makers able to turn out one that is reliable and cheap.

A. F. E.

Cambridge, April 17th, 1899.

## THE “MOTOR-CAR JOURNAL’S” COMMERCIAL EFFICIENCY TRIALS OF MOTOR-VEHICLES.

IN connexion with the Exhibition of Motor-Vehicles to be held at the Agricultural Hall next July, the proprietors of this Journal have decided to inaugurate a series of trials of motor-vehicles, essentially from a commercial point of view. Racing forms no part of the programme, and it is a feature of these competitions that no vehicle shall travel at an average speed which is greater than the maximum permitted by law. Gold and silver medals will be awarded to all contestants who carry out a series of specified journeys within the limit of a certain given maximum and minimum time: thus the competitors will gain no advantage by indulging in racing, which, indeed, the proprietors of this Journal object to most strongly.

There are fourteen different classifications of vehicles, each one being allotted a task well within its capacity, and varying according to the type of vehicle, and to the regulations of the Board of Trade as to the speed to be travelled. The competing vehicles in each class will each have to travel over the same roads on the same days, and, excepting a few minutes' interval in their starting, exactly at the same hours.

The trials of each type of vehicle extends over three days, and the allotted journeys have to be completed within the limits of the set times on each of the three days, and this without effecting any repairs or making other adjustments than those within the capacity of an ordinary motor-car driver, and those possible to be effected by means of the kit of tools generally carried on such vehicles. A compulsory stop is arranged as nearly as possible in the middle of each day's task, and this is allowed for in the maximum and minimum times allotted for completing the journey. No allowance will be made, however, for any other stops, and it is needless to say that an observer acting upon behalf of this Journal will accompany each car. Shortly, the competition may be said to test the ability of the vehicle to run a given distance according to class or type out and home each day for three consecutive days. The routes selected will be of a fair give-

and-take character, and it is not proposed that any extraordinary task shall be set, it being the aim that the designed task shall be as nearly as possible in accordance with the duties required of a motor-vehicle in ordinary private use.

The classes comprise delivery vans carrying 15 cwt. of goods, propelled (a) by electricity and (b) by petroleum spirit motor; goods vehicles carrying 30 cwt., and goods vehicles carrying 3 tons. In addition, all these vehicles have to carry at least one person besides those necessary for driving the vehicle. The pleasure carriages are comprised in four classes, two of them being devoted to two-seated vehicles, one propelled by electricity, and the other by steam or spirit motors, and two classes for four-seated vehicles, one propelled by electricity and the other by steam or spirit motors. Four classes are devoted to motor-vehicles carrying eight persons and sixteen persons, one of each type being driven by electricity and the other by steam or petroleum-spirit motors. The fourteenth class is devoted entirely to carrier motor-tricycles or voituresses, having motors developing no more than 3 h.p., and carrying not less than 200 lb. weight of goods in addition to the driver.

Another competition also forms a part of the programme. This is for any type of vehicle carrying four persons or a similar weight in goods. The feature of this competition is the longest run possible to be effected with one supply of fuel, power, lubricant, etc., as is arranged for vehicles of the type entered. It is not intended that this class should embrace vehicles especially built with abnormally large power-supplies, but is intended to embrace commercial types of vehicles only. Arrangements are also in progress for furnishing the means for testing motor-tricycles. With these vehicles, however, speed is the great consideration, and these trials, if ultimately carried out, will be run on a racing track before the Exhibition takes place. The whole of the other trials will take place between July 3rd to the 16th, during the continuance of the Exhibition at the Agricultural Hall. The start and finish will be from the Agricultural Hall itself, and therefore the heavy traffic of Islington will have to be negotiated, both on the outward and homeward journeys.

Entry forms for the competition are now ready, and these, together with fuller particulars, may be obtained post free on application to the offices of this Journal.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publisher beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, APRIL 21st, 1899.

[No. 7.

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## COMMENTS.

### The Delbruck Motor-Tricycle Hill-climbing Gear.

Garnier, Nice, it was necessary to bring the motor almost to a standstill before attempting to change the gears. This was a slip of the pen, and we should have said that it was necessary that the speed of the motor-tricycle should be very considerably reduced before attempting to put the change gear into operation. When it is desired to place the slow speed into operation, the machine is of course mounting a hill, and the extra demand on the engine will necessarily reduce the speed automatically; it is at the precise moment when it is felt that the motor is called upon to do too much work that the slow speed gear should be put into operation, and, therefore, it is not actually necessary to reduce speed, as that is done by the demands upon the engine being excessive. In changing back to the high gear, the same state of things exists, as the slow gear having been in operation it is perfectly easy to throw in the higher speed gear. In fact, with a little practice it is possible to throw either gear into operation when travelling at from ten to twelve miles per hour, so that it will be seen that the necessity of "stopping" or slowing down the speed of the vehicle is only a relative expression. The great advantage of the Delbruck gear arises from the fact that it can be attached to or removed from the tricycle in about two minutes, and in addition there is no necessity for any change in the construction of the tricycle, or the gear wheels already fixed.

### The Motor-Omnibus Companies.

WE have reported in a previous issue that the London Steam Omnibus is proceeding quietly, but we hope surely, with its work, and endeavours to conquer the immense difficulties in constructing a vehicle to carry a large number of passengers at a fair speed on the London roads. We hear also that all threats of litigious proceedings are being quietly overcome, and that the Directors have secured some further valuable and very necessary concessions from the promoters which should enable them to face the shareholders with a much better programme than was originally laid down in the prospectus. All that is now needed is successful vehicles, and these, we understand, are well under construction. The other London Motor-Omnibus Company is apparently, however, in much the same state as it has existed since May, 1896. We cannot hear that the London Electric Omnibus Co. has made any progress in the construction of a workable electric omnibus. Shareholders are, of course, complaining bitterly, for apparently no satisfactory explanation is forthcoming as to the progress made in the experiments which were promised should be made. It will be remembered that at the last meeting the directors succeeded in getting rid of Mr. Ward, whose services were regarded by them as an incumbrance rather than a help;

but, so far as we can learn, the position of the Company does not happen to have advanced very materially since that time. Will the chairman or secretary favour us with a little information for publication?

### Sir William Bailey and Co., and Motor-Cars.

IN our last issue we gave currency to a report received from a Manchester representative, to the effect that the well-known firm of engineers, Sir William Bailey & Co., of Salford, had decided to take up the manufacture of motor-cars, and had, in fact, acquired new premises for this purpose. We now learn, however, that this is an error, and that the firm have at present no intention of taking the course indicated. As will be seen from other remarks in the present issue, the motor-car industry in Manchester is, however, flourishing "like a green bay tree," in fact, both the two great Lancashire cities are well to the front in taking up the study and employment of motor-vehicles.

### Motor-Vehicles in Cottonopolis.

ALTHOUGH we have this week to contradict the paragraph about Sir W. Bailey having taken extensive works for the manufacture of motors, yet another rumour we venture to repeat, *i.e.* a syndicate has taken an extensive plot of ground in Old Trafford Park for the erection of works, wherein to manufacture an entirely new form of motor. Colonel Pilkington, glass manufacturer, of St. Helen's, is reported to be the head of the syndicate. The above item is given as told to us and as being rumoured well about in Manchester. It is a fact, however, that Messrs. Simpson and Bodman, have taken new premises at Cornbrook, Manchester, and that these are being equipped with the latest tools for the manufacture of their steam-driven lorries. Messrs. Simpson & Bodman have been experimenting for nearly four years, and their vehicle, they are of opinion, is now commercially efficient. At all events, three of them will be entered for the Liverpool trials, and possibly, if time allows, one may be shown at the the Agricultural Hall Exhibition in July. Mr. Thornton, of the Thornton Motor Co., Ltd., has been experimenting for the last two years, and he is now having built a heavy oil driven lorry for the Liverpool trials. Possibly, if time permits, this may be seen first at our exhibition. The new works of the above Company consist of three floors of a warehouse of 3,000 square yards each floor, so that our readers can see that Manchester is very much alive to the importance of the new industry.

### An Irish Motor- Vehicle Match.

IT is reported in the Irish Press that a well-known Dublin physician, who is an enthusiastic believer in motor road-locomotion, has entered into a wager to run his car from Dublin to Galway, a distance of 135 miles, within a period of twelve hours. To an ordinary motor-carist this does not seem a very onerous task, but when the roads are taken into con-

sideration the task is more formidable than it at first appears. The roads are not only hilly, in fact *very* hilly, but like most Irish provincial roads they are in a very bad condition, the surfaces being loose and uneven, whilst in the valleys they are quagmires. Even at the best of times they are full of ruts, and tires and chains will have to stand a vast amount of strain. We are inclined to think that the doctor will, however, be able to win his wager, given that he has fair luck. The time allowed for the journey, twelve hours, is to include all stoppages, no matter for what purpose, and it is proposed that the contest shall take place during the coming month.

#### A Trip on a Benz Car.

ALTHOUGH last Saturday looked very gloomy in London we were very pleased to accept the invitation of Mr. Hewetson to have a run round the Surrey villages on one of his cars. We journeyed *via* Putney Bridge, Kingston, where we met Mr. and Mrs. Mulliner (Brook Street) on another Benz car, to Leatherhead, and then on to Effingham. At this pretty Surrey



village (at the Blucher Arms, a well-conducted hostelry) we met Mr. Frank Butler on his double-cylindrical Benz, and two other Benz cars. Afternoon tea was indulged in here, and then some photographs were taken, one of these being reproduced here. With Mr. Hewetson and Mr. Butler we journeyed on to Guildford for dinner, and during that meal a discussion as to the climbing capabilities of the two vehicles took place. This ended in a small bet, which was to be decided next morning, and the "Mount" was to be the *venue*.

#### The Mount, Guildford.

WE stayed at the White Lion Hotel, and after a capital breakfast visited Mr. Lowes for petrol, being there joined by Mr. and Mrs. Knight, residents in the town and owners of a Benz vehicle purchased from last year's exhibition at the Agricultural Hall. The arrangement of the wager was that each was to drive his car up the "Mount"—and Mr. Hewetson insisted on our riding up with him. We may mention that both cars are fitted with Crypto gears, and the one that mounted the hill is geared down very low. This car went up very well indeed—possibly two miles an hour—but the hill is one that it would be necessary to go a very long

way indeed to find its equal. In fact, we are of opinion it is about one of the stiffest in the country, and we arranged with Mr. Lowes to have the gradients taken by a surveyor, so that we can give the exact averages. To turn round at the top of the stiff part was risky work, but was accomplished, and we came down on the Crypto gear, without the use of any breaks. The second car did not try the experiment a second time.

#### Beyond Godalming.

AFTER negotiating the "Mount," we went on to Mr. Buttemer's house, about three miles beyond Godalming, but in the meantime the spring of our exhaust valve had broken, hence our progress was somewhat slow for the last half mile, but fortunately Mr. Buttemer, who owns a Benz car, had a pit, with planks over, so the defect was easily remedied. A long stay was made at our friend's house, and then we made, under Mr. Buttemer's guidance, a start for the lovely villages—beloved of painters—of Albany and Shiere. After visiting the Silent Pool, the claims of nature took us to the White Horse, at Shiere (an inn to be recommended), where we had a capital luncheon. The rain, which had been threatening for some time, here began, and shortly after four a start was made for home, the ride being in the teeth of a very unpleasant storm of rain, sleet, and hail. London was reached before dark, and a very pleasant time, notwithstanding the weather, was brought to an end. All the Benz cars ran splendidly, and gave little or no trouble (excepting the broken spring), and in conclusion we can only echo the remark of a young lady's admiration, "What a dear little motor."

#### A New Primary Cell.

WE alluded in a previous issue to the production of a new primary cell which had an E.M.F. of 2.45 volts. This battery is an American invention of Mr. J. D. Darling, who has acquired some very considerable reputation in America for his work in electro-chemical matters. We stated at the time of our first allusion to this battery that we were not sure that it would be suited for motor-vehicle work; but we now hear from the makers, Messrs. Harrison, Bros. & Co., of Philadelphia, that they have conducted experiments which prove that this battery is very highly efficient in igniting the charges of petroleum-spirit engines where the revolutions do not exceed 400 per minute. Further experiments are now being conducted with a view to prove its efficiency at a higher speed. The cell is not at present on the English market, but it is proposed to bring it to this country very shortly.

#### The Automobile Club's Whitsun Tour, and Club Dinners.

THROUGH a clerical error in the announcement sent to us by the Secretary of the Automobile Club, we last week reported that the Club's Saturday run to Frensham would take place on the 22nd inst. In a further communication from Mr. Johnson, we now learn that the date of this run will be Saturday the 29th inst. It is intended that the start shall take place from the Club at nine o'clock in the morning on that day, luncheon being served at Frensham, and the return to town being made on the same day. As we intimated in a previous issue the Club's Whitsun tour will be through Shakespeare's country. The party will start on Friday, May 19th, at 10.30 in the morning from the Club premises. The first day's journey is 56 miles, the destination being Oxford, and the route *via* Hyde Park, Ealing, Southall, Uxbridge, Beaconsfield, to High Wycombe, where lunch will be served at the "Red Lion" Hotel. Leaving High Wycombe the route continues *via* Stokenchurch, Wheatley, to Oxford, a club dinner being served in the evening. Saturday's run will total 53 miles, the destination being Leamington. The mid-day break will be made at Stratford-on-Avon, the route followed to this place being *via* Banbury,

Wroxton, and Ettington. An afternoon break will be made at Warwick, which will be reached *via* Longbridge, the club dinner being held at Leamington. On Whit Sunday an optional tour has been arranged from Leamington to Redditch, Alcester, and back. The route to Alcester will be *via* the Ridgeway, the route traversed being one of the most beautiful in the district, including, as it does, Warwick, Claydon, Henley-in-Arden, Ullenhall, Ipsley Court, to Redditch, through Headless Cross by the Ridgeway to Dunington, and thence to Alcester, where luncheon will be served. The return journey to Leamington will be made by Stratford-on-Avon and Warwick. On Whit Monday Leamington is still retained as the headquarters, and a trip is arranged to Stoneleigh, Kenilworth, Birmingham, Moseley and back. The departure from Leamington takes place at 9.30 in the morning, and it is proposed, subject to Lord Leigh's permission, to drive through Stoneleigh Park to Kenilworth, the route then proceeding *via* Leek Wootton, Guys Cliffe, and Warwick to Birmingham, where luncheon will be served at the Grand Hotel. The return to Leamington will be made *via* Moseley, where Mr. A. Bird has invited the party to afternoon tea. From Moseley the return to Leamington will be *via* Hockley, Rowington, Hatton, and Warwick. Tuesday's journey is rather an onerous one, the whole distance from Leamington to London, 94½ miles, having to be negotiated on this day. Luncheon will be served at Aylesbury, the route from Leamington to this town being *via* Southam and Banbury, and that from Aylesbury to London *via* Amersham, Uxbridge, and Ealing.

#### Press Reports on Motor-Vehicles.

WE have become so accustomed to finding ludicrous and utterly misleading reports concerning motor-vehicles in the daily newspapers that we no longer take any great notice of them. We see, however, that the Cycling Press of the country has latterly devoted considerable space to the doings in the world of automobilism, and to the credit of these journals generally it may be said that no undue exaggeration has been customary. A notable exception, however, occurs in the issue of the *Cycle* for the present week, where the following appears: "I heard many terrible tales as to the 'auto-cars in the direction of Salisbury and the New Forest. 'One enormous steam vehicle, carrying thirteen passengers 'at a speed of 20 miles an hour, or more on occasion, excited 'much unfavourable comment, says 'Montagnard' in the *Sporting Life*. It dashed about like a mediæval dragon 'belching forth fire, with three blazing lamps in front, 'calculated to make a blind bathing-machine horse jump the 'hedge and take to the country, and its pace downhill, 'especially near White Parish, was alarming." We can excuse a penny-a-line reporter for breaking out into such language as is here quoted, more especially when it occurs in such a paper as *Sporting Life*, but it is inexcusable for a journal like the *Cycle* to reproduce such utter rubbish without administering a correction to the contemporary from whose columns the remarks were "lifted."

#### The Morecambe and Lancaster Motor-Vehicle Service.

THERE has been quite a "storm in a tea-cup" over the licensing of the cars run by the Lancaster and Morecambe Motor-Car Co. between Lancaster and Morecambe. The Lancaster District Council had no hesitation in licensing the vehicles for service, but this is not the happy state of things in Morecambe. In the first place, the Morecambe District Council refuse altogether to license these vehicles, but the Hackney Carriage Committee received a renewed application from the Motor-Car Company, who desired to run their vehicles, if possible, during the Easter holidays. The Hackney Carriage Committee of this Council were, however, more complacent than was the Council as a whole, for it having been demonstrated to them by trial trips and otherwise, that it was perfectly safe to run these vehicles, they

granted a provisional license, whereupon at the next meeting of the District Council a Mr. Cryer very strongly objected to the Hackney Carriage Committee thus over-riding the decision of the Council. Mr. Cryer seems to have been well-named, for his "piteous cry" would move anyone less used to him than the Morecambe District Council to comply with his wishes out of sheer pity. Fortunately, however, the Council knows him well, and although it could not prevent him making complaint, yet, as a result, no attention was paid to it.

#### The Dunmore and Waterford Motor-Car Scheme.

WE understand that the projected motor-car service between Dunmore and Waterford has been further considered at a meeting of those concerned with gratifying results, notwithstanding the suggestion of one gentleman that a tramway service should in preference be substituted. It has been said that the traffic between Waterford and Dunmore is hardly sufficient to justify the expenditure which would be necessary to give an efficient service of motor-vehicles. If this be the case—we strongly doubt it—the traffic would certainly not warrant the considerably greater expense of laying down a tramway system, and we think, therefore, that the Mayor, Mr. I. C. Strange, and Alderman Goff, J.P., will be well advised to adhere to their original proposal of providing a motor-vehicle service.

#### Isle of Man and its Motor- Car Services.

THE Manx Cycle and Motor-Car Hiring Co., Ltd., have encountered very serious difficulties in gaining the necessary legal permission to run a motor-vehicle service in that ideal resort of summer tourists, the Isle of Man. The Bill legalising the use of motor-cars has now passed the House of Keys, but has to receive the additional sanction of the Upper House of Tynwald Court before it becomes law. After passing the Upper House the law is promulgated from Tynwald Hill, and as this cannot take place till July 5th, the motor-cars cannot legally be used in the island until after that date. Those visitors to the Isle of Man who have witnessed the promulgation of new laws from the Tynwald Hills will appreciate the attractiveness of this ancient custom. We hope that on July 5th next there will be a considerable number of motor-carists, together with their vehicles, in waiting to hear the announcement of the possibility of running motor-vehicles in the island and to form a parade through the district of St. Johns' to celebrate the occasion.

#### Torquay and Motor-Cars.

A CORRESPONDENT writing to the *Torquay Times* over the pseudonym of "Black Lion" writes as follows:—"Will you endeavour to convince the 'Town Council that the horrible abomination designated a 'motor-car' is a 'terrible nuisance to owners of carriages using the Torbay 'road. I have witnessed many narrow escapes, and have 'heard visitors complain loudly and bitterly of the authorities 'allowing such a noisy and ugly machine to frighten valuable 'horses. My own experience is that, although a large rate-payer, I am debarred from using our finest mile of road, 'and compelled to make a long detour, so as to avoid 'risking life and limb. If cabmen or cyclists rode at the 'same pace as this 'thrashing machine' occasionally 'travels, they would run a risk of being prosecuted 'for furious driving. Surely something can be done 'to stop further damage to Torquay carriage traffic." A finer example of selfishness could hardly be brought forward than the "Black Lion's" letter just quoted. In the present instance the "Black Lion" cannot be complaining of the vehicles of the London Motor Van & Wagon Co. Now, in the neighbourhood of Torquay there lives Mr. Eugene Paris Singer, who, is, we are sure, a larger landed proprietor



than "Black Lion," and probably also a heavier ratepayer. He, as is well known, is an enthusiastic motor-carist, having gained his experience in France and possessing quite a fleet of automobile vehicles. Possibly it may be one of this gentleman's carriages which has raised the "Black Lion's" ire, and so caused him to publicly demonstrate his selfishness. However this may be, "Black Lion" may rest quite assured that his strength is not sufficient to prevent the use of motor-vehicles even in conservative Torquay.

#### Trailing Cars for Motor-Tricycles.

SMALL trailing cars for attachment to De Dion and other motor-tricycles, giving accommodation for an additional rider, have for some time been very popular in France. A later development of the demand for additional seating accommodation on motor-tricycles is the introduction of an extra seat mounted on a pair of wheels intended to replace the single front wheel of the tricycle, so converting the latter into a two-seated quadricycle. One of the latest attachments of the latter kind to come under our notice is that which has lately been put on the market by the London Autocar Co., Ltd., 182 Gray's Inn Road, London, W.C. It comprises, as usual, a comfortable seat mounted on a pair of pneumatic-tired cycle wheels, with footboard, etc., the feature being the readiness with which it can be attached to a motor-tricycle. The connection between the rear axle of the tricycle and the new attachment is made by two long tubes, one on each side, pivoted at and braced by a cross strut about the centre, two clips and bolts being used to connect the tubes to lugs on the rear axle. The connection of the attachment to the tricycle is further strengthened by two stays—one each on the two longitudinal tubes—these two stays meeting just behind the head of the tricycle and being connected to the lower cross tube of the frame by a band-clip. A further stay also connects this cross-tube of the frame with the strut between the two longitudinal tubes. Every precaution is thus taken that the connection of the attachment to the tricycle shall be quite rigid and secure. The makers claim that the operation of converting a tricycle into a quadricycle, or *vice-versa*, can be performed in about ten minutes. The steering is effected through lever-rods connecting the front wheels with the lower ends of the front forks of the tricycle. The weight of the attachment is stated to be about 25 lbs. The front seat is neatly upholstered, and is provided with a back rest, so forming a comfortable seat for a lady rider. There must be many motor-cyclists anxious to enable a friend to participate in the pleasures of "motoring," and to such the London Autocar Co.'s attachment should be just the thing wanted.

#### The Willington Quay District Council and Motor-Vehicles.

THE Willington Quay District Council have had under consideration the providing of motor scavenger vans for some time. They have investigated several types of cars, including those made by Messrs. Thornycroft, of Chiswick, and the Committee entrusted with the report have stated that, as a result of their investigations, they found that one car could do the work of three horses. The consideration of the report is deferred until the next meeting of the Council in the coming month, when additional information is to be obtained, and a decision as to the provision of these vehicles finally determined.

#### A Warning from Gloucester.

THOSE automobilists who may be in the vicinity of Gloucester city and in want of motor-car spirit will, we are sure, be glad to learn that they can obtain supplies from Mr. J. Wilson Taylor, of Blackfriars Lawn. Mr. Taylor writes to us and would very kindly warn automobilists to moderate their speed when approaching or going

through Gloucester. He tells us that he himself has been summoned three times for, as he puts it, *supposed* furious driving, and therefore, like a good *confrère*, desires to prevent his brother automobilists from having to undergo similar experiences. If any others of our readers know of districts where the authorities are prone to exaggerate the speed of automobile vehicles, we shall be glad to receive information from them with a view to its publication in these columns.

#### The Sunderland Motor-Car Service.

SUNDERLAND'S motor-car service is proving so eminently successful that the Syndicate controlling it hardly knows what to do pending the arrival of the five additional cars now on order, and the four to be subsequently put in hand. Originally only one car was running in the West-end of Sunderland, and the service ceased at eight o'clock at night. Now, however, there are two carriages traversing the Holmeside and Chester Road district, and so great is the public demand for these conveyances that the service is continued until eleven o'clock at night. Another service that has been started is between Sunderland and Silksworth. Other services are projected between the Wear-side borough and South Shields, and another between Tynemouth and Blyth.

GUILDFORD is becoming quite a centre for motor-carists, and therefore it is only natural that an enterprising inhabitant—Mr. Laures—should lay himself out for the catering of *chauffeurs* by having qualified assistants to act as repairers in case of breakdowns. Mr. Laures, of the Guildford Motor-Car Agency Co., stocks petrol, and has erected a platform for cars to run up, so that it is possible to do repairs underneath the car with tolerable comfort.

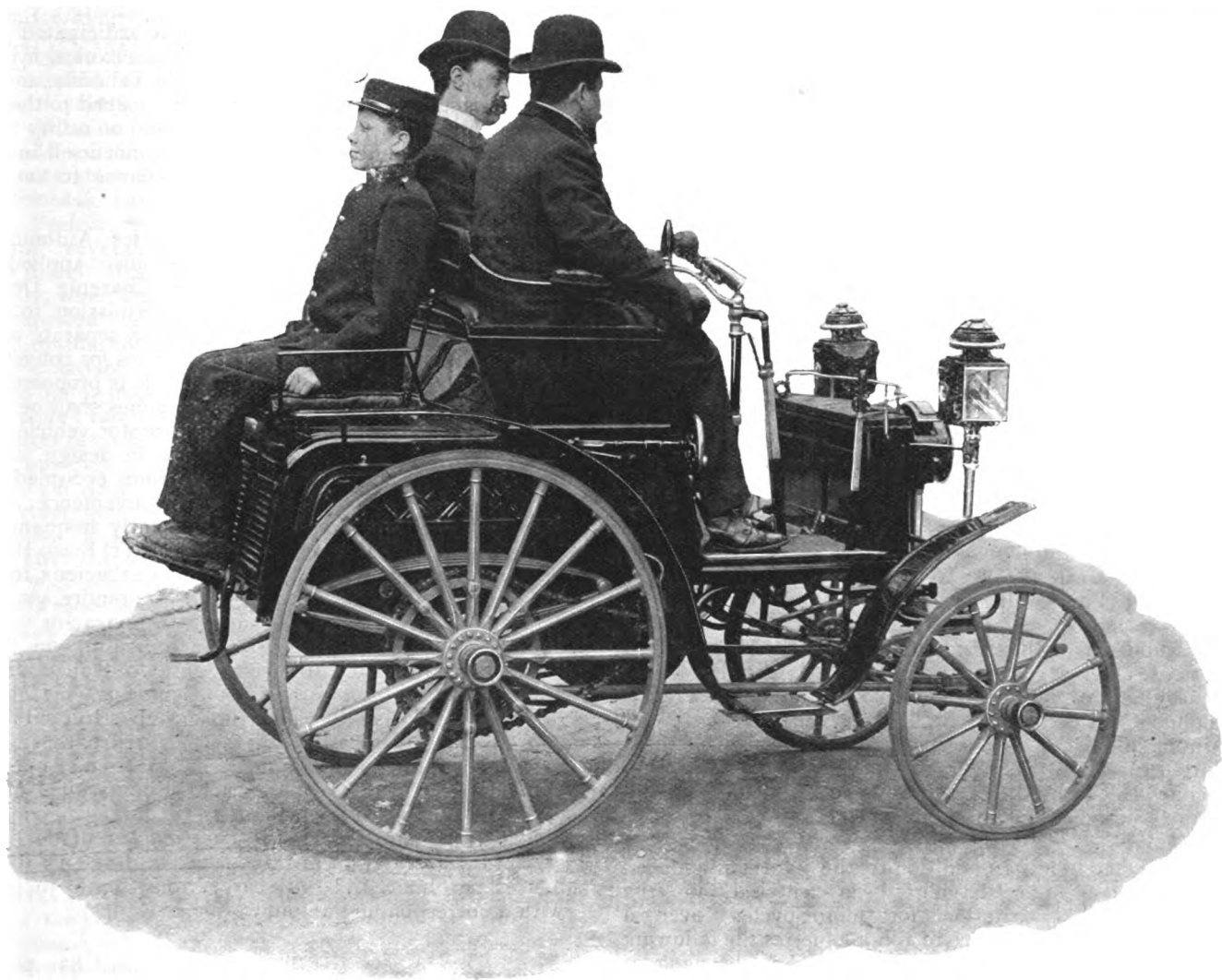
#### MOTOR TRICYCLIST IN TROUBLE.

George Iden, manager of the Motor Manufacturing Company, Coventry, was summoned at the City Police Court, on the 7th inst., for furiously driving a motor-tricycle at Allesley, and also with refusing to stop when requested by a constable. Police-constable Vale stated that defendant was going at the rate of from twenty to twenty-five miles per hour on the Birmingham Road, and that he refused to stop; in fact, when a signal was given, "he put on speed and disappeared out of sight." Samuel Anthoney, landlord of the Rainbow Inn, also gave evidence. Defendant, William H. Thomas, John W. Betting, Peter Binns, and William Wilmshurst all gave evidence against the information of the police; but the magistrate convicted, fining Mr. Iden £5 and costs for the furious driving, and ordered him to pay expenses for refusing to stop.

#### FURIOUS "MOTORING."

At the Guildford Borough Bench, on Wednesday last week, Daniel Michael Weigel, residing at 25 Manilla Gardens, Notting Hill, was summoned for driving a motor-tricycle along the Portsmouth Road on Good Friday at greater speed than was reasonable, and having proper regard to the traffic. There was also a second summons against the defendant, which alleged that he was driving his machine to the common danger of the public. Jas. Glenny Gibb, of 51 Ladbroke Grove, Notting Hill, was summoned for riding a bicycle to the common danger of the public at the same time and place. P.C. Nicolas said that the defendants came along at a terrific rate—fully eighteen to twenty miles an hour. He called upon them to stop, but they did their best to get out of his way, and would have escaped had there not been several vehicles about. Sub-Divisional-Inspector West said there were four other witnesses in court who would prove that the defendants were travelling at the same speed right away from Richmond Park to the Portsmouth Road. It was one of the worst cases they had ever had in the borough. A young man who appeared on behalf of Weigel said that he was instructed to plead guilty, but Gibb urged that the constable was mistaken in his judgment of the pace. Alderman F. Gould, the presiding magistrate, said that the motor-tricycle was a new difficulty which the Bench would have to deal with. In the case of Weigel, the Bench would inflict a fine of 20s. on each summons and costs, amounting altogether to £3 14s.; and in the second case the defendant would have to pay £1 13s., including costs.

## The New "Orient Express" Motor-Carriage.



THE AUTOMOBILE ASSOCIATION'S NEW "ORIENT EXPRESS."

WE illustrate herewith the latest form of the new "Orient Express" vehicles made for the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, London, W., by Bergmann's Industriewerke, of Gaggenau, Baden, Germany. This vehicle is a considerable improvement on anything yet constructed by the Company and sent to their English agents. This carriage, in fact, contains all the latest improvements suggested by the experiments of the firm during the last two years. It is provided with a 4-h.p. single cylinder horizontal petroleum-spirit motor, the explosive gases being ignited by a spark obtained from an improved form of Bosch Magneto-Electric device. The cylinder of the engine is water-jacketed, the water circulating on the thermo-syphon system, a condensor also being employed. The carburetting device fitted to this car is a great improvement on those hitherto used. The makers now utilise the hot circulating water to vapourise the spirituous charge, a pipe leading from the carburettor through the tank conveying the cooling water, and from thence to the engine. Three forward speeds and one backward motion are provided. The vehicle is belt driven, four pulleys being provided on the crank shaft, each connected by a separate belt to corresponding pulleys on an intermediary shaft at the rear. The belts normally run slack, but it is possible to tighten any one of them by means of a jockey-pulley, which, carried on a

travelling carriage, can be made to put either belt in tension as desired. The intermediary shaft carries the differential gear, the rear road wheels being driven by pitch chains through the usual sprocket-wheel devices. We are informed by the Automobile Association that the hill climbing properties of this car are very great, it having mounted that terrible incline at Campden Hill Gardens on second speed. All the steering and control levers are conveniently placed, and the control of the car is instantaneously at the command of the driver. The price of the vehicle is very low, and we imagine this carriage will meet with a ready sale and fulfil the popular demand for a light carriage at a low price.

THE construction of motor-tricycles is being taken up by Messrs. Hoyer & Geahin, of the "Welt-Rad" Cycle Works, Schönebeck-am-Elbe, Germany.

WE are constantly receiving additional names of vendors of motor-car spirit, and we are always glad to chronicle these, as we know the difficulties and unpleasantness of being in a district without spirit, and not knowing to whom to apply. Automobilists visiting Reigate will, in future, be able to obtain supplies from Messrs. T. S. Marriage & Co., of Bell Street, Reigate, who inform us that they now keep a large stock in hand.

## MOTOR-CARS ON THE CONTINENT.

### The Automobile Club of France.

THE Exhibition Committee of the French Automobile Club have their work fully cut out in finding room for the numerous firms who are desirous of securing space at the Club's forthcoming Exhibition in the Tuileries Gardens. As showing, in some measure, the demands for space, it may be noted that on April 11th, 1898, ninety-two firms had secured space for the Exhibition of that year, their united demands totalling 2,717 square metres, whereas on April 11th of this year no fewer than 170 exhibitors had made application for space amounting to 5,876 square metres. In face of strenuous opposition, the authorities have at length decided to grant the request of the Committee for extending the Exhibition space in the Tuileries Gardens, but even with this extension M. Gustave Rives, the energetic Director-General, will have some considerable difficulty in adequately meeting the demands of the firms applying for space.

### Sir David Salomons in France.

SIR DAVID SALOMONS is perhaps the only Englishman interested in the automobile movement, who can lay claim to be in a position to influence the Automobile Club of France and to possess any great power amongst the enthusiastic automobilists of that country. As in England, so in France, Sir David Salomons' name is to be found on all the leading committees and organizations interested in motor vehicles. He is, we believe, a member of the committee of the Automobile Club of France, and also possesses a seat on the executive body entrusted with the management of the forthcoming Exhibition of the French Automobile Club. Recently Sir David Salomons presented the Automobile Club with a magnificent silver gilt trophy, and during the past week his many services to the Club were duly acknowledged by the presentation to him of a large and handsomely designed medal.

### The Motor-Tricycle Contest.

IN addition to the names announced as having been entered in the Criterion for motor-cycles over a distance of 100 kilometres the following four additional entries have been made: Albert le Carpentier, Rolland, Ernest Roguet, and Demescer. The race was held on the 18th inst., and just as we go to press we learn that the winners were as follows:—1st, M. Teste; 2nd, M. Tart; 3rd, M. Osmont; and 4th, M. Bardin. M. Teste accomplished the 100 kilometres without accident in 1 h. 52 m., or about 5 m. less time than was occupied by Monsieur Leon Bollée in 1898. It is interesting to note the time variations for the years in which the contest has been run. In 1897 the winner's time was 3 h. 9 m. 15½ s.; in 1898, 1 h. 57 m. 49½ s.; and in 1899, 1 h. 52 m. The speed on the present occasion was thus over 33½ miles per hour for the whole 62½ miles.

### France Copies America.

WE have become so accustomed to the idea that France leads in everything connected with the automobile industry that it comes somewhat as a shock to find that in one branch of this industry they are following the example of America, who has generally been regarded as being in the background in matters automobile. We chronicled some weeks ago the presentation to a certain hospital of a motor-ambulance by a prominent citizen of a great American city. It appears, however, that France, now inflamed by this example, proposes to establish a motor-ambulance service in connection with the many road races which are held within its borders. The Paris Chateaudun bicycle race is set down for competition on June 11th next, and the first experiment

with these automobile-ambulances will be made on that occasion. It is intended that the ambulance shall start half an hour after the contestants have been sent on their journey. It will carry medicaments for the treating of any injuries suffered by the animate contestants, and in addition a kit of tools for effecting repairs to the inanimate contestants—namely, the cycles. It is anticipated that as a means of repairing both human and mechanical injuries the motor-ambulance will prove extremely valuable, and in view of the serious accidents which have happened to the animate contestants there is doubtless some field of utility for such a vehicle, provided of course that it does not itself break down and need the services of another ambulance to set it going again.

### Public Motor-Vehicle Services in France.

THE Société des Automobiles du Sud-Ouest has just applied to the Prefect of the Charente Department of France for permission to establish no less than fifteen separate services of automobile vehicles for conveying passengers and baggage in that district. It is proposed that the old services of diligences or stage-coaches shall be considerably augmented by means of these motor-vehicle services. The diligences are almost prehistoric in design, are drawn by wretchedly bad horses, and the time occupied on their journey is the cause of considerable inconvenience, and moreover the service is by no means sufficiently frequent to meet public wants. The routes suggested are: (1) From Barbezieux to Angoulême, via Blanzac; (2) from Barbezieux to Chalais, via Brossac; (3) from Barbezieux to Montendre, via Baignes; (4) from Barbezieux to Cognac, via Segonzac or via Criteuil and Saint-Fort; (5) from Archiac to Aigre, via Segonzac, Jarnac, and Rouillac; (6) from Aigre to Ruffec, via Tusson and Courcôme; (7) from Ruffec to Confolens, via Champagne; (8) from Confolens to Saint-Junien, via Brigueil; (9) from Aigre to Saint-Angeau, via Mansle; (10) from Saint-Angeau to Angoulême, via Champniers; (11) from Angoulême to Garrat; (12) from Angoulême to Ecuras, via Montbron; (13) from Mansle to Angoulême; (14) from Cognac to Pons; and (15) Cognac to Matha. The vehicles intended for these services will run at an average speed of from 15 to 18 kilometres per hour, and will carry from 20 to 30 passengers with a corresponding amount of baggage.

### The State Regulation of Motor-Vehicles in France.

THE *Journal Officiel* has published a decree signed by the President of the French Republic, which embodies regulations designed to control the circulation of self-propelled vehicles on the public roads in France. This document contains many precise and detailed sections regulating the speed, the passing, the driving, and the controlling of vehicles, and the formalities to be carried out before putting on the roads any carriage for public hire or otherwise. With the exception of speed regulations to which reference has been made in previous issues of this *Journal*, there is nothing, however, of any very considerable interest to *chauffeurs*. The speed regulations are certainly somewhat severe in view of the pace at which it has been customary for such vehicles to traverse even the roads of large towns, but we fear that these regulations will not have any very deterrent effect upon the French *chauffeurs*, for the reason that, with the means at their disposal, the Government will find it extremely difficult to enforce the regulations.

### The Pau-Bayonne-Pau Road Contest.

THIS contest, which was organized by the Automobile Club, Bearnais, has resulted in a very interesting competition, the weather being magnificent, and the whole of the 24 competitors leaving in good time at half-minute intervals. The contestants left in the following order: A. Lemaitre (two-seated carriage), Etienne Giraud (two-seated carriage),

Gras (two-seated carriage), Rigal (motor-tricycle), Béconnais (motor-tricycle), Vasseur (motor-tricycle), Boyer (voiturette), Duanip (motor-tricycle), Pascault (six-seated carriage), Debacker (motor-tricycle), Renouille (four-seated carriage), Merle (voiturette), Géo (motor-tricycle), Comte de Galiffet (four-seated carriage), Barbereau-Bergeon (four-seated carriage), Cuzac, Jaudet, Magendie (all motor-tricycles), Menjou (six-seated carriage), Couderc (motor-tricycle), Laffitte (six-seated carriage), Dumoulin, Joyeux, Labadie (all motor-tricycles). It was prophesied before the race that Monsieur Lemaître on his 18-h.p. Peugeot carriage would certainly prove to be the winner. Before the contestants started Monsieur De Thorn, the President of the Automobile Club Bearnais, and Count Nitot conveyed the Prefect of the Basses-Pyrenees, the Mayor of Pau, and several other guests to an advantageous spot on the route. The first breakdown occurred very soon after the start, when Giraud had to give up and return, his power-transmission device having broken down. At the termination of the run to Bayonne, Lemaître was actually first at 11.45, having covered 103 kilometers in 2 h. 20 m. Rigal, on his motor-tricycle, was the next to arrive at 11.47½, having completed the distance from Pau at an average rate of 53 kilometres per hour. According to the compensation time allowances, however, Rigal was credited with doing the 103 kilometers in 1 h. 58 m., which beats all previous records either on track or road, and, in addition, surpassed Lemaître's time by 18 seconds. Rigal, however, had evidently over-exerted himself, for after completing the 103 kilometres and reaching Bayonne he was compelled to give up the contest owing to inability to traverse any further distance. Monsieur Lemaître arrived back at Pau at 2.27½ p.m. If all time allowances for stoppages are taken into consideration we find that Monsieur Lemaître's record for the whole journey of 206 kilometres comes out at an average of 52.2 kilometres per hour. Rigal having retired, Monsieur Vasseur was the second back to Pau and the first of the motor-tricyclists, arriving at 2.55½ p.m. his average speed for the whole journey being 47 kilometres 340 per hour. The net times of the various classes of vehicles were ultimately pronounced as follows, all time allowances for stoppages and passage through neutral zones being taken into consideration:—Two-seated carriages—first, Lemaître, 3 h. 52 m. 56 s.; second, Gras, 4 h. 42 m. 55 s. Motor tricyclists—first, Vasseur, 4 h. 21 m. 20 s.; second, Béconnais, 4 h. 54 m. 30 s. Touring motor-cycles—first, Couderc, 5 h. 15 m. 55 s.; second, Dumoulin, 6 h. 35 m. 50 s. Four-seated carriages—first, Barbereau-Bergeon, 4 h. 49 m. 20 s.; second, Renauille, 7 h. 21 m. 50 sec. Six-seated carriages—first, Pascault, 7 h. 38 m. 10 s. Voiturettes—first, Merle, 8 h. 18 m. 20 s. Messieurs Lemaître, Gras, Barbereau-Bergeon, and Couderc divided the special prizes offered by Michelin to those contestants who proved to be winners and users of his tires.

#### The Alcohol Competition.

The competition for vehicles propelled by motors actuated by alcohol, which was designed to take place on Tuesday in last week was anything but successful. The weather was execrable and the roads were extremely heavy, so much so that most of the competitors, eleven in number, declined to start. As a matter of fact, only one vehicle went over the course. This was entered by Mons. Geuttin & Co., and constructed by Messrs. Briest and Armand, of Villers-Cotterets. This vehicle started at 10 o'clock in the morning, steered by a Monsieur Briest, who had secured the attendance of a good-willed observer, Monsieur Bibollet, who was clothed in sufficiently impermeable garments to warrant his facing such a storm as was in progress. The carriage reached Chantilly at ten minutes past two, running 68 kilometres in 4 h. 8 m., and consuming 19 litres of alcohol. It accomplished the return journey in 4 h., consuming also 19 litres of alcohol. The 136 kilometres was effected in 8 h. 8 m., the average speed therefore being 17 kilometres per hour.

The commission entrusted with the drawing up of the report is hopeful that alcohol may ultimately be used with advantage for automobile vehicles, but we cannot hold the same opinion in face of various experiments conducted, all of which have resulted in but very ordinary performances.

#### The Turin-Pignerol-Turin Competition.

We have previously announced that the Automobile Club of Turin has organized a contest for carriages and motor-tricycles over a course of 90 kilometres, the route being as follows:—Turin, Orbassano, Piossasco, Pignerol, Trana, Avigliana, Rivoli, and so back to Turin. The contest is open to three classes of vehicles, namely, (A) motor-tricycles carrying one person, (B) motor-tricycles carrying two persons, and (C) three-seated carriages and vehicles of other classes. Arrangements have been made so that in case of inclement weather on the day set out for the contest the race will be deferred until the following day.

#### Automobile Excursions in France.

Automobile excursions, as arranged by the clubs, are becoming more popular every day in France. Among the latest clubs who have organized these pleasure tours is the Bourguignon Automobile Club, an excursion having been planned over a short 100 kilometres course between Dijon, Dôle, and back to Dijon.

### SCOTTISH NOTES.

#### Motor-Cars and the Holidays.

WITH the advent of Spring has come the commencement of the "local holiday" season in almost every town and district of Scotland. In many places these "days of rest" for the tired shopkeepers arrive regularly once a month, and I have been much struck with the enormous demand which I understand has been manifested during the past fortnight for motor-carriages for these occasions. The demand has exceeded the supply many times over. In Edinburgh, for instance, on Monday last every available motor-car in the city was brought into requisition, and even this did not prevent disappointment to many who had been looking forward to spending the spring holiday on a motor-car. Last year at the same time I believe the demand was not nearly so marked. The improvement now apparent is only natural, and is but another hint of the trend of public opinion and public taste. A word to the wise jobmaster should be sufficient. The people now want motor-vehicles, and of course will go where they can get them. I am not of those super-sanguine people who believe that very shortly we must witness the *exit* of the useful cab horse. For a long time to come the provincial jobmaster will not seriously suffer from the competition of the mechanical carriage, but suffer he inevitably will if he does not move forward with the progress of the times by the gradual assimilation of the two businesses. He has already much capital in live and rolling stock, and it would be ruinous to immediately convert his business into a motor-car hiring establishment; but apart from this it is not at present possible to obtain motor-vehicles in all the varied forms which his business requires, and until that time his broughams, cabs, landaus, etc., will not be unprofitable stock. But the time will come when satisfactory motor-vehicles of every form will be obtainable, and these capable of doing good and economical work. In view of that time I cannot impress too strongly upon the leading jobmasters of Scotland the importance to themselves of early identifying themselves with the mechanical carriage, and if possible introducing one or more types without delay into their business. By doing so I think they will prevent the formation of firms and companies with ample capital, having for

their object the introduction of motor-cars in so many suitable parts of the country—concerns which must by and by threaten the very existence of the jobmaster's business.

#### Edinburgh and Glasgow.

EDINBURGH rightly or wrongly has been and is regarded as a highly conservative city, and in certain respects it may be rightly so regarded. So far as the innovation in the form of the mechanical carriage, however, is concerned it is unmistakably an error. Glasgow, on the other hand, is not usually looked upon as a short-sighted or conservative community, yet in relation to the motor-car it has up till now been peculiarly inert and unsympathetic, for I am informed on undoubted authority that for every motor-car in Glasgow Edinburgh possesses *ten*. This is scarcely as it should be, and appears almost inexplicable. I have heard one theory advanced in explanation of this state of things. I give it for what it is worth—viz., that Glasgow has been waiting for the production of a certain new motor which has well-known and influential names attached to it and which has been promised for some some two years past, and is still to materialize. If there is really anything in the suggestion, which I am inclined to doubt, one cannot but admire the patience of the citizens of the Second City. In spite of this apparent lethargy in the commercial capital the use of the motor-vehicle in Scotland is extending at a more rapid rate than two years ago it would have been considered possible at so early a date.

#### Motors at the Coast.

THERE promises to be no falling off in the number of motor-cars at Scotland's popular seaside resorts this year. The Glasgow and West of Scotland Company have started operations again at Ayr with a regular service between the Station and Burn's Cottage and Monument. The cars on this route last year did good work and were well patronised. At both Dunoon and Rothesay, I understand, cars will again be in evidence, and I believe that so soon as a supply of steam omnibuses and *char-a-bancs* to carry at least twenty persons, such as I understand Messrs. Stirling, of Hamilton, have at present under construction can be obtained, many other tourist routes will be served.

#### On the Queensferry Road.

SATURDAY last brought us weather in the shape of a hurricane of wind and dust, and cyclists on the Queensferry Road in making their return journal Edinburgh-wards had a rough time of it. They certainly had to pay dearly for their pleasure on the outward "spin" with the gale astern. Among the usual crowd of "pedalists" I observed two motor-vehicles, one a De Dion quadricycle, the other the elegant Stirling-Daimler of Messrs. Rossleigh, Ltd. I could not help noting the immense advantages in having the assistance of a motor under such circumstances; the manner in which the mechanical vehicles sailed away, apparently indifferent to the wind, was instructive. The cyclists evidently appreciated them, for they endeavoured to hang on by every means in their power.

#### A New Car.

I OBSERVED early this week Mr. James Burns, the popular Town Clerk of the Burgh of Motherwell, driving an elegant new Daimler wagonette. I have since learned that the occasion was the "trial trip" of a new carriage just delivered to him by Messrs. Stirling. The carriage was a commodious and comfortable one, finished in dark blue, with yellow under-carriage and wheels.

"BROWN HEATHER."

## CORRESPONDENCE.

### THE SPEED OF MR. WRIDGWAY'S TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice a letter from Messrs. Pennington & Baines in your last issue in which they seem to infer that because Mr. Wridgway claims that he could ride 33 miles an hour on the road, their car can beat his tricycle, and that therefore their car is able to go well over 33 miles per hour; but, curiously enough, to back up this statement they refer to the fact that Mr. Wridgway has just attained on a prepared cement track a little over 29 miles in the hour. This may be nice reasoning for Messrs. Pennington & Baines, but I happen to know a fact about the matter which rather weakens it, for the simple reason that Mr. Wridgway, to ride this race in question, borrowed a tricycle from Mr. S. F. Edge, which tricycle I also know for a fact will not do anything like 33 miles in the hour on the road.

Now why should Mr. Wridgway want to borrow what he evidently considers a faster tricycle if his own will do so much better?

Yours truly,

H. G. NORRIS.

P.S.—I know someone in London who has a motor-car, which I am quite prepared to say would beat Mr. Wridgway on the track any time that he thought he could compete.

### ELECTRICAL MOTOR-CARRIAGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There seem to be many obstacles to the ultimate firm establishment, apparently inseparable from its early life, of a new industry, such as the adverse state of the law, the over-sanguine inventor, and the wiles of the professional company promoter, that those who are most interested in the matter, and one like myself, who has largely contributed to the years of labour necessary in making the electrical vehicles a practical success, have become hardened and take all these things as a matter of course, and bear the load without cavil. But when a gentleman of the standing of Sir David Salomons states (assuming that he has been correctly reported in the *Royal Magazine* of this month) that the electrically-propelled carriage is an impossibility, it is to be pardoned if the remark is not allowed to pass unchallenged. One is almost inclined to think that such a remark was made without due consideration, as was the case when the same gentleman, in estimating the cost of propulsion by electricity a year or so ago, based his calculations on the cost of electric current at fourpence per unit, whereas at that very time it was to be obtained in London at one penny per unit!

That one does not see many self-propelled carriages on the streets in this country is not evidence that they are unpractical. Our natural caution in adopting new ideas and our love of horses are enough to account for this—although, as a lover of horses myself, one of the last uses I would put a horse to would be the hauling of a tramcar or an omnibus, for I think that many of the horses one sees in cabs are fit subjects for anyone's compassion, and the sooner their use is rendered unnecessary by the introduction of electricity the better.

In spite of the long start which the automobile movement has had on the Continent, and in view of the fact that it is only during the last two years or so that one was allowed to run a motor-vehicle on the streets here at all, it is a very significant fact that the principal systems of electrical-vehicles which have been adopted in Paris are of English origin.

When discussing the "inutility" (*sic*) of electrical motors, Sir David is reported to have used the argument that "it is as if one should go for a fast drive and expect the horses to gallop along with a load of passengers as well as a dozen sacks of coal." Such an argument, if it can be so



termed, is not to the point, and one is tempted to remark that the horses would go very fast indeed if they had no load at all to carry. But why Sir David should try to prove the matter by wishing to carry accumulators (represented by the sacks of coal) in a horse-drawn vehicle, I fail to understand, for when we carry a set of accumulators in our electrical-vehicle we do not want to carry a horse, but do without them.

In conclusion, I can only say that regarding the weight of an electrical carriage, it is now quite possible to produce one capable of carrying two persons for a forty-mile journey, the total weight of the carriage being under 12 cwt., at a cost for electric current of two shillings (2s.), and an annual expense for renewal of accumulators of £20.

Thanking you for your courtesy in inserting this letter, and apologising for taking up so much of your valuable space,

I remain, dear Sir, yours truly,

The Automobile Club, S.W., C. OPPERMAN.

April 17th, 1899.

## ELECTRICAL CABS AND THE TAXAMETER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My attention has been called to a prominent paragraph in your issue of the 14th inst., in which it is stated that it has been announced in the daily papers that on the reappearance of the electric cabs they would be provided with taximeters. It is further stated that you had been informed by Mr. Bersey, the chairman of the Electric Cab Company, that there is no present intention of fitting these appliances on the Company's vehicles.

Such a *dementi* conveys the injurious impression that our Syndicate have made an inaccurate communication to the Press, and this being so I feel sure you will give me an opportunity of correcting this damaging impression.

In our chairman's communication to the Press, of which I enclose copy,\* what he stated was that forty cabs would be placed on the streets at the end of the week "in addition to forty of the electric cabs which the Cab Union had fondly imagined had disappeared, and for which we have been asked to reserve taximeters."

To prove that my statement was perfectly correct I enclose copy of my circular to the Press, and also copy of Mr. Bersey's letter dated February 22nd, which runs as follows:—

"I duly received your telegram of yesterday, and beg to inform you that we accept the terms arranged between us for the hire of the forty taximeters.

"In course of a few days I will forward draft agreement for signature, but in the meantime please note that we have decided to use your taximeters; please keep the same at our disposal."

"(Signed) W. C. BERSEY."

I may add that since that letter we have had no communication from the Electrical Cab Company withdrawing from their contract.

I feel sure I may rely upon your publishing this explanation of a misstatement, which I venture to think should not have appeared without further reference to us, and which otherwise will certainly be very damaging to our Syndicate.

London, W.C.,

Yours truly,

April 17th, 1899.

C. HARRINGTON MOORE,

*Managing Director the Taximeter Syndicate.*

[In correcting the error appearing in the columns of our contemporaries we had no intention of imputing that the Taximeter Syndicate had given the Press incorrect information. Nor, while still maintaining, on the authority of the chairman of the Electrical Cab Co., Ltd., that there is no present intention of equipping the electric cabs with the taximeter on their reappearance in the London streets on May 1st, do we now seek to imply that the statements made by our present correspondent are incorrect. We simply adhere to our correction, made on the authority already quoted.—ED. M.-C. J.]

\* This has no present interest.—ED. M.-C. J.

## MORS v. PENNINGTON.

SIR,—Eight weeks ago we issued a challenge to prove that our "Mors" was the fastest car in this country. Immediately Messrs. Pennington & Baines issued another challenge to go 100 times up Richmond Hill. We accepted it. In reply to this Messrs. Pennington & Baines issued another challenge to race us in France for 500 miles. Again we accepted, and again Messrs. Pennington & Baines have issued a new challenge—this time to go 25 times up the Shapfell.

Again we accept,

But for the last time.

THE AUTOMOBILE ASSOCIATION LIMITED.

P.S.—Since writing the above we have received a letter from a client who purchased one of our cars in August last, who has expressed his desire to witness and follow on his car the hill-climbing contest, thus acting as observer. He suggests that one of Messrs. Pennington's numerous customers will be equally interested to do so.

## THE BOLLÉE VOITURETTE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Would you kindly explain *how* the placing of the exhaust valve at the top instead of at the bottom of the cylinder in the later patterns of the above car is prejudicial to its successful running?

The fitting of springs seems to be a revival of an old idea, as the earlier pictures of the Bollée show it fitted not only with springs in front but at the rear of the frame also.

Have any of your readers tried the form of this car as modified by the Coventry Motor Co. and fitted with a Turrell motor—now being made by Messrs. Humber? I have been running one for over a week, and I do not want a nicer working little vehicle. It seems to me to be a very fair solution of the "voiturette" problem at present, and, to my mind, has the great advantage in appearance of being eminently "unhorseless"-looking.

This car has (up to the present!) given me all the fun of a Bollée, and at the same time runs, for a small carriage, with extreme quietness. It is also beautifully turned out and finished—which many are not.

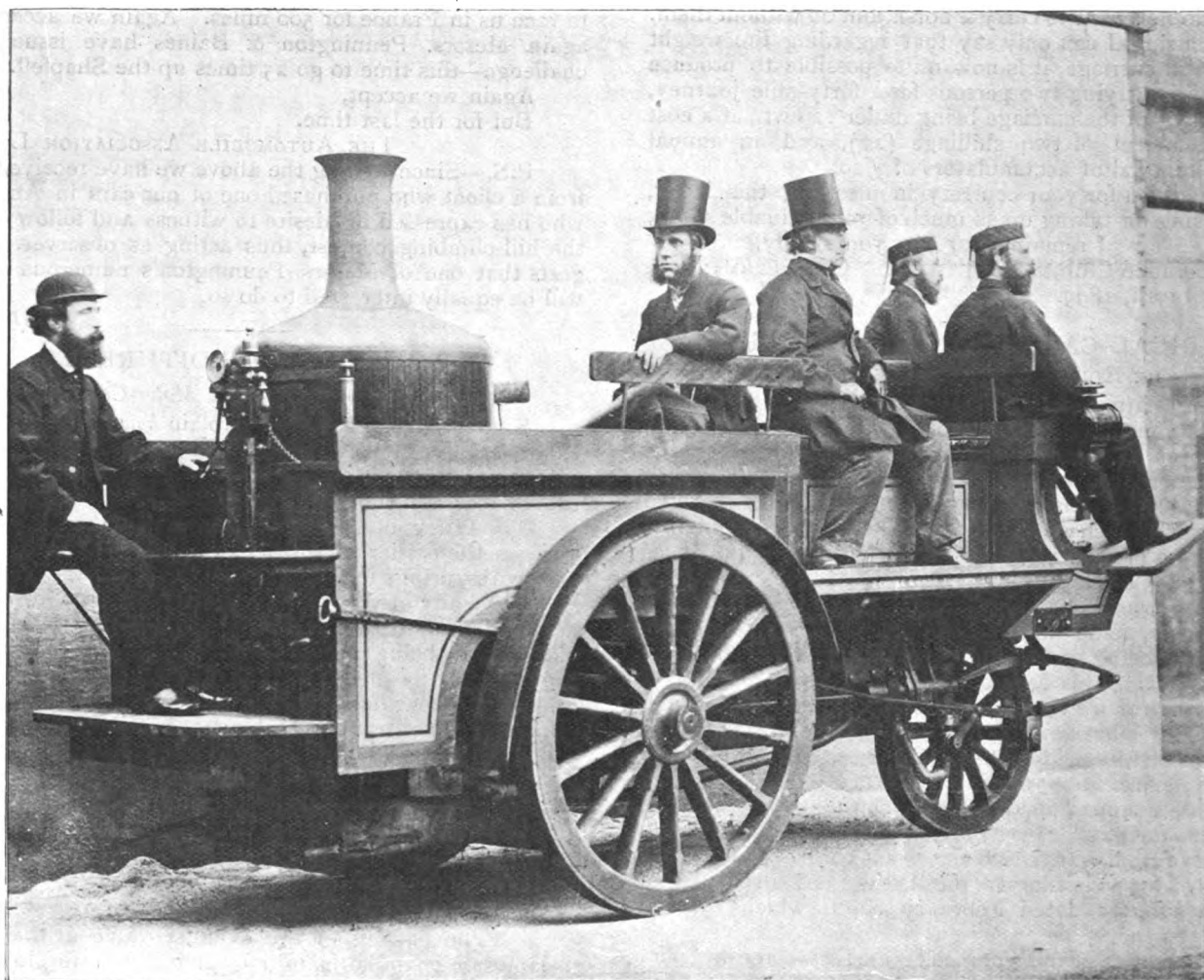
Galway, April 18th, 1899.

C. P. DAWSON.

[The placing of the exhaust valve at the top of the explosion chamber is, in our opinion, an error, in that being so placed, it is necessarily receiving not only the ascending heat from combustion of the explosive charge, but, further, receives the ascending heat from the burner employed to heat the firing tube and the whole of the ascending heat radiated from the walls of the combustion chamber and cylinder. Moreover, the 3-h.p. Bollée voiturettes furnished with exhaust valves on top, as seen in this country, appear to be wrongly designed, inasmuch as the exhaust ports and valves in these 3-h.p. engines are smaller than was the case in the old type of 1½-h.p. engines. The diameter of the cylinder and the length of stroke are both increased, and consequently the charge of explosive mixture drawn in is also increased in quantity. Yet, this being the case, actually less room is provided for the exit of the products of combustion! The main cause of the failure of the Bollées with top exhaust valves lies, in our opinion, in imperfect design; but we are also in doubt whether, if properly designed, the exhaust valve would act so well when placed at the top as if placed at the bottom. We believe that both the French makers have now returned to the practice of putting the exhaust valve in its old position at the bottom of the explosion chamber.—ED. M.-C. J.]

THE Consolidated Street Car Co. have been incorporated in New Jersey, U.S.A., for the manufacture of street railway cars, automobiles, omnibuses, and other vehicles for the transportation of freight, as well as passengers, with a capital stock of 18,000,000 dols.

# A Steam Motor=Carriage of Thirty Years Ago.



A STEAM MOTOR-CARRIAGE OF THIRTY YEARS AGO.

**I**N the engraving herewith is illustrated an interesting example of a steam motor-vehicle which was built about thirty-four years ago—in 1865—by Messrs. T. Cooke & Sons, of York, to the order of a private gentleman. This was in fact one of three very similar carriages built at about this period, two of them being engined by Messrs. T. Cooke and Sons, and the other having a Shand & Mason engine and boiler.

It is interesting to note that constructors at that period had not conquered the inherent difficulties accompanying the steering of a four-wheeled vehicle, and that the three-wheeled type of under-carriage was adopted in order to avoid these difficulties.

The vehicle is reputed to have travelled exceedingly well, attaining an average speed of twenty miles per hour on some occasions, but more ordinarily accomplishing ten miles per hour as an average, including stoppages for water and fuel. Its capacity in fuel was twenty miles, but it could travel no more than ten without a fresh supply of water. The utmost seating capacity was fifteen persons, and it is said that this number was very frequently carried. On the front seat three persons were accommodated, six were seated back to back, jaunting-car fashion, behind the front seat, whilst further to the rear the vehicle took a wagonette form, four persons being accommodated in this portion, each seat furnishing room for two

persons. At the rear two seats were provided on the stoking platform.

The coal bunkers were placed on each side of the boiler, and extended forward under the seats of the wagonette portion of the vehicle. Water was carried in front of the vehicle in a tank, over which the seats of the jaunting-car section of the carriage were placed. The boiler was of the multitubular type, and the ordinary working pressure was 80 lbs., although when hills had to be negotiated it was customary to carry a steam pressure of 100 lbs. Twenty-five minutes were occupied in getting up steam from cold water. The engines had cylinders of 5 inches diameter, the piston stroke being 6 inches. Spur-wheel speed reducing gear was employed, the engine being geared to the road driving wheels in the proportion of 3 to 1.

The carriage was controlled, excepting the stoking and boiler replenishing, from the front seat, the driver having complete control as to stopping, starting, or reversing the engines. The total weight of the carriage, with fuel and water on board, was about 2½ tons, or probably a trifle more.

The carriage is no longer in existence, the boilers and engines having been removed, after the vehicle had run for several years, and subsequently placed in a launch.

The carriage is an interesting one, contributing as it does another example of former practice in invariably placing the

engine and boiler at the rear of the vehicle, instead of in front, as is the present practice in heavy steam vehicles. We are indebted to a valued subscriber for the loan of the photograph from which our engraving is reproduced, and for the foregoing particulars. We will gladly welcome the receipt of any particulars or illustrations of interesting old-time vehicles, and in the event of readers entrusting them to our care, will readily undertake that they shall suffer no injury whilst in our charge.

## SOME NEW PETROLEUM-SPIRIT MOTORS FOR MOTOR-TRICYCLES—I.

IN consequence of the increasing popularity of motor-tricycles in France, quite a number of firms in that country have laid themselves out to meet the demand for the same. Many of these firms are employing the well-known De Dion motor, but during the past few months several small motors of the same type, but which are claimed to possess certain advantages over their older prototype, have been put on the market. Among these is the Société des Moteurs "Cosmos," of 67 Rue de Provence, Paris, whose motor—the "Cosmos"—we are now able to illustrate in Fig. 1 and Fig. 2, and describe. The motor, which is of the single-cylinder vertical type, is built up of three main parts, each entirely distinct from the other—*B*, the valve and explosion chambers; *F*, the cylinder proper; and *H*, the oil-containing dust-proof casing in which work the piston-rod *D* and crank-disc *L*. The cylinder *F* is a casting of special homogeneous iron, the outside and inside being both machined to remove any inequalities, the outside being provided with a series of ribs running lengthwise with the cylinder, forming, as it were, a very wide spur wheel. The ribs or ridges of the

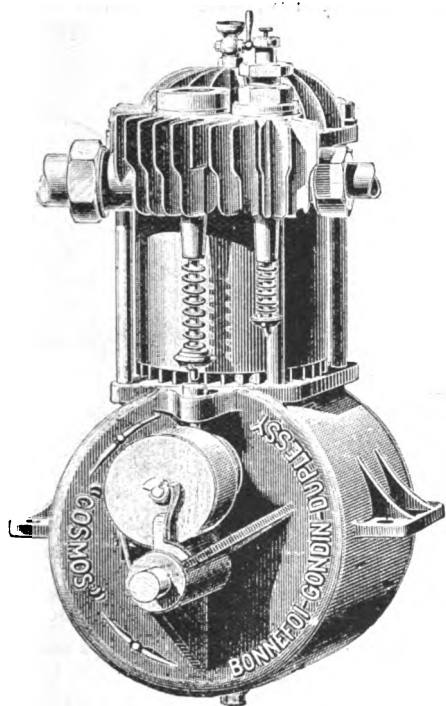


FIG. 1.—GENERAL VIEW OF "COSMOS" MOTOR.

cylinder barrel are entirely enclosed, except for a short space at the top and bottom, by a heat-absorbing polished copper jacket *G*. The makers claim that the openings to the space between the ribs thus formed at the top and bottom of the exterior of the cylinder assist materially in inducing a current of air to circulate round the cylinder, and so keep the latter cool.

Referring now to the sectional view, Fig. 2, it will be seen that the piston is of special construction. The piston rod *D* is pivoted to the piston *P*. The latter is provided with a special cap or cover of nickel held in place by the piece *C* and the large bolt shown. The advantage claimed for the use of this cap is that it forms a hermetic joint, preventing any escape of the gases at the side of the piston, the force of the explosion acting on the concave end

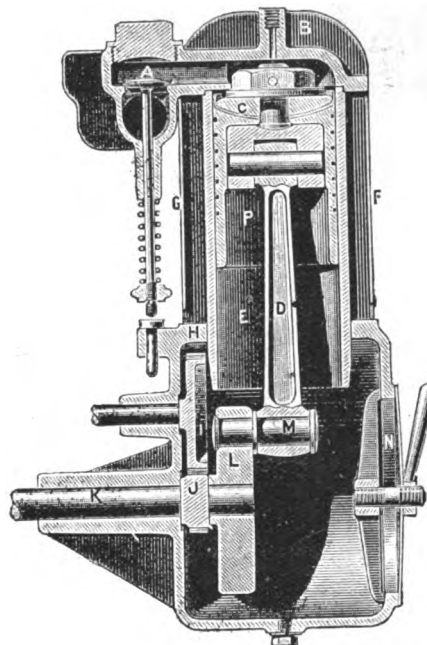


FIG. 2.—GENERAL ELEVATION OF "COSMOS" MOTOR.

of the cover, and forcing its sides against the walls of the cylinder. The piston-rod *D* is connected at *M* to the disc *L* on the motor-shaft *K*. The admission valve is worked automatically, while the spindle of the exhaust valve *A* is actuated by a cam mounted on a short shaft driven by spur-wheels *I J* off the motor-shaft, the two spur wheels being contained within the casing *H*. The latter is provided with a removable cover *N*, in order to render the working parts of the motor readily accessible. The ignition is effected by means of an electric sparking arrangement, which may be advanced or retarded as desired. The "Cosmos" motor, which normally runs at a speed of 1,200 revolutions per minute, is being made in two sizes— $1\frac{3}{4}$  and  $2\frac{1}{2}$  actual h.p. The makers claim that their motor is the only one that can seriously compete with the well-known De Dion-Bouton motor, and that for its weight and the space it occupies it develops a greater power than any other engine of the kind. The  $1\frac{3}{4}$ -h.p. motor is stated to weigh, without flywheel, only 55 lb., and the  $2\frac{1}{2}$  h.p. only 61½ lb., the dimensions being respectively 15 in. by 5½ in. by 10 in., and 16½ in. by 6 in. by 11 in. Another point claimed for the motor is that all the parts are made on the interchangeable system, and each being plainly marked with a letter or number, it is a simple matter to obtain a duplicate part in case of accident, etc.

Another firm catering to this demand are Messrs. Tauzin and Co., of 11 Rue Bellanger, Levallois-Perret, Paris, who have lately introduced a small motor, which they have named the "Papillon," and which is illustrated herewith in Figs. 3, 4, and 5.

The admission and exhaust valves are mounted, as will be seen from Fig. 4, on opposite sides of the cylinder top. Electrical ignition is adopted, the sparking arrangement being controlled by a cam on the crank shaft outside the cover. It consists of small contact rods held apart by springs *Tt*, Fig. 5, the spark being formed when, the cam *a* having pressed the rod *T* on to the opposite rod *t*, the pressure is released and the two rods brought back to their normal

positions by means of their springs. The cylinder is kept cool by means of a series of radial discs of copper fitted round it; it is mounted on to a bronze oil-containing cover, in which all the working parts run. The single-cylinder motor weighs

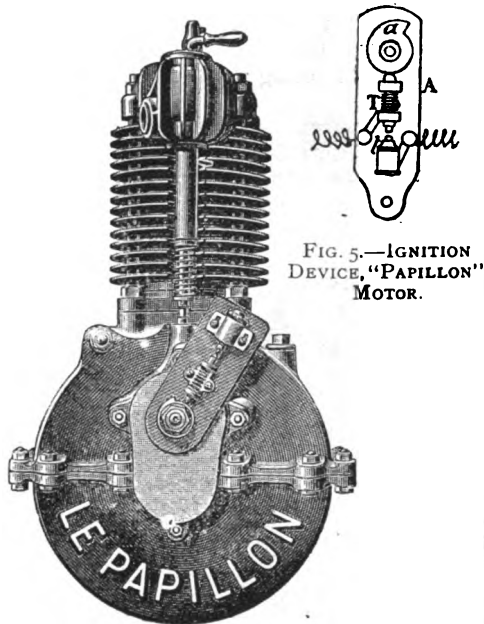


FIG. 3.—GENERAL VIEW OF "PAPILLON" MOTOR.

about 55 lb. and measures  $15\frac{3}{4}$  in. by  $8\frac{3}{4}$  in., while it is capable of developing  $1\frac{1}{2}$  h.p. Messrs. Tauzin are also making a two-cylinder motor of the same type to work up to  $3\frac{1}{2}$  h.p. A constant-level carburettor is employed in connection with the motor. Messrs. Tauzin, in addition to supplying their motor to cycle builders, are also constructing motor-tricycles

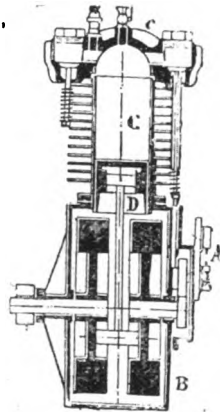


FIG. 4.—SECTION OF "PAPILLON" MOTOR.

the cooling of the latter. These discs, instead of being cast with the cylinder, are made of corrugated copper, and it is claimed for them that they will disperse six times as much heat as an equal surface of cast iron. The motor is arranged for either electric or tube ignition; the exhaust valve is

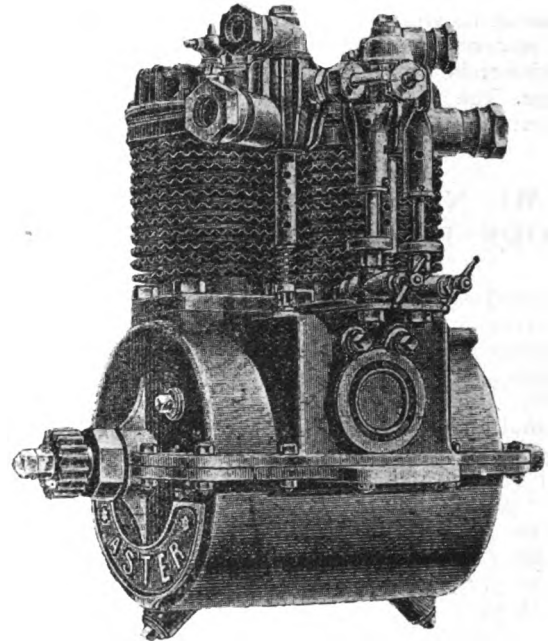


FIG. 7.—GENERAL VIEW OF "ASTER" TWIN-CYLINDER MOTOR.

actuated in the usual way by a cam on a small shaft driven by spur wheels off the crank shaft. The motor occupies a very small space, and, while weighing only 66 lb., is claimed to develop 2 h.p. The "Aster" Co. are also making a two-cylinder motor (Fig. 7) of the same type fitted with tube ignition; it develops 4 h.p., and is stated to weigh only

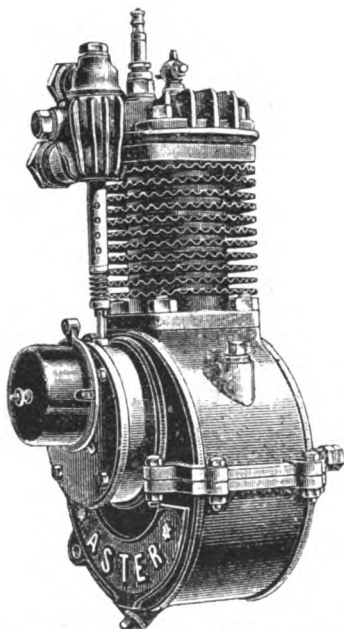
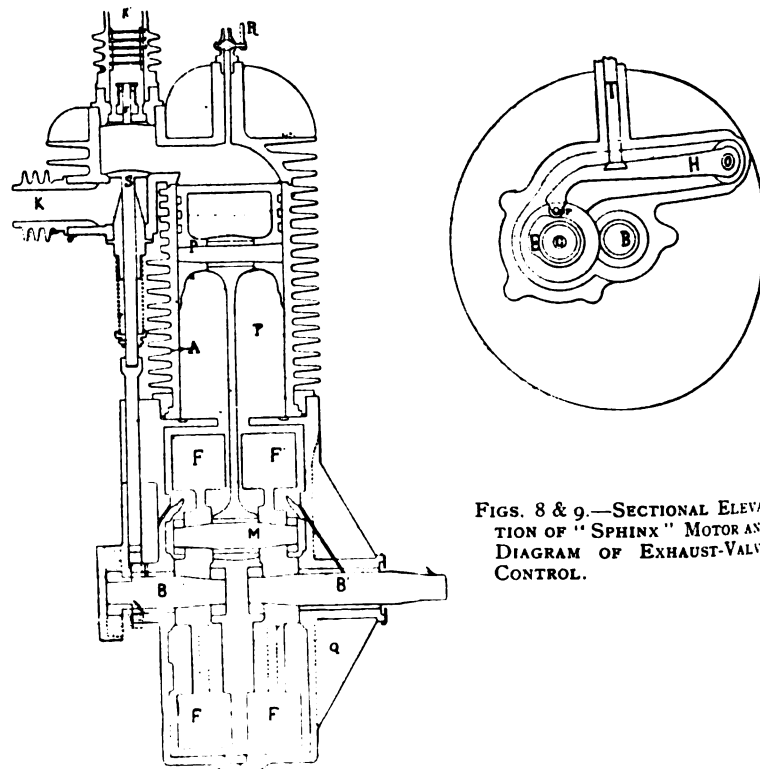


FIG. 6.—GENERAL VIEW OF "ASTER" SINGLE-CYLINDER MOTOR.

themselves. The machine, which weighs complete about 167 lb., is claimed to be capable of attaining a speed of over 25 miles per hour on level roads, carrying one person, and of ascending gradients of from 10 to 12 per cent.

The "Aster" is the name of another new motor which has recently been brought out by Les Ateliers des Constructions Mécaniques "L'Aster," of 33 Cours Benoist, Saint-Denis (Seine), France, and a general view of which is shown in Fig. 6. The chief feature of the motor is to be found in the *ailettes* or radial discs fitted round the cylinder to effect



FIGS. 8 & 9.—SECTIONAL ELEVATION OF "SPHINX" MOTOR AND DIAGRAM OF EXHAUST-VALVE CONTROL.

100 lb., being, the makers claim, particularly suitable for light motor-voitures.

The "Sphinx" is the name of still another motor for motor-tricycles which is manufactured by Messrs. Damas and Clément, of 10 Rue Barbès, Neuilly-Levallois (Seine),

France, and of which detail illustrations are given in Figs. 8 and 9. The motor has a cylinder 70 mm. diameter by 70 mm. stroke; at a speed of 1,800 revolutions per minute it will indicate 2 h.p.; the normal speed is, however, 1,200 revolutions, at which the motor develops  $1\frac{1}{4}$  h.p. Referring to the sectional view (Fig. 8), it will be seen that the motor shaft is in two parts  $B B'$ , each carrying on their inner ends within the phosphor-bronze oil-containing case  $Q$ , discs  $F F'$ , which take the place of the usual crank, the oscillating piston-rod  $T$  being connected to a short shaft  $M$  carried by the two discs  $F F'$ . On the outer end of the shaft  $B$  is carried a spur wheel which gears with a wheel on a small side shaft  $C$  (Fig. 9). On the end of the latter is a cam  $E$ ; this does not lift the rod of the exhaust valve directly as is usual. Pivoted to the side of the oil-containing cover is a lever arm  $H$  carrying at its end a small roller  $r$  which is continually bearing on the cam; the rod of the exhaust valve is also continually in contact with the arm  $H$ ; so that as the cam  $E$  lifts the roller  $r$  the movement is transmitted to the exhaust valve rod  $T$  (Fig. 9) at every second revolution of the motor. The two valves are placed one above the other, the exhaust valve at  $S$  and the admission valve at  $S'$  (Fig. 8). Introduced in the admission tube  $K'$  near the valve are several wire-gauze diaphragms, which prevent, as the ignition of the explosive mixture takes place, any return of flame towards the carburettor. The ignition is effected electrically, a spark due to the sudden breaking of the circuit being employed. The motor, which is provided with radial discs not only to the cylinder walls but also to the outsides of the two valves for cooling purposes, is stated to weigh only about 60 lb. Messrs. Damas & Co. are also making a two-cylinder motor of the same type for light voitures. The two cylinders are set in the same plane, but at an angle to each other, the piston rods of the two cylinders being connected to the same crank.

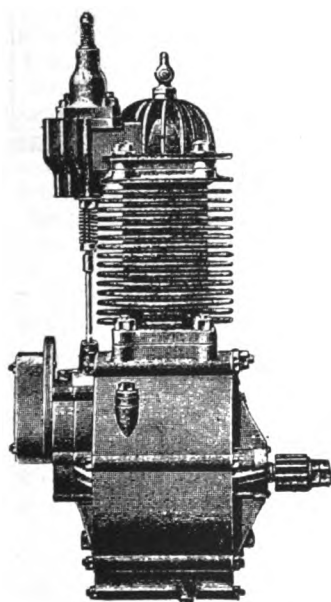


FIG. 10.—GENERAL VIEW OF BENZ VERTICAL MOTOR.

In addition to their well-known horizontal motor, Messrs. Benz & Co., of the Rheinische Gasmotorenfabrik, Mannheim, have lately taken up the construction of light vertical motors suitable for use on motor-tricycles. The motor (Fig. 10), which does not offer any material point of difference from those of other makers, is fitted with radial discs to the cylinder; the ignition is effected electrically, while the exhaust valve is actuated by means of a cam driven by spur wheels off the motor shaft. The crank shaft runs in an oil-containing case. At a speed of 1,000 revolutions per minute, the motor is stated to develop  $1\frac{1}{4}$  h.p., while the weight, including the carburettor, the induction coil, and the accumulators, is 96½ lb.

M. W. H. Dorey, of 14 Rue Torricelli, Paris, has lately introduced a small motor (Fig. 11) which it is claimed is capable of working up to 2 h.p. It has a cylinder 80 mm. diameter by

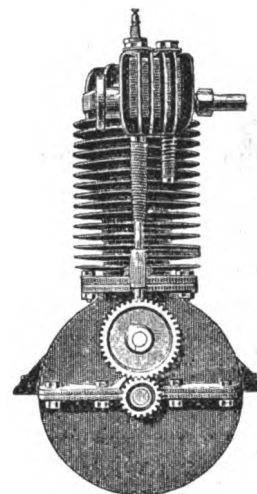


FIG. 11.—GENERAL VIEW OF DOREY MOTOR.

130 mm. stroke; the ignition is electrical, while the cooling of the cylinder is effected by means of radial discs. The special feature claimed for the Dorey motor is that its maximum speed is much less than usual, being only 700 revolutions per minute.

(To be continued.)

## THE ELECTRIC MOTOR-VEHICLE.\*

By C. E. WOODS.

(Concluded from p. 80.)



To tabulate these different equipments will be the most concise way of putting them, and I will call my first equipment No. 1:—

Passenger capacity, 2; complete weight of vehicle, 800 pounds; weight of batteries, 440 pounds; average miles run on one battery charge, 20; speed, miles per hour, first  $3\frac{1}{2}$ , second 7, and third 14; number of motors used on vehicle, 1; horse power of same,  $2\frac{1}{4}$ ; number of battery cells, 36; ampères per hour for three hours, 12; time in hours required to charge batteries, 3.

No. 1 equipment, designed for a top carriage or a heavy buggy: Complete weight of vehicle, 1,150 pounds; weight of batteries, 600 pounds; average miles run on one charge, 25; speed, miles per hour, first  $3\frac{1}{2}$ , second 7, third 14; number of motors used on vehicle, 2; horse power of same, 3; number of battery cells, 40; ampères per hour for three hours, 18; time in hours required to charge batteries, 3.

No. 2 equipment, which is designed for four passengers in an open vehicle such as a trap or brake: Complete weight of vehicle, 1,800 pounds; weight of battery, 800 pounds; average miles run on one battery charge, 30; speed, miles per hour, first  $3\frac{1}{2}$ , second 7, third 14; number of motors used on vehicle, 2; horse power of same, 5; number of battery cells, 40; ampères per hour for three hours, 30; time in hours required to charge batteries, 3.

No. 3 equipment, which is designed for both commercial delivery wagons and for my heavy cabs (of which I have built quite a number), and is also applied to heavy carriages with tops, has a passenger capacity for from 4 to 8 people: Complete weight of vehicle, 2,400 pounds; weight of batteries, 1,000 pounds; average miles run on one battery charge, 25; speed, miles per hour, first 3, second 6, and third 12; number of motors used on vehicle, 2; horse power of same,  $6\frac{1}{2}$ ; number of battery cells, 40; time in hours required to charge batteries, 3.

\* Abstract of a paper read before the Chicago Elec. Assn.



The original calculation for one of the large cabs reads as follows: Maximum speed of vehicle, miles per hour, 12; total load to be carried, including four persons, 3,200 pounds; maximum horse power required in motors,  $5\frac{1}{2}$ ; average horse power required in motors, 4; voltage of motors, 72; volts lost in transmission in motor, 8; maximum voltage required, 80; number of cells required at two volts each, 40; maximum ampères required, 52; maximum ampères per motor, 26; average ampères per motor, 22; mileage capacity desired at maximum speed, 30; hours discharge required,  $2\frac{1}{2}$ ; ampère hours' capacity required in battery,  $2\frac{1}{2}$  hours discharge, 110; greatest maximum effort required in motors for overcoming inertia and grade climbing, 9.

In accordance with these calculations from prior experience in smaller vehicles, I designed two motors of a nominal  $3\frac{1}{2}$  h.p. each, either one of which was capable of running the vehicle at a slight overload under normal conditions of level roadway. The tests of the cabs showed on a macadam and asphalt road a very little difference, and called, at the speed of 12 miles per hour, for 42 ampères with a potential of 72 volts at the motor terminals, which amounts to practically 4 h.p. In overcoming inertia the ampères would rise with a slight drop of voltage to 65, gradually diminishing until an acceleration of 12 miles per hour was reached, which acceleration consumed a period of about one half-minute.

There has been a great deal of controversy concerning the excessive weight of motor-vehicles, and also considerable controversy by some of our theorists about what is considered dead weight and pay weight, and I want to say here that this limitation has not, in my experience, as yet been reached. We are perforce obliged to have weight for traction purposes, and many tests made by me on slippery roads, bad places, etc., have proved that with power applied to but two driving wheels we could not reduce our weight more than about 15 per cent. to 18 per cent. of what I have already obtained without being too light for good traction under all conditions of road.

I have also found a very wide difference in amount of power consumed in the use of rubber tires. I recently tried a new tire on the above-named cab which consumed about 18 per cent. more power than the ones I am regularly using. I also, by very careful tests, have discovered that the hard rubber tire is far preferable to the pneumatic tire for use on motor-vehicles—and this without any reference to its first cost, durability, or freedom from puncture. The facts of the case are that the pneumatic tire absorbs more energy by about 20 per cent. when inflated, and by a very considerable increase over this, as it may become deflated to different points of pressure.

The point of control has been a matter of considerable discussion by both those directly and indirectly interested in the development of the motor-vehicle. I have tried series paralleling the fields and I have also used series paralleling the batteries, after which I have adopted exclusively the series paralleling of the batteries as my method of installation. The one thing to be observed is to have very large contacts and connections and to take the same pains in the distribution of the batteries when in parallel as one does in the distribution of current in the armature. In other words, a uniform resistance of the circuits of the different batteries will produce perfectly satisfactory results in their operation, which I do not find to be the case in series paralleling the fields. The latter can be done to such an extent that but a small rise of current would be made in overcoming inertia, but the excessive amount of field winding will over-saturate the fields unless they are unnecessarily large, and tends to a very considerable loss of voltage in dead resistance; and while we economize in current, we do not economize in energy, as in the case of series paralleling the batteries.

Three speeds I have found to be sufficient for all practical purposes, even on our congested streets, and now have my motors running in parallel entirely independent from one another in their propelling function. Fourteen miles per hour for the larger vehicles I have found to be about the

practical limit, as the amount of momentum stored up in the given weights of the vehicles cannot be brought under control by brake application quick enough to be safe in city streets at greater speeds. In other words, we cannot brake on the motor-vehicle any more than we can on the motor-vehicles on rails, beyond the locking of the wheels. In the light road buggy which I have, I have geared it up to twenty miles an hour, and find that with 800 pounds I can handle it with a reasonable degree of safety on boulevards and parks, but I do not recommend these speeds to go any higher as a general proposition; although as a racing proposition I believe that the motor-vehicle will be brought down to  $1\frac{1}{2}$  minutes for a mile, or perhaps even less time.

## THE JEANTAUD IRREVERSIBLE WHEEL-STEERING DEVICE.

IN a recent issue we mentioned that M. Jeantaud, of 51 Rue de Ponthieu, Paris, the well-known French builder of electrical motor-vehicles, had lately devised an improved irreversible hand wheel-steering device for motor-cars, or a steering gear so arranged that while the front wheels respond to the action of the steering hand-wheel, the former

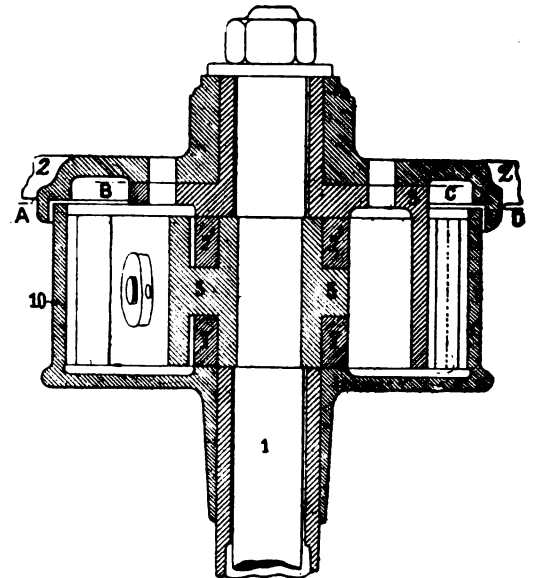


FIG. 1.—PART SECTIONAL ELEVATION.

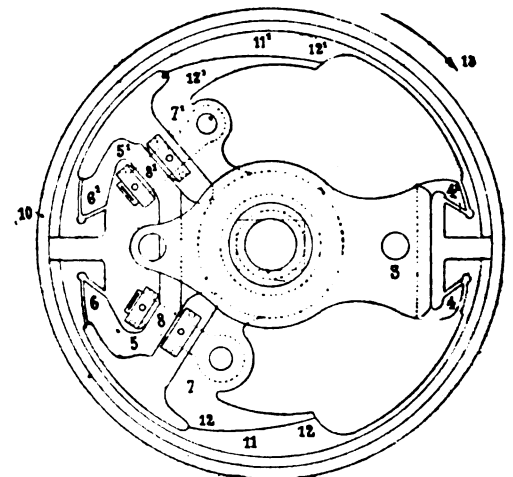


FIG. 2.—SECTIONAL PLAN.

cannot inversely, when the meeting of an obstruction has a tendency to throw them out of their proper course, transmit any movement to the hand-wheel, and the tendency of the

road-wheels to be swerved from their designed course is immediately checked. We are now able to give some further particulars of the device, as also two illustrations taken from the patent specification. Fig. 1 shows a section through the steering hand-wheel and gear on the top of the steering standard, and Fig. 2, a plan on line *A B C D* thereof. The steering wheel 2 is connected to a special piece 3, both being loosely mounted on the vertical shaft 1. The piece 3 is provided with two tongues, 4, 4', the use of which is described below. Keyed on the shaft 1 is a further special piece, 5, 5', to which again are rigidly connected by the adjustable bolts 8, 8', two pieces, 7, 7'. The pieces 5, 5' are provided with tongues 6, 6', similar to those on the ends of 3, while on 7, 7' inclined planes 12, 12' and 12'', 12'' are formed. A stationary drum, 10, attached to the steering pillar, surrounds all these various parts. Close to the inside of this drum are arranged two leather-faced spring bands, 11, 11'. The latter are of a special form, each being provided with recessed parts to correspond to the tongues, 4, 4' and 6, 6', and in addition inclined surfaces corresponding to those, 12, 12' and 12'', on the pieces, 7, 7'. In steering when the hand-wheel 2 is moved in one or other direction (say such as that shown by the arrow 13) the piece 3 also turns, and one of the tongues, say for example 4, tends to draw out of its recess in the spring band 11, and by reason of an inclined surface on the tongue allows the tension on the spring 11 to be withdrawn, so breaking the contact of the latter with the wall of the drum 10. The tongue 4' is simultaneously brought into contact with its corresponding recessed part of the spring band 11', and thus the recess in this band is brought into contact with its tongue 6', and thus moves forward the pieces 5, 5', and 7, 7' to the desired extent, and consequently the shaft rotated, 5, 5' being keyed on it, in the same direction as the hand-wheel. When the hand-wheel is turned in the opposite direction the connection with the shaft 1 is made in a similar way but by means of the spring band 11 and the tongues 4 and 6, so that the shaft 1 can be freely rotated to the requisite extent by means of the hand-wheel, in either one or the other directions, as desired.

Suppose, now, that an obstruction on the road, or other cause, tends to throw the front road-wheels temporarily in a direction contrary to their designed course, there would be a tendency for the shaft 1 to move in the same direction; the piece 5 fixed rigidly on the shaft would also be displaced. Supposing this displacement to be in the direction of the arrow, the tongue 6' on the piece 5' would move forward with the result that the inclined surface 12' 12'' would overtake the corresponding incline on the spring band 11', and wedge it tightly against the walls of the drum 10, thus not only preventing any action on the tongue 4', the piece 3, or the hand-wheel 2, but also preventing any serious deviation of the front wheels from their proper course. Similarly, should the obstruction, etc., cause the front wheels and the steering standard to turn in the opposite direction, the tongue 6 would recede from its recess in the spring 11, and the latter, owing to the action of the inclined surface 12, 12', would be forced into contact with the drum, so preventing the recess in the spring acting on the tongue 4.

M. Jeantaud claims for his new steering device that however rough or uneven the roads traversed none of the jolting is transmitted to the hands of the driver; that the front wheels respond to the action of the hand-wheel, but cannot, inversely, act on the hand-wheel; and, finally, that it offers the same advantages as worm-wheel steering without the drawbacks of the latter.

ACCORDING to the statistics of the French motor-car industry, the payment for wages in that particular branch of French industry has been 2,200,000 dols. for the last year.

A NUMBER of Rochester, U.S.A., capitalists have formed a company to manufacture motor-wagons and run a line of automobiles between that city and Lake Ontario, six miles distant.

## THE LONDON STEAM OMNIBUS IN 1833.



THE amusement caused by the inauguration of the London Steam Carriage Company's service in 1833 found many forms, and even penetrated into the columns of the leading technical journal of the period. We refer, of course, to the *Mechanics' Magazine*, now incorporated with *Industries and Iron*, which on August 31st, 1833, published the report of an imaginary conversation that had taken place in its office in Peterborough Court, E.C. It contains many skits on the excuses made by contemporary inventors for the failure of their attempts to develop road locomotion by steam, and called forth a letter from the solicitor of Mr. David Redmund, of 68 Charles Street, City Road, who felt he had been badly treated, and that the publication of what the editor called the "Peterborough Court Conversazione" was "calculated to do him serious injury with the public in the way of his trade." Damages were claimed, but apparently the claim was never taken into court, the *Mechanics' Magazine* remarking that "as 'no steam carriage has yet been started' by the Mr. Redmund who is 'advertising to supply steam carriages to the public,' it could not have been Mr. Redmund who built the Eclipse, which was supplied with foul water, which caused the boilers to prime, which caused the yokels to laugh, etc."

It will be observed that much of the sarcastic skit which is herewith reproduced is applicable to the imperfectly completed and immature vehicles that have been put forward in recent time to furnish Londoners with steam omnibuses.—  
ED. M.-C. J.

### PETERBOROUGH COURT CONVERSAZIONE.

AUGUST 31ST, 1833.

*The Editor, Professor Crackwell, Counsellor Tout-Voix, Dr. Tangent, and Solomon Secundus seated round the table. St. Bride's Church clock heard striking.*

EDITOR: How's this? Nine o'clock, and so few arrived. How strange! Last night we were crowded to suffocation, and now—

*(Noise and bustle in the court, and in rush a number of persons with Sir Dionysius Dawplucker, blowing and puffing, at their head.)*

EDITOR: How now, Sir Di., and good friends all? You seem agitated.

SIR DI.: Agitated, sir? Say, rather, shaken to pieces.

SOL. SEC.: With laughter, Sir Di.?

SIR DI.: No, faith. 'Twas no laughing matter, believe me. Speed will tell you all about it.

SPEED: Why, you must know, gentlemen, I was politely offered by my friend Toplis, who is Director-in-Chief of the Paddington Steam Omnibus Company, the use for this afternoon of a new carriage which they have constructed called the "Eclipse."

CRACKWELL: Is that another of Hancock's?

SPEED: No; Hancock and the Company have quarrelled, and this is a new carriage constructed by an engineer of their own.

SOL. SEC.: The same person, I believe, who advertises to supply other people with steam carriages that will answer to admiration—before he has been able to construct a good one for himself.

EDITOR: I believe the same; but allow Mr. Speed, if you please, to proceed.

SPEED: Well, I invited Sir Di., Barbette, and the rest of them to have a ride in it. We started, nineteen in all, at four o'clock, from the Company's premises, City Road, meaning to steam to Shepherd's Bush, go round by Kensington, and, returning through Piccadilly and the Strand, to set down at Peterborough Court by eight o'clock, your usual hour of assembling.

SOL. SEC.: Which is about ten miles in all, I calculate; and this in four hours! Prodigious effort!

SPEED: We did not, Sir Sardonicus, go for velocity at all. We wished to get a thorough insight into the manner of the machine's working, and the more leisurely we travelled, of course, the better.

EDITOR: Well, and how worked it?

SPEED: Oh, upon the whole, admirably. That is to say, so far as the principle and construction of the machine were concerned. Nothing, indeed, could have been better; but, unfortunately, we had a number of untoward circumstances to contend with, which impeded our progress a good deal, and caused one or two rather unpleasant accidents.

STRANGER: Yes, very untoward circumstances indeed.

EDITOR: Your name, if you please, sir?

STRANGER: Dick Rattler, at your service: first cousin to Mr. Speed. The circumstances, as I was saying, were very untoward indeed. First, as we were going down Pentonville Hill a little screw got loose, and that, you know, is a thing which might happen to the best of machines—

SOL. SEC.: To be sure, and to the best of people. Your loose screw is a notorious mischief-maker.

RATTLER: And so it took us a full half-hour to get that screw tight again. But when we did start anew, cranks and crinkums!—how we did go it; I think we must have made the distance between King's Cross and the "Yorkshire Stingo" in less than twenty minutes. By this time, as bad luck would have it, the boilers had begun to prime.

TOUT-VOIX: What's that?

RATTLER: Why, it's a phrase engineers have to signify the state of boilers when the water gets into the spaces which should be occupied by steam, or what I should call in a *prime* bad condition. But that, the engineer assured me, was all owing to our having been supplied with confoundedly dirty water, and that, you know, is a thing which might happen to anybody.

SOL. SEC.: Happens every day.

RATTLER: Well, so much water was in consequence spurted out on the road that, as we left the "Yorkshire Stingo," the cads and other yokels laughed and shouted after us, "See at the new water-cart!" Our steersman, who takes great pride in his engine, got angry at this, and, turning round his head to say something smart to the rascals, at that instant another steam carriage came, at full speed, right across our path from a side street.

CRACKWELL: Good heavens! and struck right against yours?

RATTLER: No, this once we were in luck; for, in the very nick of time, when a concussion seemed inevitable that would have sent us all to kingdom come, a large over-driven ox rushed in between the two vehicles, and received the shock that seemed destined for us.

CRACKWELL: How providential! And the poor ox?

RATTLER: Was smashed dead—all of a heap—as if struck by lightning.

EDITOR: And whose carriage was this that you encountered?

RATTLER: Squire and Maceroni's, which, I understand, is constantly practising in and about Paddington, and is famous for accidents of this sort.

CRACKWELL: Yes; it knocked a house down once.

EDITOR: No, it only carried away one wing of it, and that through the inexpertness of the steersman; which, of course, as Mr. Rattler would say, argues nothing against the machine itself.

SPEED: Certainly not, no more than the untoward occurrences which Rattler has so accurately related are to be considered as disparaging to the machine on which we were mounted.

SECOND STRANGER: 'Tis, to my mind, a clear case. From the water being foul—

EDITOR: Another friend of yours, Mr. Speed, I presume?

SPEED: Beg pardon for my neglect. Mr. Editor, my friend Mr. Dick Dubious—Dick, my friend the Editor.

EDITOR: What?

Dick Dubious the metaphysician,  
Who loved philosophy and a good dinner.

—(Don Juan.)

DUBIOUS: The same; and one who, though personally unknown to you, sir, has been a constant admirer and frequent correspondent of your inestimable journal.

SOL. SEC.: Which may account, perhaps, for the many *dubious* things that have appeared in it!

DUBIOUS: I was about to observe, gentlemen, that it was a clear case, inasmuch as it was the water being foul that caused the boilers to prime, and it was the priming of the boilers that caused the cascading on the road, and it was the cascading on the road that caused the bystanders to shout, and it was the shouting of the bystanders that caused our steersman to turn his head, and it was that turn of the head which placed us all in jeopardy.

SOL. SEC. (*chaunting*): This is the house that Jack built; this is the malt that lay in the house—

EDITOR: Peace, Solomon! Let us hear the rest of the adventure.

RATTLER: Leaving Squire and Maceroni to settle with the drover as they best could for the demolition of the ox, we hurried onwards, and reached Bayswater without any further accident or interruption. Here we stopped to take in water and fuel, and to clear the fire-bars from clinkers which had accumulated so much as almost to put a stop to the draught. Toplis said it was the badness of the coke that caused the clinkers, and, since such was the case, the engine of course could not be to blame; nobody, you know, can help being served with a bad article at times.

SOL. SEC. (*aside*): No, not even with a wretchedly bad engine.

(To be concluded.)

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

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The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, APRIL 28th, 1899.

[No. 8.]

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## COMMENTS.



### Last Saturday's "Benz" Meet.

FOLLOWING out his programme of Saturday runs, Mr. Hewetson last Saturday organized an all-day run to Bedford and Biggleswade, leaving Oxford Street early in the morning. The journey to Bedford was accomplished without incident, the weather, however, being dull and threatening. After lunching at the Swan Hotel, the tourists were besieged by members of the public and several representatives of local newspapers who were desirous of having a trial spin, and foreseeing this Mr. Dan. Albone, the local agent for the Benz cars, had made satisfactory arrangements, with the result that their desires were gratified, and the capacities of the new hill-climbing gear of the Benz cars fully demonstrated. Subsequently the party proceeded to Biggleswade, Mr. D. Albone's Ivel Hotel being the headquarters. After dinner the party was joined by Mr. and Mrs. Edge on a Levassor car and Mr. Jarrott and Mr. Weigel on motor-tricycles. The night was spent at the Ivel Hotel, and on Sunday morning, after an inspection of the Ivel Cycle and Motor-Car Works, the party proceeded on a circular trip through the surrounding pretty village. Ickwell was, of course, visited, and this old-world village, with its quaint houses and its village green and dominating maypole, was duly admired. Old Warden too, evoked considerable admiration, its well kept streets and pretty situation causing considerable enthusiasm. This trip was a thoroughly enjoyable one and a welcome addition to the programme. After returning to Biggleswade the party made the best of their way home, some travelling via St. Albans and others via Cambridge. Some considerable excitement was caused by the passage of so large a number of cars through the villages. It is interesting that Biggleswade should so soon come to the front in the early days of Saturday motor-touring. In the early days of cycle road-racing, Biggleswade was the record breakers' shrine. Being on the main York road, only 45 miles from London, with roads of fine surface and easy gradient, Biggleswade makes an ideal destination for short trips, more especially as motor-carists can be sure of the ready help of Mr. Dan. Albone and his staff in making any of "those little adjustments" which are sometimes necessary with the best of cars.

### Public Motor- Vehicle Services in Liverpool and Cheshire.

As we have mentioned in two previous issues, the projected service of cars for districts on the Cheshire side of the Mersey is well on the way towards fulfilment. A very considerable amount of interest is being taken in the matter locally, and the routes now selected for the first services of eight cars include many in the Wirral peninsula. The cars will be of the *char-a-bancs* type, and will carry nine persons, having motors and mechanism on the Daimler-Levassor principle. Amongst other routes selected are the following: New Brighton Tower and Seacombe Ferry, New Brighton Tower and Leasowe, Hoylake, West Kirby, etc., and others to Birkenhead, Heswall, Neston, Parkgate,

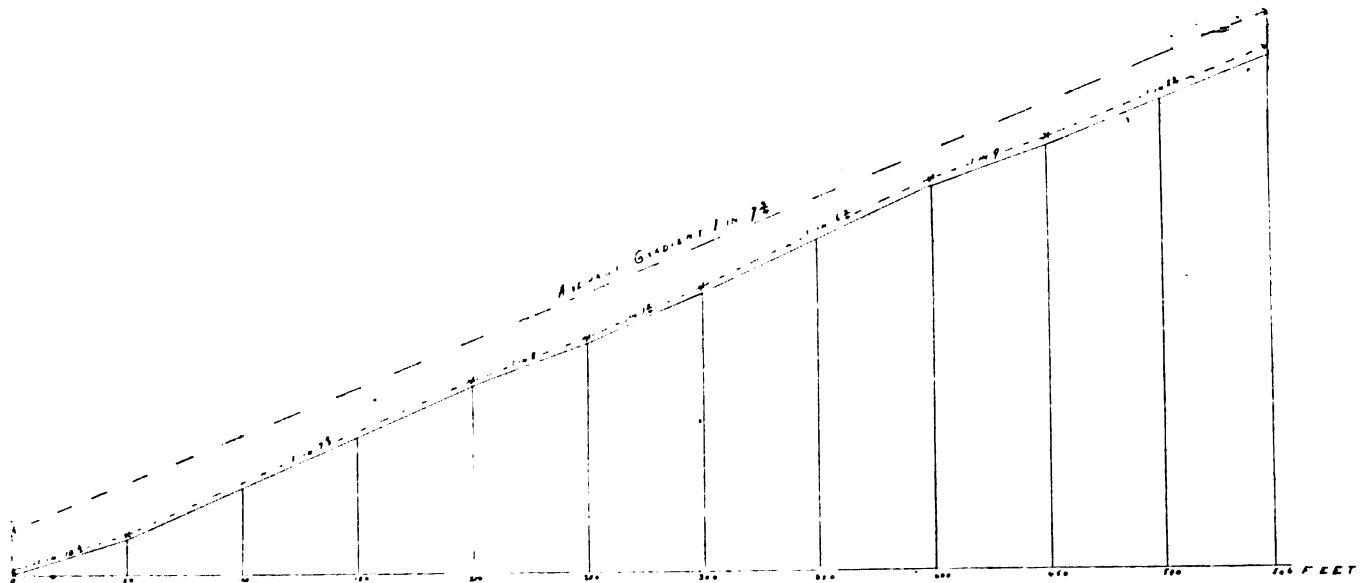
Chester, etc. As soon as these services are actually started the promoters of the syndicate will turn their attention to Liverpool, and provide that city and its suburbs with a quick service of motor-vehicles. In addition, Liverpool is promised at an early date a service of electric cabs. These will most probably be constructed on the Carl Oppermann principle and will include open vehicles or landaus as well as those of the coupé type. So far as the public service on the Cheshire side is concerned, not only have the New Brighton Tower Co. taken an interest in the matter, but there is a strong competition amongst the hydropathic establishments and the hotels that their premises shall be included in the routes selected.

### The Motor-Car Club's Meet at the Crystal Palace.

Mr. F. W. BAILY, the Hon. Secretary of the Motor-Car Club, informs us that the forthcoming meet of the Club and friends at the Crystal Palace on Saturday, May 6th next, promises to be a huge success, the entries already received being quite up to expectation, both in point of number and also from the point of variety of the types of cars. Additional interest will also be given to the meeting by the fact that Mr. S. F. Edge has taken up the challenge of his old cycling antagonist and friend, Mr. C. G. Wridgway, and will ride a match with him on the track. The Crystal Palace Company have offered an additional gold medal for this contest. In addition, it has now been decided between the Motor-Car Club and the Crystal Palace Company that an invitation race, open to all motor-cycles, whether two or three wheeled, shall also take place. Mr. Baily will gladly receive names of those desiring to enter. By this means additional interest will be given to the proceedings. The programme now stands as follows:—At 12 noon: Meet of the Club and friends on Thames Embankment (Westminster end). 1.30 p.m.: Parade of all cars contesting, as well as those visiting the Crystal Palace, on the principal terrace (the same on which the firework set pieces are displayed). 2 p.m. to 5 p.m.: Motor-car control contests. 5.30 p.m.: Invitation open five-mile motor-cycle race. 5.50 p.m.: Match between Messrs. S. F. Edge and C. G. Wridgway. 7 p.m.: Informal dinner of members, friends, and guests of the Motor-Car Club and of the Crystal Palace Company. We are glad to record this instance of the Motor-Car Club's endeavour to promote and encourage the development in the use of automobile road vehicles, and trust that all London automobilists will make a point of being present on their cars, so that the parade may be worthy of the occasion.

### Evolution of Automobilism in the U.S.A.

DISCUSSING the history of automobile development in the *New York Press*, Col. A. A. Pope says: "The earlier attempts to produce motor-vehicles were failures. They were unwieldy and clumsy, and too costly to maintain. The introduction of railroads in the first half of the century practically put an end to their use. Since the early eighties the improvements in gasoline motors have enabled inventors to create more or less



THE FIRST 546 FEET OF THE "MOUNT" AT GUILDFORD.

satisfactory horseless vehicles. The development of these has suffered to a certain extent because of a degree of complication in construction and operation, puzzling to the average purchaser but simple enough to the inventor, maker and expert mechanics generally. That is a result of sacrificing simplicity for the unnecessary requirements of great speed and purely technical considerations. Hence comes the advantage of electricity for the power in horseless vehicles. Of all mechanical devices those involved in the application of electricity are most familiar to the general public. It is by the use of that power that it has been possible for the Americans to produce their modern vehicle, the manipulation of which requires no greater mechanical knowledge than the pressing of an electric button, and no greater watchfulness than in driving a horse. That the American electric carriages are a success is evidenced by the fact that they are sought by purchasers in the well provided markets of Europe in even larger numbers than in the home country." Col. Pope neglects, however, to state the disadvantages of the electric vehicle for any other than town traffic. Its inability to travel with safety more than about thirty miles without recharging its batteries is a serious obstacle to the successful use of the electric vehicle for touring purposes. The time taken up in charging, when charging stations are available, extending as it does over some hours, is also a serious inconvenience, and the electric vehicle will never be popular except for mere town and suburban journeys until at least an entirely new form of accumulator is placed upon the market which is free from the inherent defects of the present types.

#### The South African Express Company and Native Passengers.

WE have before alluded to the success attained in Cape Town by the motor-vehicles running in public and private service and owned by the South African Express Company. The Company has undertaken the carrying of mails, and this quite satisfactorily and successfully; and we understand that the Company's operations are shortly to be extended into the Orange Free State. Mr. Liebmann, the Company's manager at the Cape, has had to contend with several difficulties, not the least of which has occurred by reason of the "native and coloured people difficulty." So soon as public conveyances at cheap fares are placed on different routes they are besieged by natives and coloured people, this preventing white people from using the vehicles. By enactment it is impossible to refuse to carry the coloured people, and hence the difficulty. This trouble was peculiarly acute with motor-vehicles, but Mr. Liebmann has hit upon a very neat solution. By the terms of his licence and the city

regulations Mr. Liebmann cannot refuse to allow such persons to ride in the cars, but he is not tied down to any fixed charge, so he has effectively settled the matter by stating that his charges of threepence to the Graving Dock and sixpence to the mail steamer are for white people only; natives and coloured people will have to pay five shillings and ten shillings. It is hardly necessary to say that by this means the entire exclusion of the objectionable element from the motor-cars is secured, and the *Cape Register* holds that it is a pity that other owners of wheeled conveyances in Cape Town do not follow Mr. Liebmann's example.

#### The Gradient of the "Mount," Guildford.

SOME weeks ago we recorded the trial trip of some Benz cars fitted with the new hill-climbing gear, during which trials the ascent of the "Mount" at Guildford was negotiated. At the time of the trials the Borough Surveyor, Mr. C. G. Mason, A.M.I.C.E., very kindly gave us the gradient of the "Mount" as a whole, stating that the first part of the hill (in Mount Street) had an average gradient varying from 1 in 7 to 1 in 8, and that the average gradient of the whole hill was 1 in 16. The first part of the hill, that in Mount Street, has, of course, the steepest gradient, and, in order that the gradients of this section might be placed on record, Mr. G. A. Franks, surveyor, of Guildford, was induced to take the gradients of this section exactly. The result of his labours is given in the diagram above, which represents the first 546 ft., or say 185 yards, of the hill. It will be seen that for a short distance the gradient is 1 in 6, whilst the average for this part of the hill is 1 in  $7\frac{1}{4}$ . We have heard several persons speak of this first portion of the "Mount" as having a gradient of 1 in 6, or even 1 in 4, and to an untrained eye the gradient does appear to be extremely severe. Our reason for taking the course we have done was to afford some means of demonstrating what a stiff hill a gradient of 1 in  $7\frac{1}{4}$  really is, and, on the other hand, how seldom such a heavy gradient is met with in ordinary practice. Those who are considering the advisability of ordering a car frequently lay down a condition that it shall be able to climb a gradient of 1 in 4 with a full load. Of course this is not impossible, but in the majority of cases this condition is entirely unnecessary, sacrificing, in addition, the first speed to such an extent that even on the level it becomes a mere crawl—too slow, in fact, to be of any practical use when it is required to travel at first speed through traffic. We, of course, support the provision of a low first speed, but deprecate its being made of little use simply that it may be able to carry out a duty which will probably never be demanded of it.



# A Long Tour on an Electric Vehicle.

THE daily newspapers are full of reports of the undertaking of Mr. Jackson, of Aberdeen, who left Aberdeen on the 18th inst. in an electrical carriage, with a view of carrying out a journey to London, and from thence back to the Granite City. There is nothing wonderful in this tour, however; Mr. Jackson is quite able to secure a supply of current for recharging his accumulators at the different large towns through which he passes, and many an automobilist has done equally as long journeys without all this blowing of trumpets. If Mr. Jackson would undertake to drive from Aberdeen to London and back again to Aberdeen without recharging his accumulators, then we should be the first to applaud his undertaking; even if he undertook to drive his carriage 100 miles without recharging we would give him applause; but these continual "press puffs" savour too much of advertisement to be to our taste.

# Restrictions of Language.

SINCE the dawn of the age of motor-cars every Englishman connected with the industry has found reason to grumble at the poverty of the English language in possessing words which shall adequately and truthfully express some phase or subject connected with the automobile industry. Even in the naming of the vehicle carrying its own propelling mechanism there has been considerable difficulty—"self-propelled vehicle," "motor-car," "auto-car," and many others having been brought forward at various times, each having faults, and none positively conveying the meaning actually intended. Ultimately, however, "motor-car" has been perhaps the more generally adopted by the public, varied occasionally by the English adaptation of the French "automobile." Two at least of our contemporaries are not satisfied with any generally accepted term, however, and have adopted the horribly hideous terms of "moto-car" and "moto-vehicle" availing themselves of a permissive law in philology which permits the dropping of the final consonant of the first portion of a compound word when the final portion also commences with a consonant. We notice, with some amusement, however, that these journals only avail themselves of this law when speaking of "moto-vehicles" or "moto-cars"; in other compound words they retain the final consonant of the first portion with perfect regularity and unanimity. In glancing through the pages of one of these contemporaries we find that they still use "series-wound," not "serie-wound"; "crank-shaft," not "cran-shaft"; "piston-rod," not "pisto-rod"; "club-house," not "clu-house"; "self-propelled," not "sel-propelled"; "cotton-spinning," not "cotto-spinning"; "cog-wheels," not "co-wheels"; "chain-wheel," not "chai-wheel"; "light-fitting," not "ligh-fitting"; "four-seated," not "fou-seated"; "crank-pin," not "cran-pin"; "second-hand," not "secon-hand"; "old-fashioned," not "ol-fashioned"; "water-tube," not "wate-tube"; "public-house," not "publi-house"; "pair-horse," not "pai-horse." In fact, we are assured by our office-boy that in one issue of this contemporary there are several hundred compound words in which the first portion ends, and the last portion commences with a consonant, and that in no single instance is the final consonant of the first portion deleted except in moto-car, -carriage, -vehicle, or -cab; whilst in one case "motor-car" is retained in its entirety; and that in addition this journal also uses "motor-car" in its business announcements. There is no doubt, however, that there is a difficulty in finding suitable terms; for instance, we speak of a man possessing "a stable of horses," "a team of horses," "a fleet of boats," "a pack of dogs," or "a flock of sheep"; but when we desire to shortly describe the possession of several motor-cars we are met with some difficulty. A "fleet" of cars has been suggested, and for want of a better we have adopted this expression. In speaking of the "stabling of a horse" we

are of course quite in order, but in endeavouring to find an expression denoting the "putting away" of a motor-car we are met by difficulties. One correspondent uses the expression, "we 'depôté' our vehicle," but this is neither commendable nor pretty, and we may add that our correspondent is an American. Nor have we any definite word for the place where a motor-car is stored. The French use the word "*garage*," which is perhaps best translated as "dock," but "in dock" would perhaps imply to English ears that the car was under repairs. We notice that several correspondents have expressed themselves as having "stabled their cars," but this expression is hardly correct. As the automobile movement extends, however, fairly satisfactory expressions which are at present without meaning will doubtless be dragged into service, but, in the meantime, we must try to jog along without them. The want of a verb denoting the act of driving or riding in a motor-car is also severely felt; "to mote" has, of course, been suggested, but it has, at present at least, much too horrible a sound to be accepted as a solution for immediate adoption.

# The Automobile Club's Tours.

THE Automobile Club run to Frensham will start from the Club at 9 a.m. to-morrow, Saturday, 29th inst., and there will be a rendezvous at the White Horse Hotel at Guildford at 12 o'clock. The route out of London will be *via* Hammersmith Bridge, Sheen Gate, and Kingston Gate of Richmond Park and the Ripley Road. On leaving Guildford the motor-vehicles will proceed to the residence of Colonel Davis, A.D.C., at Whitmead, Tilford, Colonel Davis having invited the members of the Club to visit his country seat. Luncheon will be taken at the Frensham Pond Hotel, and tea at St. Mary's, Godalming, by the kind invitation of Mr. Buttemer. There is to be a further run on Saturday, May 13th, the start from the Club to be made at 2 o'clock. The night will be spent at the Burford Bridge Hotel, Boxhill, and the return to town accomplished on the following day. Those members who are unprovided with vehicles will be pleased to hear that the Liquid Fuel Engineering Co. have kindly placed seats in their steam wagonette at the disposal of the Club for the Whitsuntide tour. In reference to this tour it may be mentioned that Lord Leigh has kindly given permission for the motor-vehicles taking part in the Whitsuntide excursion to run through Stoneleigh Park.

# Eastbourne and its Motor-Car Service.

WE recently alluded to the difficulties which had been experienced in obtaining a licence to run public motor-vehicle services in Eastbourne, and to the fact that the Town Council and Clerk were strongly opposed to the scheme, holding the opinion that a speed of six miles per hour was quite sufficient within the confines of the town. The syndicate seeking to run this service were therefore very much discouraged when their application for a licence was positively refused. Of course, communications at once passed between the syndicate and the firm entrusted with the order for building vehicles for the service, pointing out that if the licence could not be secured the vehicles on order would hardly be required. It is to the credit of those who were making the vehicles that they were not at all discouraged, and advised the syndicate to renew their application for a licence, promising to aid them in every way to obtain it. In the result the application was renewed, the Motor Manufacturing Company sending down a vehicle in the charge of their secretary, Mr. Alfred Burgess, in order that the Chief Constable, the Watch Committee, and the Town Clerk might have ocular demonstration of the ease with which the vehicle could be controlled, and personal experience of the comfort and ease of progression by a motor-vehicle. The day unfortunately turned out exceedingly wet, but Mr. Burgess stuck to his post, and, thus encouraged, the Watch Committee went for an experi-

mental tour, being quickly drenched to the skin. The control of the vehicle was, of course, thoroughly demonstrated, and under the most trying conditions possible, with the result that the Committee granted the licence, but, unfortunately, included a clause that the rate of speed through the town should not exceed five miles per hour! The horse-drawn *chars-a-bancs* ply for hire under no such restriction, and it is rather hard that one means of progression should be taxed in this way and another allowed to take its own sweet will. However, the syndicate are satisfied even with this restrictive licence, and have decided to run their service as arranged. It has been whispered that when Mr. Burgess had conveyed the Watch Committee some eighteen miles outside Eastbourne, it raining very heavily at the time, he absolutely "held up" the Watch Committee, threatening to make them walk home through the drenching rain unless they promised there and then to grant the licence! Of course, we do not for one moment believe in this rumour.

#### A Prize for a Safety Device.

IN connection with the Automobile Club Show, Major H. A. Barclay, J.P., D.L., has offered a prize of twenty guineas for the best device by which the burners of motor-vehicles having tube-ignition shall be automatically extinguished in the event of a car, from accidental cause, assuming such an angle to the road, either in a side-ways or endwise direction, that there would be a danger of the car becoming upset. Inventors who intend to compete for this prize should send in their names—not later than May 13th—to the Secretary of the Automobile Club Show, 4 Whitehall Court, London, S.W. The decision as to the award of the prize will be left in the hands of the show judges, viz.: Mr. W. Worby Beaumont, M.I.C.E.; Professor C. Vernon Boys, F.R.S.; Mr. Dugald Clerk; Mr. Bryan Donkin, M.I.C.E.; Major H. L. Holden, R.A., F.R.S.; Professor Hele-Shaw, LL.D., M.I.C.E.; Mr. W. H. Preece, C.B.; Mr. Boverton Redwood, F.R.S.E.; Sir David Salomons, Bart., J.P., and Mr. James Swinburne. The judges reserve the right of not awarding the prize, if in their opinion no device submitted is adequate for the purpose stated.

#### Around Cottonopolis on a Pennington Car.

IN the personality of our Manchester correspondent, we one afternoon last week found time to enjoy a long-promised ride on one of the new Pennington motor-cars. The new Pennington double-cylinder "Victoria" was selected for the occasion. Very soon we started, and experienced pleasurable astonishment at the facility and accuracy with which the car was guided through the crowded streets. The undeviating ease with which we ran up the hills certainly was a surprise, and although it may seem to some astonishing to say so, we mounted the gradients just as easily, and almost as quickly, as we travelled on the level. We also appreciated the feeling of safety owing to the little height of the vehicle from the ground, the wheels not being of an unnecessarily large diameter. The tangent-spoked wheels with their pneumatic tires, coupled with the fact that the carriage is isolated as far as possible from the frame carrying the motor, ensures that but little vibration is felt by the riders. The Pennington cars, as is well-known, are steered by the rear wheels, the drivers being in front. The ease with which the car was made to turn almost in its own width was remarkable. In what really seemed like the proverbial "less than no time" we travelled back, now through a country lane, then up a hill and down into a village, where the sleepy inhabitants, with staring eyes and opened mouth, seemed to wonder what kind of animal it was rushing by. On reaching "home" we took the liberty of feeling the tank containing the cooling water, and found it to be merely luke-warm; the exhaust box, too, was so cool that it was possible to touch it. We learn that four-fifths of the orders for the coming season already booked

by Messrs. Pennington & Baines are to be provided with two-cylinder motors, the vehicles being geared up to twenty-five miles per hour on the level, and to take any customary gradients at eight or ten miles with a full load. Our experiences on this run, occupying about one hour, amply demonstrates that the Pennington car *will* go, and go well.

#### More Trials of the Pennington Car.

FOR some considerable period the Pennington motor-car has formed a subject of correspondence in the columns of the journals devoted to motor-cars, and the appearance of the Pennington car has been long and anxiously looked forward to. In London for the past fortnight two cars have been on view and in evidence at Messrs. Mulliner's carriage factory, Brook Street, Bond Street, and these cars have been tried by many prominent people connected with the industry. Our London representative, amongst others, had a short spin; while in Manchester our representative had a twenty-five mile run, which was most satisfactory and a "non-stop" from start to finish. This is recorded in another portion of the present issue. Another representative of ours while in the North has also been driven on one of these cars provided with a single-cylinder motor, and was very much impressed with the facility and ease with which the car ran. Its turning and steering capacity is something wonderful, and it certainly causes a shiver to pass through the frame of the passenger who may be sitting beside Mr. Pennington when he suddenly turns completely round in order to show this off effectively when going at full speed. The present writer was so pleased with the running of the car and its great speed that he arranged for a day's run to Chester and back, a distance from Manchester, we believe, of something like forty miles, but unfortunately was unable to keep this appointment. On the following day Mr. Pennington was kind enough to renew his offer, but as it was then raining hard we did not accept. Very shortly we are promised the use of one of the cars, and will then hope to have some extended runs; and in the meantime we have no hesitation in expressing the opinion that the new Pennington motor-car is a distinct acquisition to the vehicles obtainable in this country, and that from our limited experience there is but little (if any) fault to be found with them. We understand that the London agency for these cars will shortly be opened in Berners Street, Regent Street, under the charge of Mr. Burns, and that within a few days examples of various cars will be on show there, as well as "testing vehicles" for the convenience of intending purchasers.

#### Motor-Car Firms in the North.

PERHAPS it is only natural that in the great engineering centres of the North of England evidences of advance in motor-car building should be apparent, and that a number of both new and old firms should be at work experimenting. In Halifax the Anglo-American Motor Co. have very fine works, and a strong staff of men at work. They have already sold several cars, and have plenty of orders on hand—in fact, so many that the Company already contemplate building larger premises. It was a pleasure to go with Mr. Myers through the Anglo-American Company's works, equipped as they are with splendid tools; and the excellent workmanship of the output was apparent everywhere. Unfortunately we are not permitted to give any details of the Company's motor-vehicle other than those appearing in our issue of the 14th inst., but that it is one of the best on the market we are content to announce. Aluminium is very largely used in the construction of the car, and the frame is of weldless steel tubing. Messrs. Wadsworth, of Westgate, Halifax, are makers of street-cleansing and other sanitary machinery. They have been at work on a steam motor for some considerable period. The first vehicle built by the firm is a steam street-sweeper, which we shall hope to use with effect at the Agricultural Hall

in July next. Messrs. Brown & Buckton, of Hipperholme, near Halifax, make small, light, double-cylinder motors—the “Mytholm.” We were promised an illustration and particulars of details, but up to the time of going to press these have not arrived. In Leeds, of course, there is the well-known firm of Mann & Charlesworth, Dewsbury Road, makers of steam vehicles for carrying any weight up to five tons. This firm is very busy, as are also Messrs. Greenwood & Batley. In this town we saw a photo of a handsome little two-seated steam dog-cart, which we hope to illustrate in about a fortnight's time. A well-known firm of electrical engineers (Messrs. Dickinson & Co.) are considering the advisability of constructing electrical vehicles, and at Preston Messrs. Coulthard are full of orders for their steam vehicles. At Preston the Lancashire Steam Motor Co., Ltd., invited us to attend the trial of a new steam omnibus carrying eighteen passengers. This we were glad to do, and watched it careering up and down the roads at from twelve to fourteen miles, with considerable interest. The trial was eminently satisfactory in every way. We understand this omnibus has been built for Messrs. Stirlings, of Hamilton.

#### The American Electrical Cab.

WHEN Lord Charles Beresford was in New York the American newspapers were filled with remarks upon certain journeys undertaken by him in an electrical cab. He was reported to have commented favourably upon this means of locomotion, and to have expressed his delight at the convenience and comfort of the vehicles. On Wednesday night last, however, he made a speech at the annual dinner of the Institute of Mechanical Engineers, in which he gave quite a different account of his feelings. He said that “no doubt the mechanical engineer would soon be able to supersede the 'bus and the cab and the growler by means of the motor. Half of our traffic was now congested because half of the carriage was composed of a horse. (Laughter.) Get rid of the horse and they would double the room in the streets. (Loud laughter.) When he was in New York he went into a motor-car which had the appearance of a cab but possessed the manners of a kangaroo. (Roars of laughter.) At any rate it got him safely to his destination.” From this it would appear that although Lord Charles is in favour of automobile locomotion, yet he did not altogether approve of the “antics” of the New York electrical “kangaroo.” In connection with these vehicles, the following extracts from the last issue to hand of our American contemporary, the *Wheel*, which devotes more attention to automobile matters, will be of interest:—“An electric cab ran wild on the New York Boulevard last week. After unsuccessfully trying to climb a telegraph pole the mechanical horse deliberately threw out its passengers, dumped its controller off, turned over on its back, and ran its wheels around in sheer mechanical madness at its inability to do more damage. While all of this was going on nothing but horse laughs came from the quadruped power producers of the Boulevard car line.” We were not aware “kangaroos” ever endeavoured to climb poles, but if the New York electrical cab is anything like the creature that the *Wheel* would have us believe, we are not surprised that Lord Charles Beresford did not enjoy its antics.

#### “The Disestablishment of the Horse.”

SPEAKING at the annual dinner of the Institution of Mechanical Engineers on Wednesday, Mr. Goschen also paid a tribute to the mechanical engineer as the invisible contributor to the triumphs of the civil engineer and naval architect. Mechanical engineers, he said, were constantly subduing all the forces of nature—air, fire, electricity and water. They had gone even further and “had almost disestablished horses on our country roads, and they were now about to disestablish

“horses by the motor-car in our London thoroughfares.” Without endorsing the latter part of Mr. Goschen's playful reference to the motor-car, makers will be pleased to see such a recognition of the advance they are making; and some may ask: “Is Mr. Goschen also among the motor-carists?” The advent of the first Cabinet Minister in Palace Yard by means of these vehicles would certainly give an impetus to the favour with which motor-cars are now regarded.

#### MOTOR-TRICYCLE FATALITY AT EXETER.

MR. HOOPER held an inquest at Exeter on the 25th inst. relative to the death of George Morgan, a single man, aged 37.

Deceased, who was a cripple, was a clerk in the office of St. Thomas District Council. He had recently purchased a motor-tricycle. He was seen to mount the cycle outside the St. Thomas Fire Station on February 11th last, and ride off in the direction of Dunsford. He steered all right until he got to St. Thomas Church, when the machine turned over and he fell to the ground. He was picked up and taken to the residence of Mr. James, and after being seen by two doctors was driven home.

Dr. Woodman said he had known Mr. Morgan for nearly thirty years, and had operated on him for hip disease, from which he always suffered more or less. He was called to attend him a fortnight after the accident, and found him suffering from an alarming hæmorrhage from a long-standing wound in the hip. The hæmorrhage was caused by the accident. He was also suffering from a swelling of the left jaw, and had much difficulty in eating his food. Deceased rallied for a time, but died on Sunday last. It was a sad case, as deceased had saved up all he could in order to purchase the machine on which to ride to and from business, and the first time he rode it he met with an accident resulting in his death. He was inclined to think Morgan did not know how to manage the machine.

The jury returned a verdict of “Accidental death.”

THE motor races on the Prater course in Vienna were only very poorly attended.

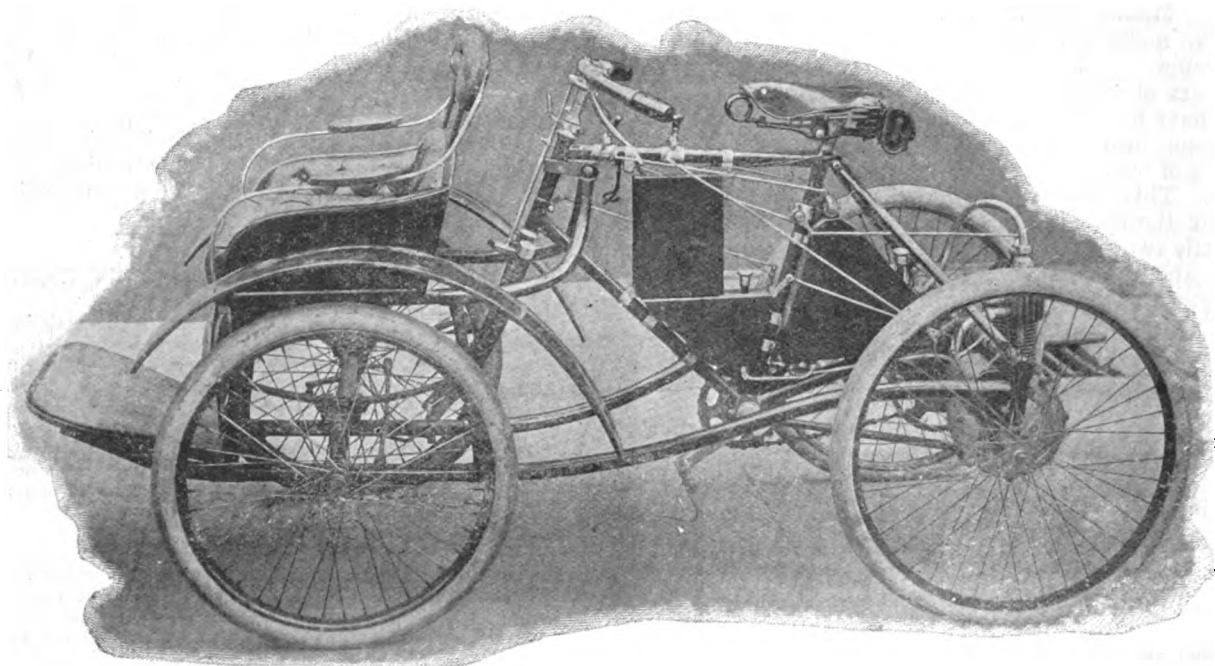
ON Monday, May 1st, Mr. James D. Roots will read a paper on “Petroleum Motor-Vehicles” at an ordinary meeting of the Society of Engineers at the Royal United Service Institution, Whitehall.

MR. CONSUL ARMSTRONG, in his report on the trade of Lombardy for 1898, says that the most important bicycle manufacturers in that province are now turning their attention to automobiles. He adds, “this form of amusement or locomotion is far from being as popular in Italy as is the case in France.”

A BILL has been introduced in the New York Assembly for the licensing of the drivers of motor-carriages. If it becomes law, persons applying for licences must appear before an examiner, who is to be appointed by the Mayor. The examination is to include the practical operation of the type of vehicle the applicant intends to drive. A fee of one dollar has to be paid prior to the examination.

THE General Electric Automobile Co., having its head offices in Philadelphia, Pa., makes the following announcement: This company, controlling basic patents covering the application of electrical power to independently operate vehicles of all descriptions, is now receiving orders for the prompt delivery of “horseless” conveyances of the latest and most approved types. Its specialty is the lightness of its apparatus, with storage battery one-half the weight of other makes, and of greater efficiency.

THE Cambridge and Eastern Counties Automobile Company, Limited, was registered on April 17th by Mackrell & Ward, 1 Walbrook, E.C., with a capital of £5,000 in £1 shares. The first directors—to number not less than three nor more than nine—are W. L. Duck, F. W. H. Hutchinson, A. Macintosh, jun., W. C. Pamplin, and G. F. Whitmore. The objects of the Company are to deal in motor-vehicles, to hire them to the public, and to run services of motor-vehicles in the district. The public service is already at work, and the hiring business with the cars at present available is quite brisk, none of the cars being in the dépôt for any length of time.



MOTOR-TRICYCLE ATTACHMENT.

### FRONT SEAT ATTACHMENT FOR MOTOR-TRICYCLES.

WE herewith illustrate one of the front seat arrangements for motor-tricycles alluded to in our last issue. It is a very comfortable and wide seat, provided with rests for back, arms, and feet, and is fitted with best springs, pneumatic tire wheels being also provided. The illustration shows plainly the mode of attachment; and the ease with which a tricycle is thus almost instantly converted into a quadricycle goes far to explain the popularity of these attachments. In the illustration the appliance is shown as fitted to an "auto-cycle," but the Automobile Association, Ltd., inform us that it will fit any make of tricycle—in fact, they have already supplied quite a number of them to owners of Beeston, Barrière, De Dion, and other tricycles. When we last went to Prince's Road, Holland Park Avenue, to see the Automobile Association's, Ltd., stock, we were shown several different designs of these front seats, the Association, as is usual with them, trying their best to suit all tastes. The form shown in the illustration, therefore, must not be regarded as the only type made, but simply as an example of the attachment which is common to many forms of the actual seats.

It was announced some months ago that Messrs. Brown Bros., Ltd., of Great Eastern Street, E.C., the well-known metropolitan cycle and cycle accessory factors, had established a motor-car and cycle department. Judging from the catalogue lately issued, the firm has lost no time in organizing its new branch, for they announce that they are now not only ready to supply complete motor-cars and tricycles, but also motors and fittings to enable cycle-makers and others to build motor-tricycles. The catalogue above referred to gives particulars and prices of the parts of motor-tricycles they are able to supply, from a complete machine to the smallest detail thereof. A couple of pages are devoted to a list of the small parts they are stocking for the repair of motor-tricycles, while other pages are devoted to the De Dion motor, and hubs, bottom brackets, tires, chains, chain wheels, spokes, etc., for motor-tricycles, cars, etc. Altogether the list shows that Messrs. Brown Bros. are convinced of the future of the motor-vehicle industry, and that they mean to be well to the front in the business.

### MOTOR-CARS ON THE CONTINENT.

#### The Electric Cabs in Paris.

FROM one source, and we believe it to be reliable, we learn that the electric cabs in the Paris streets are having a great success financially and otherwise. Several of the *presstelegrams* in the daily newspapers, however, report accidents without number, even going so far as to say that an electric cab is more often seen disabled and in tow of another motor-vehicle than it is found in a state fit to convey a passenger. Our own Paris correspondent, however, does not substantiate these statements. He informs us that with the exception of one or two minor breakdowns, owing to trouble with connections between motor and battery, there have been no serious accidents, and that the vehicles run well, are well patronized, and carry out their duties with speed and regularity.

#### Motor-Cars in Brussels and Berlin.

THE re-opening of the Brussels-Longchamps Velodrome occurred on Monday last, when the inaugural meeting was attended by many notable supporters of the automobile and cycling worlds. Of the five races set down for competition, no less than four were won by Monsieur Louis Kühling. Throughout Flanders the automobile industry is now in full swing, gaining new adherents every day, both in the ranks of users and makers. In Berlin also a great number of races have been promoted, both amongst the *haut-ton* as well as for those in the ranks of semi-professionals. In fact, the automobile movement has reached such a pitch in Berlin that it is now on the *tapis* to establish a ladies' automobile club. Many ladies have already given their adhesion to this project, and it is meeting with hearty support all round.

#### More Accidents in France.

Two accidents are reported to have occurred in France on Saturday in connection with automobile vehicles. Fortunately, however, these did not result in loss of life or very serious injury to those who were unfortunate enough to be concerned therein. A motor-carriage driven by Monsieur Laurant was climbing the Tuilerie Hill on the way to St. Germain, the fashionable Paris suburb, when the

car suddenly stopped owing to the motor having "seized." Monsieur Laurant, it would appear, entirely lost his head, inasmuch as he did not let down his "devil," or hill-climbing safety bar, and as a consequence the vehicle commenced to run backwards down the hill at a great speed. Ultimately the vehicle was projected violently against a wall, after first having knocked down a bicyclist who was keeping to his proper course. The bicycle was smashed to pieces, and its rider, Monsieur Cuville, was at first believed to be dead. It ultimately proved, however, that he had only fainted, and he subsequently was found to be suffering from no more than shock and severe bruises. The second accident occurred at Niort; Monsieur Janvier, a municipal councillor, with his two sons was returning home after a long drive when he proceeded at a much greater rate of speed than was conducive to safety, for the reason that he was somewhat late for dinner. Unfortunately, the car ran over a large stone, with the result that it was partially overturned, and the three gentlemen were projected at least ten feet from the vehicle, which subsequently overtook them and rolled upon them; the car continued its course downhill until it met a tree by the side of the road, its progress being thus stopped, but not before the vehicle was very seriously damaged.

#### Automobile Exhibition at Boulogne.

ON the occasion of the holding of the congress of the French Association for the Advancement of Science at Boulogne-Sur-Mer from September 14th to 21st next, it is proposed to hold an exhibition of motor-vehicles. Monsieur Paul Dislère, who is organizing the show, will also deliver a paper before the Association dealing with automobilism from three points of view—viz., the motor, the carriage, and the travelling and control of the complete motor-vehicle. This gentleman, formerly a marine engineer, is quite competent to deal with the subject matters of his proposed paper, and it is anticipated that the Congress will be considerably interested in the views of Monsieur Dislère and that an instructive discussion will ensue. It is also rumoured, we hear, that the Mayor of Dover purposes to inaugurate a similar exhibition on the occasion of the meeting of the British Association for the Advancement of Science in his town. Doubtless some of the participants in the Boulogne show will be tempted to cross *la Manche* in order to take part in both shows.

#### The French Automobile Club's Exhibition.

APPLICATIONS for space at the French Automobile Club's Exhibition in the Tuileries Gardens still continue to pour in upon Monsieur Gustave Rives, the Director-General. Freedom from import duties and octroi dues has been secured for the vehicles of all foreign exhibitors that are imported into France and Paris for the show, and M. Rives is leaving nothing undone that is likely to contribute to the success of the undertaking. He has secured the patronage of Monsieur Delombre, the French Minister of Commerce, for the Exhibition, and this gentleman, in order to give additional *éclat* to the opening proceedings, has consented to formally open the show in his official capacity. Monsieur Delombre, apart from his official interest in the automobile industry as an important branch of the commerce of France, takes a keen personal interest in the advancement of motor road locomotion, and this he has amply demonstrated, both by his patronage of the Exhibition and his consent to take the leading part in the opening ceremonies.

#### Forthcoming Long-Distance Tour of French Automobilists.

In past years the French Automobile Club has organized a long competitive tour for automobile vehicles, which has generally taken place in July. This year, after some amount of vacillation, it has been definitely decided that the Club should not promote any such contest for

the present year. As a result, one of the French newspapers has stepped in to fill the breach, as has been the case on several previous occasions in order to inaugurate contests which the organized clubs have not seen their way to promote. This prominence of French newspapers, which is not entirely restricted to those devoted exclusively to sport, in promoting automobile contests, is peculiar to the Continent, and, so far as Great Britain is concerned, automobilists will probably have to wait a great many years before, say, the *Times*, the *Daily Telegraph*, or the *Standard* promotes contests and offers valuable prizes for competition amongst automobilists. The newspaper which is undertaking the duties of *organisateur* on the present occasion is *Le Matin*, but the patronage and support of the Automobile Club of France has also been given to the project; prizes will, furthermore, be provided by this organization. The contest is an international one, and is open to all classes of vehicles, these classes being distinguished in the official regulations as follows: (A) Carriages having seats for two persons at least, placed side by side; (B) motor-tricycles not exceeding 150 kilos. in weight when unloaded, neither fuel, stores, baggage, rugs, etc., being taken into consideration; (C) vehicles which are not included in either of the foregoing categories. Each vehicle competing in Class (A) must carry at least two persons, one of whom must be a member of the Automobile Club of France or of a club affiliated thereto, who will act as observer on behalf of the Club and the promoters of the competition. If the driver only is carried, a dead weight of 70 kilos. must be taken in lieu of the second passenger. The competition is timed to start at eight o'clock in the morning of July 16th, the competitors being dispatched at half-minute intervals. The course will comprise about 2,500 kilometres, and will be taken round the confines of France. In passing through towns regulations are made that the speed shall not exceed 15 kilometres per hour, observers being placed at the entry to, and outlet from, each town to check the speeds and to deliver to each competitor a time docket showing the time of his arrival and departure at each town, adjustments being made for the reduced speed when the time for the whole journey is computed. Other regulations are made in regard to the proper control and observation of the cars, including the provision of signallers at dangerous turnings and crossing of railways, canals, etc. It will be seen from the comprehensive programme that every possible type of vehicle can be represented in the contest. In this competition, at least, Monsieur Leon Bollée will not have cause to complain that his vehicle is debarred from taking part as a tricycle because of its weight, or as a carriage because the seats are not side by side, as it appears that Clause (C) is especially designed to embrace his vehicle.

#### Speeds in France.

THE French automobilist is always demanding that his vehicle shall possess a constantly growing speed, but there are now signs that, excepting amongst semi-professionals and mad-brained enthusiasts, this demand is decreasing. It is all very well to astonish the world by demonstrating that it is possible to travel at speeds equal to that of many express trains, but after all the greater number and the more sedate portion of the community desire comfort and safety rather than these dangerously high speeds. It is astonishing, therefore, to find the French manufacturers of automobile vehicles so much more ready to cater for the racing devotee than to pay attention to the needs of the much larger section of the public. Whilst automobilists in Great Britain have perhaps been saved from the "racing-fever" by reason of the strictness of the laws controlling the use of the motor-vehicle, the French *chauffeur* has in part been encouraged in his madness by the absence of properly authorised regulations. Times are changing, however, and already there are not wanting signs that in the near



future some restrictions will be placed upon the road-racer in France. Those who desire to see the automobile reach its true position in the commercial world will welcome these restrictions on racing, as they will tend to increased attention being paid to the purely commercial side of the industry.

## CORRESPONDENCE.

### THE WORKING OF THE BENZ CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I be allowed to give my experience of the working of two new Benz "Ideal" cars on the journey from London to Birmingham?

Mr. A. Campbell, of Llandudno, whom I met in London, kindly offered to drive one car, a No. 1 "Ideal," while I drove a No. 2. Accordingly, we left Oxford Street about 3.30 on Saturday afternoon, the 15th inst., in company with Mr. Plowright, of King's Lynn, who was taking home a No. 2 "Ideal," and ran with us to Barnet. Mr. Plowright left us there and proceeded to Lynn, while we drove on to St. Albans for the night. After stabling the cars we had dinner. We took a stroll round the town, speculating on our prospects of a fine day for our run to Birmingham.

The next day we started at 9.30—and so did the rain. We were soon wet through, and the roads became covered with mud, making the going very heavy. However, we decided to push on as one of the cars had to be delivered to a purchaser the next day.

Our first stop (10.15) was just after passing Dunstable, where I found Mr. Campbell, whose car was much faster than the one I drove, waiting for me and doing an impromptu dance to restore animation. After a few minutes' chat, and filling our pipes, we oiled the motors over and started again (10.50)—and so did the rain. We ran on to Towcester, arriving at the "Talbot" at 12.35—the rain descending in torrents.

We had dinner here, and after enjoying a big fire we had to face the rain again. We oiled up, and I gave the No. 2 a bucket of water, the tanks in No. 1 being almost as full as when we left London. Leaving Towcester at 2.30, we reached Coventry at 5.10, where we stopped for water, and filled up both tanks. *This was the first water given to the No. 1 since leaving London.* Leaving Coventry at 5.35 we arrived at Birmingham at 6.45. Our average rate for the whole journey was 14 miles per hour. I need not say that the cars were literally plastered with mud, and the way they came through it was marvellous.

Now, as regards "breakdowns," neither Mr. Campbell nor myself touched a single tool or did anything whatever to either of the motors beyond oiling. There was absolutely no stop other than those given above, the motors never having been stopped between the places mentioned. One of the cars went away on Tuesday, and I have since heard from the purchaser that one of the grease-cups on the counter-shaft had been lost. The other car goes away to-day, and is in perfect order. I hear from Mr. Plowright that he had just as successful a run, and I think the fact that three cars, new, and taken straight from stock, and without any special overhauling, made the run of over 100 miles through wind and drenching rain, over roads inches thick with mud, and making such good time, goes far to disprove the exaggerated statements which have been made against these cars.

I expect to make the run again this week with two more cars, and will give your readers the result of the further test.

Acocks Green, Yours faithfully,  
Birmingham, April 25th, 1899. A. J. ALDRED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have been much interested in your valuable paper, and I have been more interested in motors of various makes. After attending numerous shows, I at last made up

my mind to purchase a Benz "Ideal" No. 2 car, '99 pattern, and gave the order for same in January. I received notice from Messrs. Hewetson, Limited, to say the car was ready, and on Saturday, the 15th, at 4 o'clock, we started on our journey to King's Lynn in company with two other cars bound for Birmingham. At Barnet we parted company and went on our journey to Stevenage and stopped the night at the Lion Hotel. On Sunday, on looking out of my bedroom window, I found rain was descending, and my feelings can be imagined as this was my first run in charge of a car. However, we started, like sportsmen, at 9.15 for Cambridge, although it was still raining. We did not stop, but went through to Littleport and lunched at the Granby Hotel. We left at 2 o'clock and arrived at King's Lynn at 3.45, thus making only one stop from Stevenage to Lynn, about 77 miles, the roads being very bad a great part of the way. After tea we had a run round Sandringham, left Lynn at 6.10, drove round the park, and returned home at 7.45. On Monday we had a short run, and on Tuesday also. On Wednesday we journeyed to Hunstanton, and after various short runs returned via Sandringham. On Thursday again to Hunstanton, and witnessed opening of new post office, and were busy giving the public short trips during the afternoon. Hunstanton is very hilly, and we had three persons in the car each time, which I think is giving it a good test. On Friday we drove to Wisbech. On Sunday we had a long spin, and lost ourselves in various bye-ways, experiencing bad roads and cruel hills, and had to resort to first speed, which appears to be invaluable. The mileage run from Saturday, 15th, to Sunday, 23rd, totals 478 miles, and we have not had to lighten our load or walk up any of the hills which we have had to contend with in a run of this kind. Of course, the time is young, but to all appearance the Benz car is certainly a marvel. I should like to see better fitted connections for the electrical wires as they have to play a very important part, but this can be rectified for a few pence by having solid eyes instead of the wires being twisted round the screws of the coil. For two-thirds of the journey of 478 miles the car has had full loads, and, speaking broadly, I am delighted with it, and it more than meets my expectation. Perhaps it would be right for me to mention that I am a practical engineer, and have had a great amount of practical work with gas engines and electrical work generally. Probably this may have given me some assistance in handling the motor properly.

Yours faithfully,  
King's Lynn, Norfolk. JAMES PLOWRIGHT.

### SHALL THE N.C.U. CONTROL MOTOR-VEHICLE RACING ON THE TRACK?

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have most carefully read the correspondence from Mr. C. G. Wridgway which has appeared in your recent issue, and what I cannot understand is why do the N.C.U. object to answering the questions which he asks. They seem to me perfectly reasonable, and questions that any one would ask before signing some document in which one's private affairs are rather deeply probed into.

As far as I understand the matter, here is a private user of a motor, not in the motor trade or in any way interested except as an enthusiast, and because he wishes to compete in a race he has to be asked a number of questions, which, however necessary they may be so far as cyclists are concerned, I cannot see their application in this case.

The whole matter seems to me to be on a par with that of some other correspondence which I saw recently with this cyclists' body, who laid down a rule or regulation in regard to motor-cycling, and then when asked to define it were unable to do so!

I myself am only an unattached cyclist, but I cannot understand why those who govern our sport do not elect honorary officials who would carry out the rules of the

Council in a manner that would be intelligent to the ordinary onlooker. At present, to both myself and my friends, it is shadowed in mystery. Simple questions are asked, and nothing but voluminous correspondence seems to result. Can you tell me what is the matter?

Yours truly,  
A. E. ASHTON.

[To our minds the N.C.U. are endeavouring to control a matter of which they at present possess but very little knowledge, and, moreover, have sought to make the racing motor-carist amenable to similar regulations to those controlling the racing cyclist. When the N.C.U. gain additional knowledge they will doubtless alter these regulations, but the whole crux of the matter, in our opinion, rests on the question whether the N.C.U. shall control motor-vehicle racing. To our minds they should not do so. Although we are not supporters of motor-vehicle racing, we think this section of "sport" should be controlled by a body elected from the ranks of those taking part in the automobile movement. In regard to the conducting of the business management of the N.C.U., we think some improvement is to be desired.—ED. M.-C. J.]

#### AN IDEAL MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am an engineer and a subscriber to your valuable paper, and send you the enclosed as a sort of ideal which I have set myself in motor-car making. It may also be of interest to your readers, especially if other people will also state their ideas and ideals:—

##### THE CAR.

1. All weight should be kept as low as practicable.
2. Pneumatic tires and ball bearings must be universally used.
3. All bearings should be supported on both sides—especially wheel bearings.
4. The steering must be positive—no gearing—ball bearing, and of the double cycle head type. The wheels must turn at right angles to the frame, and the whole apparatus must be supported in every direction, for all strains—fore and aft, up and down, sideways, and twisting.
5. The driving must be in the centre of wheel axle, on a differential gear arrangement, like the present tricycle.
6. A broad belt chain should be used. Renold's laminated chain, not less than 2 in. wide, is a good type.
7. The frame must be rigid in design, well stayed for all strains—fore and aft, up and down, sideways, and twisting strain. A spring quality of steel should be used, so as to give the frame a high movement of elasticity, avoiding permanent sets. No springs are necessary, except springs to axle boxes, allowing up and down motion only.
8. The body of the car—that is to say, the seating arrangement—must be slung on an entirely separate set of springs. There must be no rigid connection between car and body.
9. Steering should be carried out by means of a horizontal wheel.
10. Wheels should be fairly small—say 30 in.—all four of equal size, and run in two tracks only.
11. Steel should be used exclusively—no wood at all, except in body construction.
12. Plate steel forms a good material for frame construction—better than tube.
13. Built steel wheels, steel rims, and tangent spokes are a necessity.
14. Large drum brakes are also a necessity.
15. All gearing should be cased in, and run in oil.

16. Weight should be equally distributed on all four wheels.
17. Rear wheels should drive, and front steer.
18. Chain adjusting should be done by means of jockey pulleys; no shifting of main bearings should be necessary.
19. All chain wheels should have deep shrouds to steady running of chain.
20. Pneumatic tires should have tangential fabric.
21. Tires should be securely fastened to rim, so as not to come off in case of puncture.
22. Keep car narrow and long, rather than wide and short.

##### THE MOTOR.

1. The motor should be self-starting.
2. It should run at any required speed without gearing.
3. It should drive direct on rear-wheel axle without intervention of gearing.
4. It should be possible to considerably overload it for short periods.
5. It should be as simple as possible.
6. All bearings should be constantly lubricated.
7. Pure rotary action is necessary—no thrust action.
8. It should start with full load.
9. It should reverse at all powers.
10. It should be noiseless in operation.

##### THE PRIME GENERATOR.

1. It must be capable of being left any length of time without attention.
2. It must be capable of standing great taxes for short periods.
3. It must not generate when at rest.

##### MOTOR-CAR AXIOMS.

1. The body of car is a secondary matter, and in all respects it should be remembered that a motor-car is being built, not a horse carriage adapted to carry a motor.
2. Wherever possible straight lines in construction should be used.
3. In designing, always first design regardless of expense; then consider commercial methods.
4. Be quite regardless of existing methods, either in motor-cars or, worse still, carriages; most of them are wrong. Use your own ideas, mixed with common sense: don't rake up other people's ideas.
5. Have nothing to do with *puncture-proof* tire devices.
6. Use best materials, and never consider waste.
7. Use no compensation joints in frame of car—they are wrong in principle.
8. Always remember that in machinery rigidity is one of the first points to consider.
9. Take no notice of what is said about rigid frames. People say the four wheels of car can never be on the ground at once with a rigid frame; the spring axle boxes and pneumatic tires will see to this for you.
10. Don't worry about lightness; first design, then cut down weight.
11. Never have one handle to do about fifty operations. Remember that you will have fifty causes to locate if anything goes wrong with it.
12. As a last word, always bear in mind that friction exists everywhere, and that what you put into a machine in power is reduced when it comes out in work. Don't try to make a perpetual motion car!

Hoping you can find space in the correspondence section of your paper for the insertion of this letter,

Hampstead, N.W.,

April 25th, 1899.

Yours truly,

A. S. GOODWIN

## THE FAILURE OF A PRESSURE BURNER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I would esteem it a favour if you could enlighten me as to the following:—

I went last Saturday for my first spin on an Ariel motor-tricycle, and after riding some three miles I found that the motor would not work. I then dismounted to examine the cause of the sudden stoppage, and found that the ignition tube was not heated to its full extent. I examined the reservoir which contains the petrol under pressure, and which I found contained a great pressure, but the flame did not seem strong enough to heat the tube. I then unscrewed the Bunsen tube and examined same closely, but could not find anything wrong with it. I then refitted it and lighted up, and found that it worked well for about 200 yards, when another stop took place, with the result that I had to give up my ride in disgust.

Can you, with these particulars, throw any light on what was the cause of the failure of ignition tube not heating?

Thanking you in anticipation,

Yours faithfully,

"NOVICE."

Dublin.

[We are afraid "Novice" suffered from one of the inherent faults which attend tube ignition and pressure burners. From the particulars given, however, it is not easy to offer an opinion as to the real cause of the burner not acting. There are several causes which might give rise to this state of things: (a) Was there a leakage between the burner and the pressure tank? (b) Was there a free passage for the petrol between the tank and the burner? (c) Was the control cock free from obstruction? (a) This can be determined by the leakage of petrol at any joint. (b) This can be determined by removing the burner and turning on the control cock, when, of course, the spirit will be projected upwards. (c) If (b) is answered in the negative the point of obstruction can be determined by a similar test between the pressure tank and the control cock. If none of these tests locate the fault, the burner itself must be examined thoroughly. The wick must be tested to see that it is not too tight and that it is in good order. The jet of the burner must be examined to see that no small obstruction has lodged therein, and in the event of such obstruction being found a small watchmaker's broach or "pricker" should be used to remove the obstruction. In every probability the last mentioned was the cause of the failure. Small impurities and particles are frequently found in petrol, and the pressure in the tank forces these onward until an obstruction is formed. Our correspondent's examination possibly displaced the obstruction temporarily, but the renewed pressure probably thrust it forward again. Every care should be taken to filter the petrol supplied to the burner tank; the time occupied in this apparently wasteful proceeding will be compensated by the freedom from subsequent trouble.—ED. M.-C. J.]

## THE N.C.U.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I enclose you a rather curious letter I have received from a body called the "National Cyclists' Union," and also copy of my club's reply.

I am loth to trouble you in the matter, but I feel that this attempt to control a purely sporting gathering, and one that is so essentially outside any connection with cycling, must be the work of an apparently energetic but undoubtedly misguided body.

The position is that the Motor-Car Club are holding an open competition on May 6th at the Crystal Palace, for the purposes of bringing together all the various types of motor-carriages, to give the owners and all those interested in the motor industry an opportunity of testing the various types and ascertaining which type is the most suitable for every-day work upon the road.

The test includes many starts and stoppages over a measured distance and on private undulating roads. I ask, sir, what right has the National Cyclists' Union to interfere with such a meeting? Here they actually dare to ask the gentlemen driving their carriages in these contests to take out a licence. This, on the face of it, seems most insulting, but when I tell you that before this licence can be obtained the applicants must fill up a form in which has to be stated their age, occupation, etc., and a large number of other equally objectionable questions, the impertinence of this body can be appreciated.

Motor-Car Club, Holborn Viaduct, Yours truly,  
London, E.C., April 24th 1899. FRED. W. BAILY.

N.C.U. to MOTOR-CAR CLUB.

To F. W. Baily, Esq.

DEAR SIR,—The London Centre issued to you a permit to hold professional races at the Crystal Palace track on Easter Monday last. It seems you have abused that permit by running at the same meeting a motor-cycle race between Wridgway and Rigal, both unlicensed riders, and I shall be glad of some explanation to lay before my Committee.

With reference to your meeting to be held May 6th, I would point out to you that in the event of any races, or time trials which would count as records, for motor-cycles, it would count by the Union as an unregistered meeting, unless a permit were taken out and the riders licensed. No Union official may officiate, and any rider holding a licence, either professional or amateur, would be disqualified.

4 Holmwood Road, Yours truly,  
Brixton Hill, (Signed) W. METSON,  
April 19th, 1899. Hon. Sec. London Centre N.C.U.

MOTOR-CAR CLUB to N.C.U.

The Hon. Sec., London Centre,  
National Cyclists' Union.

DEAR SIR,—Referring to your letter of the 19th, addressed to me personally, of course you quite understand that I am not holding any races personally. The control tests, etc., which I am holding, are run by the Motor-Car Club in conjunction with the Crystal Palace Co. It is, of course, obvious to you that gentlemen who own motor-cars and who will drive in these contests are not likely to have any inclination to take out cyclists' licences, either professional or amateur, and I think that if you will get your Committee to carefully consider the matter, they will see for themselves that it would be unreasonable to ask them to do so.

Here we have a Motor-Car Club getting up some competitions to give private owners an opportunity of testing their vehicles in a very complete manner, and you, it seems to me in a particularly interfering spirit, if I may be excused the term, write to me, I suppose as the Secretary of the Motor-Car Club, and say that these gentlemen must take out either amateur or professional licences. I cannot see why the Motor-Car Club should ask the N.C.U. if they may hold these competitions, as I utterly fail to see by what right you should ask to have any jurisdiction over it any more than if these races were held in the same carriages propelled by horse power or animal power instead of by engine power.

I will, of course, lay this portion of your letter before my Committee, who, whilst anxious to act in conjunction with the governing body of any sport or pastime, are bound to resent what seems to be officiousness on the part of some person or persons in a manner which would never have been contemplated or advised by the great body of cyclists who go to make up the N.C.U.

Yours truly,

F. W. BAILY,  
London, E.C., April 21st, 1899. Hon. Sec. Motor-Car Club.

## THE PENNINGTON v. MORS CHALLENGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is with pleasure we note that the Automobile Association are willing to run their four-cylinder Mors car against our two-cylinder car, each carrying two passengers and making the twenty-five ascents up Shapfell, commencing at a point ten miles south of the summit, the car making these ascents in the lowest aggregate time—a distance of 250 miles of hill climbing—to be the winner. As stated before, we have no intention of running our 125-guinea one-cylinder car against the 380-guinea four-cylinder Mors in this contest, as such a match is obviously unfair; besides, this one-cylinder car is only designed to run at a moderate speed, so as to keep within the reasonable limits of the law.

We object, however, to any second car accompanying the competitors on the run, as this might lead to pocketing or other interference—unintentional or otherwise; and we want this to be a straight, fair run between car and car. We are quite content with entering one car in the race, and we

think our competitors should also be satisfied with a single representative; or what is the good of the car that cannot make a 250-mile run? As many of the Automobile Association's friends as they please, or ours, may see the cars either at the summit or at the commencement of the ascent, and while, being a public highway, we cannot prevent any one going over the course, we appeal to all lovers of fair sport not to follow the cars or to approach them so near when they are on the ascending trip as to in any way interfere or add to the chances of accident. In motor racing, as in yacht racing, the competitors may be seriously handicapped by other craft getting in the way. Everyone will remember the heart-burning and bickering which arose over the last contest for the America Cup, and, on a small scale, we would not wish for anything of the same character to happen in this motor-car contest. We only want a fair and square run, and if the Mors car proves the better car we shall be the first to admit it.

While we are about it, and since it will be necessary to have two independent timekeepers, one to note the commencement of each run and the other to register the arrivals at the summit, we do not mind meeting the Automobile Association's apparent wishes, and adding to the interest of the spectators and also of the motor-car public who may read of the event, by entering one of our motor-tricycles against one of the motor-tricycles which the Automobile Association are pushing—the Barrière, for instance; these tricycles to make the same number of ascents as the motor-cars. We throw out this suggestion as an additional means of adding to the interest of the event, although from all we can hear a hill-climbing contest such as is now to take place is creating amongst motor-car users such an interest as perhaps no other form of motor-car contest would raise, for it is notorious that the glaring defect of motor-cars up to now has been their lack of hill-climbing qualities; besides, on such gradients as the cars will encounter it is hardly likely that the legal speed will be much, if at all, exceeded.

Yours faithfully,

Manchester.

PENNINGTON & BAINES.

## EFFECT OF "JARRING" ON RIDERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your readers state their experience with regard to the jarring effect on the spine in using a motor-tricycle at high speed on roads which are "lumpy." I find after thirty or forty miles at fast speeds on a De Dion tricycle if the road be lumpy—not rough or stony, but frequently hollowed—that the succession of shocks on the spine is so great that I have been unable to put my shoes on.

It seems to me that no saddle or seat yet used is really suitable for use on a De Dion tricycle running at twenty or twenty-five miles an hour with pneumatics blown hard, and I shall be glad to hear from any one who has had the same trouble, and also if they have found a remedy. I did twenty-three miles through thick mud and rain over a hilly route yesterday in 1 h. 25 m., which I thought was good travelling, but my appearance on arrival was not elegant, as there were no mudguards over the driving wheels, and I was a mass of mud from head to foot. There is little doubt that the 1899 De Dion with electric ignition is a perfect machine.

I have had two years' experience of tricycles—first, electric with accumulators, then tube ignition, and now electric ignition and primary batteries—and I would not on any consideration again go back to the lamp and tube, which I consider inefficient, troublesome, and dangerous.

Yours truly,

Bradford, April 25th, 1899.

JAS. ED. TUKE.

THE Automobile Club of Flanders is in a flourishing condition, counting at present more than sixty active members.

## SCOTTISH NOTES.



### The Benz Car in Scotland.

I HEAR that the new form of Benz car, with its epicycloidal hill-climbing gear, has had a successful trial on some of our hilly roads. The pace up hill is, of course, very slow when this gear is in use, but apparently no hill has been able to overcome the mechanical perfection of the arrangement. It would appear that this addition to these handy little cars will considerably advance their sale in these hilly districts.

### Glasgow Exhibition, 1901.

THE last years of the nineteenth century will be remembered in history for many important and remarkable things. Not the least important of these will be the inauguration of the change in the methods of road-locomotion and transport throughout this country, which at present we speak of as the advent of the motor-car or self-propelled vehicle. A great International Exposition, as everybody knows, is to mark the opening years of the new century in Scotland—the Glasgow Exhibition of 1901. The ceremony of cutting the "first sod" in connection with the erection of the noble pile of buildings which is to house the treasures of art, science, and industry, which will then be poured into Glasgow from every quarter of the globe, was performed on Saturday last by the popular Lord Provost—Sir David Richmond. As was to be expected, the mechanical section of the coming great enterprise is receiving special attention, and among many attractions which will there be offered one of the most important will be the motor-carriage section. That the exhibits will be of great interest and importance is certain, for, at its present rate of growth, when the Exhibition year arrives the motor industry will be found to be one of considerable magnitude and the public interest greater than ever. I understand that the committee are considering the practicability of providing facilities for showing motor-cars in motion, and it is sincerely to be hoped that no insuperable obstacle will come in the way of this, for it is now generally accepted that a show of motor-cars at rest is of little practical utility. To have an opportunity of giving to the thousands of people who will visit the Exposition a practical demonstration of the capabilities of the various systems and makes of self-propelled vehicles is of the first importance to the exhibitor and public alike.

### The Scottish Automobile Club.

ARRANGEMENTS, I am informed, have now been made for a preliminary meeting in connection with the formation of a Motor-Car Club for Scotland, and I have been asked to announce to the readers of this Journal that a meeting will be held on Wednesday, May 3rd, at 2 o'clock, in the chambers of Messrs. Mitchell & Smith, C.A., 59 St. Vincent Street, Glasgow. To this all interested in the automobile movement, whether owners of motor-cars or not, are cordially invited, and I trust the meeting will be well attended and be thoroughly representative of Scotch automobilism, in order that the club may get a good start. The feeling appears to be very general that the new club should take the form of a branch of the Automobile Club of Great Britain and Ireland, on the lines of the Liverpool Branch (previously known as the Self-propelled Traffic Association, Liverpool Branch). Now that this matter has taken definite shape, so soon as the club has got to work I look for a very large increase in the number of converts to automobilism in the North. As was remarked in last week's Notes, there is room for such a development in the Glasgow district, which is certain to be the centre that will first benefit by the institution. Make a special note of the date of the meeting—Wednesday, May 3rd, at 2 p.m.

**Beeston  
versus  
Daimler.**

ONE day last week I saw Mr. John Stirling (of Stirling's Motor-Carriages, Ltd.) spinning over Douglas Moor (Lanarkshire, not Isle of Man) on a Beeston motor-tricycle at a very rapid rate. I was myself driving a fairly fast "Daimler" car, but all my efforts to overtake him were without success, and I had ultimately to give up the chase, which had extended to close on twenty miles. The look of amazement which I observed on the faces of cyclists passed on the way, as the tricycle left them behind on the hills up which they were slowly grinding, was very amusing. The motor ran so smoothly that I fancy several of them hardly realized the fact that the tricycle was self-propelled, until it struck them that the rider was not pedalling. The tricycle is at present more of a novelty in Scotland than the larger type of motor-vehicles, and consequently the small machine I observed excited more interest and wonderment than the orthodox Daimler in pursuit. I was immensely pleased to see the success of the little tricycle, as there is certain to be an ever-increasing demand for a light, fast, and cheap motor-vehicle. It would, I think, remove one common objection to the tricycle if the makers would at once adopt a satisfactory cushion seat in place of the uncomfortable saddle supplied. In France a pneumatic seat with back rest attached is largely used in place of the ordinary saddle. A similar seat might be with advantage put on all English-built machines, more particularly those designed for ordinary touring and not especially built for track racing.

**The Highland  
Agricultural  
Show.**

THIS great show falls to be held this year in Edinburgh, July 4th to 7th, at Prestonfield Grounds, and the presence of H.R.H. the Prince of Wales, president, will on this occasion be a big attraction. I understand it is the intention of some of the Scotch motor-car firms to take the opportunity of exhibiting examples of their latest productions in self-propelled carriages and transport wagons suitable for agricultural purposes.

**Motor Pacing.**

THE 1899 cycle racing season opens on Saturday, when motor pacing will be introduced for the first time in Scotland, at Celtic Park, Glasgow. This is sure to add a new interest to the sport. Motor-cycle events will most certainly follow at a very early date.

**Improved Weather.**

WITH the arrival of the long looked-for improvement in the weather this week, automobilists have had a good time, and I hear of the accomplishment of many enjoyable excursions.

**The Advance of  
Automobilism in  
Scotland.**

As a sign of the advance in automobile locomotion in Scotland, it may be mentioned that the Falkirk District Motor Company have no less than thirteen cars in daily service, and none of them are ever wanting customers. This demonstrates that, given sufficient enterprise, there is a vast and profitable field for the employment of motor-vehicles for such purposes, and it is astonishing that the profitable nature of motor-car hiring has only recently been recognised. Certainly some movement is now taking place, but there are still vast districts practically unexploited.

"BROWN HEATHER."

COULSON'S SYNDICATE, LTD., has been recently registered with a capital of £10,000 in £1 shares. It is formed to adopt an agreement with H. Maw, and to manufacture, sell, and deal in cycle, motor-cars and similar carriages.

**AN IMPROVED LONGUEMARE  
CARBURETTOR.**

A FORM of carburettor which is very largely used in France, in connection with petroleum-spirit motors, and which is already well known in this country, is the "Longuemare," made by Ve L. Longuemare, of 12 Rue du Buisson-St.-Louis, Paris. The device, which was shown

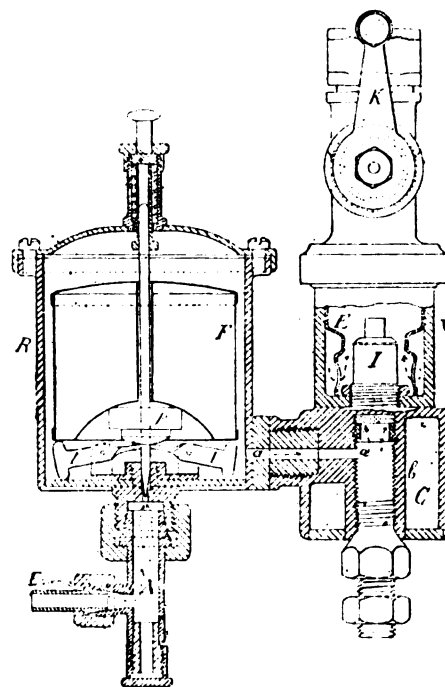


FIG. 1.

at the Motor-Car Exhibition at the Agricultural Hall, Islington, in August last year by the Automobile Association, of Holland Park Avenue, W., has lately been improved, and

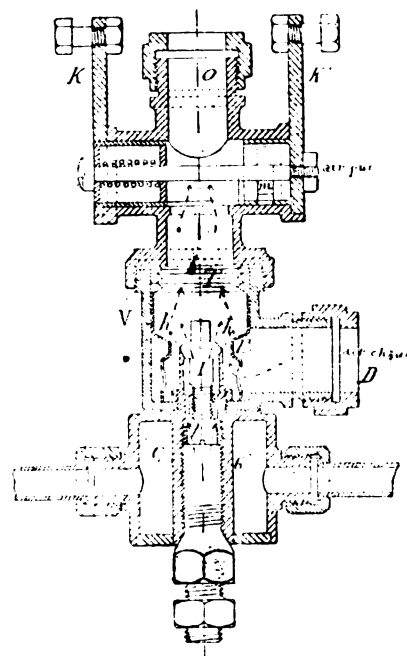


FIG. 2.

we are now able to illustrate and briefly describe the latest form of the carburettor. Referring to the accompanying illustrations, Fig. 1 is a vertical section of the device, while Fig. 2 is a transverse section of the carburettor portion. Three main parts are comprised in the apparatus, the auto-



matic supply chamber, the carburettor proper, and the mixture regulating valves. The supply chamber *R* (Fig. 1) is connected by means of the pipe *A* up to the main storage tank. Within the chamber *R* is a float *F*, free to rise and fall as the level of the spirit in the chamber varies. Below the float are pivoted two small levers, with counter-weights *ll*, so arranged that when the float *F* falls to the bottom of the chamber, the counter-weights are pressed down, the inner ends of the levers *ll* thus rising and lifting the weight *p* and consequently the needle, so opening the spirit admission pipe *A*. The spirit then passes into the chamber *R*, and flows through the pipe *a* to a small chamber in the carburettor proper, where it is slightly heated, a portion of the exhaust gases from the motor being caused to pass through the chamber *b* *C*. Under the action of the aspiration stroke of the motor and the warm air drawn in through the pipe *D*, the spirit passes up into the chamber *I* through a series of wire-gauze discs. The chamber *I* is closed at the top, but is provided with a number of holes *h* through which the spirit passes into the chamber *V*, where it is intimately mixed with the warm air entering by the pipe *D*. It will be noticed that the lower portion of the walls of the chamber *V* are pressed inwardly, this being done to increase the speed of the indrawn air, so causing it to draw with it the required quantity of spirit. The mixture thus formed passes upwards through a second series of wire-gauze discs *T* to further intermingle the air and spirit, to the regulating valve. The latter is provided with two handles or control levers *K* *K'*, the former regulating the quantity of carburetted air allowed to pass along the pipe *O* to the motor, while by means of *K'* the richness of the explosive mixture is varied as desired by the admission of pure air through the side opening *m*. The two handles or levers *K* *K'* are so arranged that they can, by suitable connecting levers, be manœuvred from the conductor's seat. It is claimed for the new carburettor that while it is relatively very light its parts are simple and of ready access; that it is regular in its operation, and cannot easily get out of order.

## THE LONDON STEAM OMNIBUS IN 1833.

(Concluded from page 112.)

WE herewith conclude the account of the Peterborough Court conversation relating to a mythical London steam omnibus of 1833. The Editor of the *Mechanics' Magazine* frequently published accounts of these imaginary soirées, the "proceedings" of course consisting of ironical and satirical skits upon matters of public importance at the period. The steam omnibus of the "early thirties" was invariably treated with consideration, and it was only when some "know-all" loudly proclaimed his ability to surpass Hancock in designing these vehicles, of course without performing the task, that the Editor of the *Mechanics' Magazine* took upon himself to pillory the steam 'bus in his accounts of these mythical conversaziones.

RATTLER: Well, after being detained for this purpose about half-an-hour, off we started again, and were going in beautiful style down Notting Hill, when the engineer happening to reverse too suddenly the action of the steam to allow a large carrier's wagon to pass, one of the cylinders gave way, with a tearing noise, like to the rushing of a prodigious rocket. Stopped to examine into the cause, and discovered that the fracture was owing to a flaw in the iron employed. Only think how provoking! Who could provide against such a disaster as that?

SOL. SEC.: Who, indeed, considering how *notoriously bad* all our English castings are!

RATTLER: Fortunately there was a smithy close at hand, and the damaged cylinder was soon made secure by a strong hoop of S.C. iron. Started once more, and went on very smoothly and steadily through Shepherd's Bush and Hammersmith, as far as Holland House, when cousin Harriet, who was with us—

EDITOR: Cousin Harriet? Whom do you mean? Not Harriet Norwich, the famous tale writer?

RATTLER: Yes, the very lady. Harriet, you must know, is writing a tale of locomotion, to be called "The Pack Horse and Fire Steed," and, hearing of my being invited to go on this steam excursion, she insisted on accompanying me, in order that she might collect some real matters of fact for her story. Well, as I was saying, when we reached Holland House, the thought struck cousin Harriet that as her friend, Lord Brougham—

JUNIUS REDIVIVUS (*emerging as usual from a cloud*): Friend—Alas! alas!

RATTLER: Was then dining with the noble owner of the mansion, it would be paying him a pleasant compliment were we to steam up to his house, and show off our engine. Having mentioned her wish to Speed, he at once consented, and off we turned from the road. Luckily the carriage never performed better than just at this time. Oh, how gallantly it went up the avenue, snorting like a war horse, and stopped all of a sudden in front of the banquetting room, as if under the curb of some imperial rider! In an instant the dinner table was deserted, and every window was filled with the wondering guests. Even Holland himself, though all on crutches, was there, smiling blandly on this modern wonder; while Brougham, at his side, gave one of these ecstatic twitches of the nostrils which seem to say, "What do you think of my thunder?" Holland was observed to whisper to the Chancellor, who was observed to whisper to some one else, who in a minute or two after was seen to advance from the house, "with measured steps and slow," towards the carriage: "Is not Miss Harriet Norwich here?" he asked; on which occasion cousin rose and answered in her usual abrupt way, "Yes, sir, Harriet Norwich—the Norwich—is here; what are your commands?" "I am commanded, fair lady, by my Lord Chancellor, to say that he has been requested by my Lord Holland to beg that you will do him the honour to alight and partake of the hospitalities of his humble mansion." Scarce had the words escaped the minion's mouth ere Harriet had descended from the carriage and accepted Mr. Chamberlain's proffered hand, simpering the while, "*Honour*,"—"Humble mansion"—"Oh, dear!" Feeling somewhat queer at being thus left a spectacle for the great folks in the great house to gaze at, I called out to Harriet, "I say, Coz., what's to become of us, while you're doing the grand there? Can't we go with you?" "Go with *me*," she replied, with prodigious disdain; "no, sir, I go alone; you and your friends *must* steam about there in front of the house for a while; I shall return to you presently." On this, a gentleman in the after-part of the carriage, who had, ever since our turning off the road, been grumbling excessively, and who I understand is a retired major, of the name of Barbette—

BARBETTE: Yes, sir, a retired major; but ever, as you will find, a most forward gentleman when there is any point of honour or of good feeling to stand up for. I did grumble, it is true, and well I might, methinks, at being shown up in this way, like some great Bengal tiger, for the entertainment of such an apostate coterie as that of Holland House.

RATTLER: I don't blame Major Barbette for feeling annoyed at the circumstances. I was a good deal hurt myself at my cousin's cutting us in the way she did. But, as I was saying, when the Major heard Miss Harriet say that we *must* steam about in front of the house while she paid her respects to the party within, he broke out into a fit of most ungovernable rage, and swore that he'd be d—d if we should. Speed tried to pacify him, but in vain. The Major protested that he would make a personal affair of it with Speed if he did not steam off instantly, and being warmly seconded by Mr. Testall, Mr. Crucible, and some others of the party, Speed was

forced to yield. So off we set at full speed down the avenue, while Cousin and her noble friends, imagining, I fancy, that we were only taking a little turn for their amusement, waved their handkerchiefs and clapped their hands, as if in high glee at the sight.

EDITOR: And were you really so rude as not to return for your fair cousin?

RATTLER: 'Twas her own fault; she gave us the cut arrogant, and we did but give her the cut valedictory in return.

CRUCIBLE: Had we returned, Mr. Editor, probably we should not have been here to-night, and that will with you, I am sure, be reason sufficient for the course we took. We left the fair lady in company she preferred, and which she is known to be proud of.

RATTLER: Soon after regaining the road, the engineer complained of a great deficiency of steam. Stopped to examine, and found that the infernal clinkers had again nearly choked up the fire bars. Stoker set to work to clear them, but using his poker too roughly he broke two of the bars right through the middle. What was to be done? No fire grate, and four miles yet to do. Observed that there was a marine store-shop hard by. Speed was sent in to rummage for something that might serve by way of substitute, and returned with a prodigiously large gridiron. Just the thing, however—fitted in to a nicety. Asked the store-dealer how he came by such a monster. Answered that he had bought it of a queer old gentleman who lived in the neighbourhood, and had it stuck up on the front of his house, by way of sign or ornament, for several years, but had lately parted with it for the sake of some new whim. Asked his name, and was told "William Cobbett." (Great laughter). You may laugh; we all laughed, too, till our sides were like to split. The Major, who was quite restored to good humour by the incident, has been chuckling ever since at the thought of it.

EDITOR: Well, it served your purpose, you say; so I hope you got on without any more such interruptions. 'Twas high time.

RATTLER: Yes, we did get on at last, and in good style. Never stopped once after leaving Kensington till we reached your door here, threading our way through the crowded thoroughfares of Piccadilly and the Strand with an exactness and facility which called forth universal admiration. The only thing we had to find fault with in this latter part of our excursion was the noise and shaking, which, on our getting upon the stones, became almost too much to bear. Must say that such jolting, and rumbling, and grating, and creaking I never met with in any carriage in all my life before. The more surprising, too, that the carriage was mounted on springs of an improved construction, invented by the company's engineer. Was assured, however, that it was all owing to that unfortunate priming of the cylinders in the first instance, for the water, getting where it should not have gone, washed away all the tallow, and that, you know, gentlemen, is a thing which might happen to the best of engines.

SPEED: I believe I may say that, upon the whole, every one of the party felt convinced, by our excursion, that the engine is a very admirable engine, and that the main difficulty of travelling by steam on common roads is now completely overcome, leaving only such a mastery of the minor details to be acquired, as practice alone can impart, to render steam carriages by far the safest, cheapest, and most expeditious vehicles that can be used on common roads.

SIR DI.: I, for one, must distinctly dissent from that opinion. I have remained silent during Mr. Rattler's amusing account of our excursion in order that I might see how far ingenuity could serve to give an air of triumph to what I must consider as, upon the whole, one of the most discouraging experiments ever made. Neither,

perhaps, should I care to make any remark on the plausible explanations he has offered of the various accidents and obstructions we encountered, but that they are so characteristic of the whole class of steam carriage experimenters, with scarce a single exception. It is always with them some minor or accidental circumstance that is to blame for every failure—now the water, now the fuel, now the iron, and anon some little screw; but never the general principle of the machine itself. Every carriage which has yet made its appearance has been for a time the very thing; but although full seven years have elapsed since we have been tantalised with such announcements, we seem to be nearly as far as ever from witnessing the general application of steam power to travelling on common roads. What ought we, in reason, to infer from all this, but that there is some real difficulty in the background which has yet to be overcome? I am not qualified to offer any critical opinion as to the capabilities of the particular carriage now in question, for I am no engineer, and but little versant in such matters. It may possibly be all that Mr. Rattler and Mr. Speed have represented—the "very thing" in reality at last; but I have my doubts, and I will briefly mention on what grounds these doubts rest. First, there was no proof that the water was foul, and but little probability that so serious a blunder should have been committed. Neither was there any proof that the coke was impure, nor that the iron was defective. Now if the water, and the coke, and the iron were all unexceptionable, what must follow but that it was the natural action of the machine itself—the great friction to which it was subjected, and the inefficiency of the means employed to obviate or modify the effects of that friction—which caused the priming and the clinking, and all the stoppages and accidents of which they were the occasion.

DUBIOUS: I, too, must beg to be classed among the dissentients, and for this further reason, in addition to those which have been so well stated by Sir Dionysius, that the clinkers which Mr. Rattler affects to treat so lightly would have been procured whether the coke were pure or impure, and that they constitute, in fact—if I am rightly informed—one of the greatest practical difficulties which steam carriage speculators have to contend against.

EDITOR: It is certain they do; but I was lately told by Mr. Hancock that he had devised a method by which this difficulty is completely obviated.

DUBIOUS: Let us hope this may prove true.

SOL. SEC.: Meanwhile the sum of all that has been said seems to be that this new carriage "Eclipse," which was to eclipse everything that had gone before it, has done no more than has been done twenty times before, and in many instances a great deal better.

EDITOR: The mere practicability of travelling by steam on common roads is a thing which no longer requires demonstration. All that is now wanted is satisfactory evidence that it can be followed up for a continuance with advantage.

CRUCIBLE: And for that purpose we must have a fuller and fairer account than has ever yet been furnished, in any one instance, of the expenses of working such a carriage, under the various heads of engineer and assistants, water, fuel, repairs, interest of capital, etc.

SIR DI.: "So much for Buckingham!" Let us now talk, if you please, of something else.

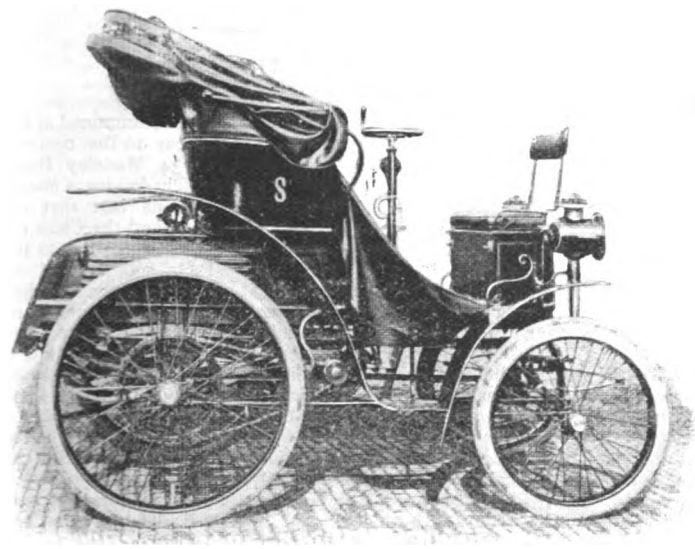
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THE Liverpool Self-Propelled Traffic Association (the local centre of the Automobile Club) will on May 1st issue forms of entry for the heavy vehicle trials which are to take place at the end of July. These may be obtained from the honorary secretary, Mr. E. Shrapnell Smith, by addressing him at the Royal Institution, Colquhitt Street, Liverpool.

## A DUTCH MOTOR-CAR.

WE illustrate herewith an example of a well-built motor-car manufactured in Holland. It will be seen that it is designed to seat two persons, an emergency seat being provided for a third.

The motor and mechanism is on an improved form of the Benz system, the radiating chambers and cooling tanks being fitted in the ordinary manner.



The carriage is graceful in design, and we are informed by a Dutch correspondent that it runs very easily and steadily, whilst the carriage-builder's portion of the vehicle is extremely luxurious, and gives every ease and comfort in travelling.

This car is manufactured by the Rijwiefabrik Simplex, of Overtoom, Amsterdam. This firm also make a delivery wagon on similar principles, of which we have a photograph but which does not lend itself to reproduction.

THE Rothwell Machine Co., Ltd., was registered on April 8th by Jordan & Sons, Ltd., 120 Chancery Lane, W.C., with a capital of £10,000 in £1 shares. It is intended to acquire the business of dealers in cycles, knitting and other machines, motors-cars, etc., as now carried on by the Rothwell Machine Co. at Bolton and Leicester, and to develop and extend the same. The directors are Messrs. E., J. and R. Rothwell.

We are glad to record that Mr. H. Carver, of East Quay and High Street, Bridgwater, is prepared to supply automobilists who may visit his district with petrol, of which he keeps a considerable stock. He also possesses a large riding school, in which he is prepared to "stable" the cars of any automobilists free of charge, or, if need compels, to carry out "any little adjustment" that the cars may require. We trust our readers will remember Mr. Carver's generous offer of free stable accommodation when they chance to be in his neighbourhood.

A CONTEMPORARY states that a novel motor race is to be run in Paris. According to this account the participants will be conducted to the second platform of the Eiffel Tower—leaving their motors, we trust, below—and a certain steeple will then be pointed out to them. The pistol will then be fired; the racers will have to rush down to their machines and make for the appointed spot by whichever road they choose. The first to arrive will carry off the prize. We have had no confirmation of this extraordinary report, and are inclined to doubt its correctness. At any rate, it is not among the published fixtures of any of the recognized automobile clubs.

## DESIGNS OF WHEELS, PULLEYS, AND FLYWHEELS.

In a paper on "The Design of Wheels and Pulleys," read before the Civil and Mechanical Engineers' Society on Thursday, the 20th inst., Professor Archibald Sharp, B.Sc., Wh.Sc., A.M.I.C.E., first referred to non-driving wheels, solid and cast in one piece, but differentiated into arms, rim, and nave. Built-up non-driving wheels with compression and tension spokes were then described; the ordinary cart and carriage wheels with wood spokes, having the latter put under an initial compression by the shrinking of the iron tire on the felloe, were next considered. The iron tire in this case also provides the only fastening required to keep the hub, spokes, and rim together. In the bicycle wheel with tension spokes the rim is subjected to a circumferential compression due to the screwing up of the nipples. In both these cases the total initial compression or tension on the spokes is approximately 2 $\pi$  times the total initial tension or compression on the rim. It was pointed out that a narrow rim was more liable to buckle sideways than a wider one, the Westwood hollow rim being an ideal one for resisting buckling. The spread of the spokes was necessary to give a rigid lateral connection between the hub and the rim, but while a wide hub was advantageous in this respect, a greater spread of the spokes made greater demands on the lateral strength of the rim. A mathematical investigation of the distribution of the stresses on the spokes of a bicycle wheel had been made, taking into account the elasticity of the parts. The stress on any particular spoke was given as a fraction, having for its numerator and denominator respectively a determinant of an order equal to half the number of spokes in the wheel. With a forty-spoke wheel the calculations of these determinants are so laborious that the formula is practically worthless as regards numerical results. The mode of transmission of the effort from the rim to the nave in driving wheels and pulleys was next referred to; the essential difference between flexible direct spokes, flexible tangent spokes, and rigid arms being pointed out. The author's own method of building wheels was described, as also its application to bicycle wheels, flywheels, and the gigantic wheel at Earl's Court. The question of wood *v.* steel for wheel and pulley rims was discussed. Iron or steel makes an ideal tie-bar, while it can be mechanically jointed with little or no loss of strength. Carpenters' joints, on the other hand, are usually weaker than the solid parts of the structure. But in many cases, especially where bending is the principal stress to be resisted, wood *per se* is immensely superior to iron or steel. In the case of a wheel or pulley rim the width is fixed by the conditions under which the wheel or pulley runs, and must be the same whether the material be wood or steel. The strength of a beam to resist bending is proportional to its width, to the square of its depth, and to the tensile strength of the material. Comparing two beams of wood and iron of the same width, length, and weight, the wood beam will have ten times the depth of the iron one, and the product "square of the depth by tensile strength" for the wooden beam will be ten times that for the iron beam. If the beams are to be of equal strength, the weight of the iron beam is  $\sqrt{10}$  times that of the wooden one. The Gormully and Jeffery bicycle wheel with wood rim, the "Dodge," "Reeves," and "Gilbert" wood pulleys with segmental rims were shown, while the Niles Tool Works Company's wrought-steel pulley with rim, arms, and nave made entirely from steel stampings received very high praise. The author then described and exhibited the pulley designed by himself with bent-wood rim, with numerous spokes made of round wood screwed to the hub and rim, and arranged to act as tangential spokes half in tension, half in compression. From the fact that the rim is supported at close intervals, it can be made much thinner and lighter than usual; and since the spokes are not subjected to bending stresses of appreciable magnitude they also are lighter than usual. The principles underlying the design of flywheels regarded as stores of kinetic energy were briefly discussed. The energy stored in a moving body being proportional to its weight and the square of its speed, it is natural that engineers should push the speed of large flywheels to the utmost safe limit. The circumferential stress due to centrifugal force on a ring rotating freely is also proportional to the square of its linear speed. But at a linear speed of 100 ft. per second, which is about the safe limit for heavy flywheels of usual construction, this stress is less than half a ton per square inch. A factor of safety of 17 has been claimed for heavy flywheels of the ordinary type, but this must include the factor of ignorance of the bending stresses induced on the rim by the constraint of the arms. These bending stresses are roughly proportional to the square of the unsupported length of rim between two adjacent arms, or inversely proportional to the square of the number of arms or spokes in the wheel. As to methods of diminishing bending stresses on the rims of flywheels, the author referred to a design for radial sliding joints for the arms, so that the rim might be practically in the condition of the freely rotating ring. Solid disc flywheels with the rim practically continuously supported gave a good design in cases where they could be applied; but they were inapplicable for the very large wheels required for large factories. The author's design for flywheels, in which a cast iron rim is united to the nave by a number of steel tangent spokes wrapped in pairs round the nave, was described. It was claimed for this design that the rim being supported at close intervals had bending stresses of comparatively small magnitude, while the initial tension on the spokes due to screwing up the fastening nuts produced an initial circumferential compression on the rim, and that if the total spoke sectional area was sufficient, even at a speed of 100 ft. per second, the circumferential tension in the ring might be zero. A brief reference to the destructive effects of flywheel accidents terminated a very interesting paper.

In the discussion, Mr. Swindley asked if he was right in understanding Professor Sharp to say that the width of the hub had no influence on

the strength of the wheel to resist buckling. If this was the Professor's opinion it was contrary to that of all cyclists. Mr. Hanssen said he thought the British manufactories were, perhaps, too much in the hands of commercial men, and that there was very little engineering ability on their staffs, most of the work being left to poorly-paid draughtsmen. In America it is different—there the heads of the firms are thoroughly well trained. He also spoke of the interest he took in the "Sharp" tangent flywheel. Professor R. H. Smith spoke of the interesting fact which Professor Sharp brought to the notice of the meeting, viz., that for equal weight and solid rectangular section wood was stronger than iron or mild steel for beams supported at the ends. He also admired Sharp's tangent spokes for bicycles. Mr. Bateman referred to the natural tendency of the British mind to look upon a man who brings out something new with suspicion, and said that the sooner we got rid of this insular prejudice the better. In America, for example, a man who had anything new was received with open arms, and this accounted for the number of extremely neat and ingenious devices which are so frequently brought out by our American cousins. He said he looked with great interest to the future of the "Sharp" flywheel: it looked like a triumph of brains over brute force. Mr. Brewster asked for the relative cost of wood pulleys and ordinary iron ones. To this question Professor Sharp replied that the prices were practically the same, the steel ones being slightly higher. Mr. Ackermann also referred to the American and German competition and the British prejudice against a thoroughly scientific education, and gave as an instance that in some of the largest manufactories in Germany there were as many as one hundred Doctors of Science on the staff, whereas in Great Britain it was more usual for there to be one Doctor of Science to one hundred manufactories.

Professor Sharp, in his reply, said he did not intend to convey the meaning taken by Mr. Swindley, and that if he had unwittingly used language which might be capable of that interpretation he could only offer his apologies. On this subject at least his opinions were quite orthodox and in agreement with those of the majority of cyclists. He then referred to the experiments on repetition of stress by Wöhler and Bauschinger, and pointed out that in a flywheel where the rim is repeatedly being accelerated and retarded by the arms the frequent reversal of stress on the arms may have an appreciable effect in diminishing the true, as distinguished from the apparent, factor of safety.

#### A REMINISCENCE OF THE ROYAL AGRICULTURAL SOCIETY'S TRIALS.

ON Tuesday and Wednesday of the present week Mr. Justice Lawrance and a common jury were occupied in hearing the action brought by Messrs. Roots & Venables, of Westminster Bridge Road, against the Daimler Motor Co., Ltd., of London and Coventry, with a view to recover damages for injury alleged to be sustained owing to a collision with one of the plaintiffs' vehicles during the carrying out of trial tests promoted by the Royal Agricultural Society of England, owing to the negligence of the driver of a vehicle owned by the defendant company. The defendants denied negligence, and pleaded that the plaintiffs had themselves been guilty of negligence.

Mr. Thomas Terrell, Q.C., and Mr. Montague Shearman appeared for the plaintiffs; Mr. Atherley-Jones, Q.C., and Mr. F. M. Abrahams for the defendants.

It appeared that the plaintiffs were manufacturers of motor-cars and motor-wagonettes, and the defendants were manufacturers of similar vehicles. In June last the Royal Agricultural Society of England organized a show and a series of tests of motor-cars to take place near Birmingham, and the plaintiffs were going to exhibit and compete with a motor-van which they had manufactured for Peek, Frean and Co. The defendants were also going to exhibit some of their motor-cars. A competition was arranged, and was to be decided by a trial along the public road on June 13th. The motor-van which the plaintiffs had manufactured for Peek, Frean & Co., was to run in this trial, and a motor-van of the defendants was to do so also. The defendants had another vehicle, a motor-wagonette, which was not in the competition but was being driven along the road at the time. The defendants' competing van was started and then the plaintiffs' van five minutes later. The latter was proceeding along the road from the direction of Bassett's Pole, when, after they had gone two miles, some member of the party shouted that the defendants' wagonette was overtaking them. Shortly afterwards the wagonette, which was said to be a faster vehicle, came up, and according to the plaintiffs' case ran alongside for 80 or 90 yards "bustling" the plaintiffs' van and forcing it to run on the grass. The driver of the wagonette then tried to pass the van and a collision occurred, the van being thrown into the ditch and its occupants into the hedge. The van was damaged, and it was exhibited at the show as a damaged vehicle. The plaintiffs' van was so badly damaged that it had to be removed on a trolley, and the plaintiffs now sought to recover the cost of repairs and the expenses thrown away in sending to the show a car which, through the negligence of the defendants, they were unable to exhibit properly, and the plaintiffs were debarred from taking part in the trials of these vehicles, thus suffering inconvenience and probable loss. Each party alleged that the accident was caused by negligent driving on the part of the other side. The defendants said that they did not "bustle" the plaintiffs' vehicle, and that they were only alongside for a few seconds. They also alleged that the damages claimed were excessive.

In summing up to the jury, the learned Judge said that he was sorry to

see imported into motor-car cases the same spirit of contradiction that was to be found in all running-down cases. Now they had motor-cars added to the list. It was said on one side that a horn had been blown, but this was absolutely immaterial, and was only introduced in order that it might be contradicted. If any of the jury had ever ridden in a motor-car or an electric cab they would know that it would take a good big horn to be heard. However, the matter was only introduced just as the Irishman trailed the tail of his coat to make people tread on it. He would defy the jury to reconcile all the evidence, and they would have to make up their minds boldly one way or the other. His Lordship then reviewed the evidence, and the jury, after consideration, found a verdict for the plaintiffs for £50.

Judgment was pronounced accordingly.

#### MORE PROSECUTIONS.

GEORGE SKINNER, of 15 Woodville Road, Ealing, was summoned at the Brentford Petty Sessions for having driven a motor-car to the common danger at the Mall, Ealing. Charles Friswell, of 34 Madeley Road, Ealing, and Holborn Viaduct, E.C., was summoned for driving a motor-car furiously. The solicitor who defended elicited the fact that the summonses were both taken out under the Police Act, and the Clerk explained that they were not identical, as it was possible to drive to the common danger without driving furiously. P.C. 506 X said on the evening of the 30th ult. he was at the Feathers Bridge, Ealing, when he saw Mr. Friswell driving a motor-car accompanied by a lady over the bridge and round the Mall at the rate of twelve or thirteen miles an hour. About fifty yards in front was a two-horse van in the middle of the road, and the motor-car passed on the wrong side, causing the horses to shy and bolt. About the same time Mr. Skinner, driving another motor-car, came up at a much slower pace. He also attempted to pass the van on the near side, and the horses of the latter became unmanageable and dashed across the road, with the result that the van collided with a lamp and the driver was thrown on his head and rendered unconscious. Witness took the man into the Feathers public-house and sent for a doctor. Mr. Friswell did not stop, but Mr. Skinner did. Mr. Friswell came back afterwards to look for his friend, and witness told him of the accident. He said he was not to blame, and gave his name and address. To the Bench: There was plenty of room for the motor-cars to pass the van on the off side. Cross-examined: When the first motor-car turned the corner the van was fifty yards ahead, and there was plenty of room for any vehicle to pass it on the proper side. The driver of the van was not drunk. Henry Lacy, the driver of the van, said that the first motor-car passed on the off side, and the other one tried to pass on the near side. He did not succeed, but swung round and passed on the off side. This frightened the horses, with the result stated by the last witness. For the defence it was urged that the drivers of the motor-cars were not to blame, and that but for the accident to the carman nothing would have been heard of it. The Bench considered the case proved, and fined Mr. Friswell 20s. and costs and Mr. Skinner 5s. and costs.

#### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 9.]

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## COMMENTS.



### Motor-Cars in Poland.

MANY attempts have been made to introduce motor-cars into Poland and Lithuania, but they have not been conspicuously successful owing to the bad roads in those parts and also to the unsuitability of the vehicles imported. The endeavour to establish a regular motor-car passenger service from Piotrkoff to Kalisz—a distance of eighty miles—has been suspended in consequence of the German-made cars proving too heavy and having insufficient power for Polish roads. But the British Consul, to whose report we are indebted for this information, believes that the promoters of the enterprise intend to form a new company and order fresh motor-cars from Paris. It is also proposed to commence running a similar service from Wroclawsk to Lipno, in the government of Warsaw, a distance of twenty-four miles. In the neighbourhood of Warsaw several market gardeners are using motor-cars from Dessau in Germany for conveying their own and their neighbours' produce to the market. Our Consul, however, does not write hopefully of their ultimate success, as there is an excellent service of light railways along every high road into the town of Warsaw. Several people have lately bought motor-cars for their own pleasure, and last year one French firm sold nine in Poland; but the only public motor-car in the country that is proving a profitable venture is one owned by the proprietors of a sugar factory in Lublin, which conveys passengers to and from the railway station. Evidently, with suitable cars and with improved roads, the prosperous regions of Poland and Lithuania will deserve considerable attention from makers of serviceable motor-cars for passengers and produce in the near future.

### Motor-Vehicle Services.

ADDITIONAL headway continues to be made in the provision of motor-vehicle services in country districts. Leicester is now provided with a small service, and amongst other places Canterbury has inaugurated its promised service to Herne Bay and back. At present the Herne Bay and Canterbury service is carried out by one car only, but we understand that additional cars will shortly be placed on the road to meet the exigencies of the summer traffic. This enterprise is due to the initiation of Messrs. Livet and Underwood, electrical engineers in Canterbury, and as this road has been served very badly in the past by a two-horsed omnibus, there is every promise of its proving successful, more especially as the horse-drawn vehicle charges the fare of 2s. 6d. for the journey between the two towns. We understand that the motor-car leaves Canterbury each day at 10 a.m. and 3 p.m., returning from Herne Bay at noon and 5 p.m. In connection with these motor-vehicle services, Mr. S. F. Edge writes a letter which we publish in another column drawing attention to the small amount of care displayed in providing for the efficient up-keep of vehicles thus employed. We quite agree with our correspondent in this matter, and have previously emphasized the necessity of

providing efficiently-equipped repair-shops in order that the cars may be kept up to their potential capacity in ordinary service.

### Ready for a Challenge.

MR. GEORGE DRESDEN, the Liverpool agent for the Butler motor-tricycle, is so thoroughly imbued with the capabilities of the machines vended by him that he offers to put his vehicle in competition with that of any other maker both for hill-climbing and speed. He states that he can guarantee these tricycles will travel at speeds up to thirty-seven miles per hour, and in hill-climbing they can beat any competitor. As will doubtless be remembered, these vehicles are fitted with a motor said to develop  $2\frac{1}{4}$  h.p., and Mr. Dresden is so convinced of the good character of the vehicle that, in a letter to us, he offers to lend a machine to anyone. Surely some of the De Dion tricycle riders will be glad enough to accommodate Mr. Dresden with a match.

### Licences for Public Motor-Vehicles.

WE commented in our last issue upon the unfair restrictions laid down by local authorities in regard to the travelling of public motor-vehicles through the streets of the towns under their care. It will be remembered that at Eastbourne a restricted speed of five miles was laid down for these vehicles, whilst horse-drawn vehicles were permitted to proceed at any pace to which it may be possible for the drivers to urge their horses. Mr. Frank Morriss, of King's Lynn, points out, however, that residents of this town are in an even worse position, for warning has been given by the authorities that a speed of four miles per hour must not be exceeded in passing through the town. The question of licensing again presents many unfair features. We have recorded the Lancaster and Morecambe affair, and now another similar case has occurred at Clacton. The Clacton authorities refuse to grant licences to public motor-vehicle services. There was a chance of their reconsidering their decision, but the proprietors of horse-drawn brakes, which would be put under competition with the proposed motor-vehicle services, drew up a petition which has practically destroyed, for the present at least, all chance of the Council granting licences. It is extremely hard that interested parties should have the power to so prevent the inauguration of public motor-vehicle services in districts where it has been proved even under difficult conditions that they are both popular with the public and financially and commercially successful.

### The Mors-Pennington Challenges.

WE publish in this week's issue another of the series of letters on the now complicated Pennington-Mors challenges. Apparently these challenges are equally as unlikely to materialise, as has been the case on many previous occasions. We can, however, see nothing in the letters last published which should prevent some



speedy termination of the last challenge accepted by the Automobile Association. In regard to vehicles accompanying the contestants over the course, we are quite at one with Messrs. Pennington & Baines in the desire that no vehicle other than those competing should be allowed on the course, in order that all chance of impeding the contestants may be avoided. We think the better way for Messrs. Pennington & Baines and the Automobile Association to proceed would be for them each to nominate two persons who should formulate the conditions under which the contest is to be carried out and make all arrangements for its being held under the conditions of the challenge laid down by the one party and accepted by the other. Letters appearing first from one party and then from the other in our columns at intervals of a week will not do much to advance matters, but if the four persons nominated by the two parties to the contests could meet we are quite certain that the whole business would be settled in a few hours in a manner satisfactory to all. The challenge has undoubtedly created a considerable amount of interest, and we should like to see it brought off. We will gladly receive the nominations of Messrs. Pennington & Baines and the Automobile Association, and on receipt of the names will put matters in form for a meeting at an early date to draw up the conditions for the submission and approval of both parties.

#### Motor-Tricycle Seats.

IN reference to the demand for a seat other than a saddle for use on motor-tricycles, the Automobile Association, Ltd., point out that they brought out quite a number of months ago a special saddle-seat for motor-cycles, as illustrated herewith. The seat is very comfortable, and there is a backrest to which pockets are fitted, affording ample room

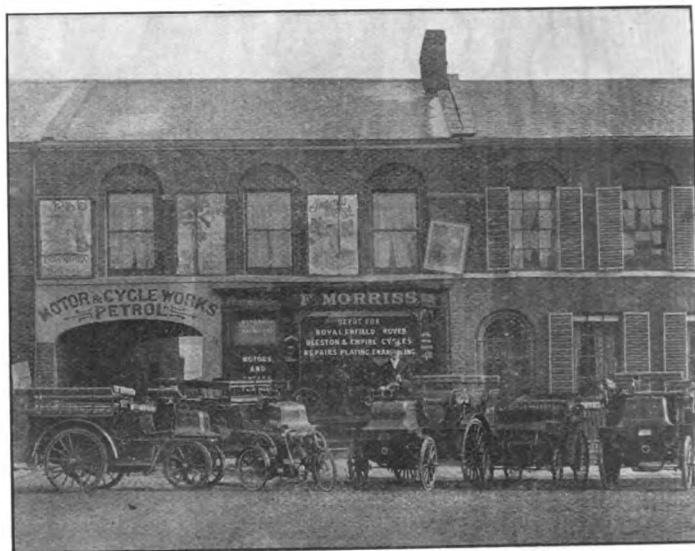


for tools, etc. They are generally supplied together with a pair of footrests which are fitted on the fork, and where the feet, when not required on the pedals, may very conveniently be placed. The whole has been considered a great improvement, and we are informed that they have been used by owners of motor-cycles to their entire satisfaction.

#### A Motor-Car Pioneer in the Eastern Counties.

A CONCERN which is doing good work in advancing the motor-car movement in the eastern counties is that conducted by Mr. Frank Morriss, of London Road, King's Lynn. This gentleman claims to have been the pioneer of motor-vehicles in that part of the country, and is catering for the demand on a large scale, he having secured the district agency for the vehicles of the Motor Manufacturing Co., Ltd., London and Coventry, Beeston motor-tricycles, and the popular Benz cars, while, we understand, he is now taking up the sale of Pennington cars. Mr. Morriss has had to face a good deal of opposition, for in a letter to hand this week he informs us that he has been "warned by

the authorities in this town against exceeding a pace of four miles per hour." Mr. Morriss adds that automobilists in



Eastbourne, for example, have still room to exclaim "Thank heaven, we are not as others!"

SIR DAVID SALOMONS has presented the organizing committee of the Spa automobile meeting, to be held under the auspices of the Belgian Automobile Club, with the sum of £20, to be given as a prize for motor-tricycles.

AT the Wareham Police Court on the 21st ult. Allen Hickman, of Northampton, was fined £1 and 24s. costs for furiously driving a motor-cycle on April 1st. The evidence was to the effect that the defendant was travelling at the rate of eighteen to twenty miles an hour. His defence was that he had ridden thousands of miles without an accident, and that he was only going at ten to eleven miles per hour.

THE Leicester Motor-Car Co., Limited, was registered on April 20th, with a capital of £5,000 in £1 shares, to purchase, sell, let on hire, and otherwise deal with automotor cars, and to carry on the business of cycle and cycle part manufacturers and dealers, motor-car and carriage builders, mechanical engineers, machinists, millwrights, coopers, founders, wire drawers, tube makers, metallurgists, saddlers, enamellers, etc.

A FRENCH motorist, Dr. Callet, gives in a French contemporary statistics of all the expenses connected with keeping a motor-car going for 4,000 miles. The weight of the car was 14 cwt.; it had one cylinder, and worked at 4 h.p. He spent nearly 500 francs for benzine and oil, 250 francs for sabling, 1,000 francs for a driver; he counts nearly 800 francs for wear and tear, and over 1,500 francs for repairs, of which 512 were spent for the car, 92 for the machinery, and 137 for the tires. The costs per mile according to this statistic come to nearly 11d.; but it seems to us that Dr. Callet must have been singularly unfortunate as far as accidents are concerned, his repair account being enormously high.

FROM 1st inst. all bicycles and motor-vehicles in circulation on French territory must be provided with the new official plate showing that the owners of the machines have paid the annual tax. The penalty for non-compliance with the regulation will be a summons and a fine. During the last few days, accordingly, cyclists and motor-car men have flocked first to the Mairie to "declare" their machines, and secondly to the tax-collector's abode to pay their money and get their plates. The impost, of course, has always been obligatory, but fully half the total number of owners of bicycles and motor-cars in France had never paid it until the new law enforcing the "plaque de contrôle" came into force.

# A New Heavy American Electric Motor-Vehicle.



THE PATTON AUTOMOBILE WAGON.

WE illustrate in Figs. 1 and 2 side and front views of a new heavy automobile lorry or van of American origin. These views are interesting for several reasons: in the first place they demonstrate the ideas of American inventors in regard to vehicles of this type, and in the next give English constructors a glimpse of the latest American practice. The car and its motor equipment will also present considerable novelty to British manufacturers, more especially to those who are studying the problem of the moving of heavy loads in automobile vehicles over ordinary roads.

The car is the invention and is built to the designs of Mr. W. H. Patton, of the Patton Motor-Vehicle Company, Chicago, the constructors being the well-known company of electrical engineers, the Fischer Equipment Company, of Chicago and a dozen other addresses, who are also the manufacturers of the Wood's electric motor-vehicle and several other types of "electromobiles," as some of our contemporaries term them. Mr. Patton, the designer, appears to be working on similar lines to Heilmann, for, like the French inventor, he believes in electricity as the actual motive power, but holds that the current shall be generated on the car itself. In fact, Mr. Patton is the Heilmann of America, and has for several years past been employed in

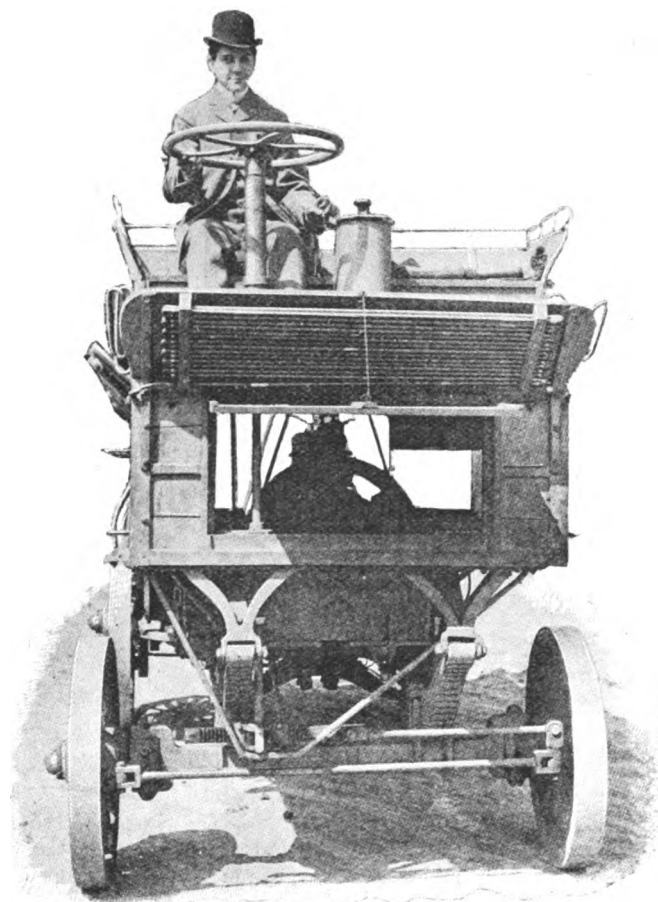
exploiting his system on the railways in the States. He has lately turned his attention to road vehicles, and the car illustrated is one result. Mr. Patton is firmly convinced that each transportation unit, to gain true efficiency, should utilise a combination of gas or petroleum-spirit engine, electric generator, storage battery, and electric motor. To most minds this not only seems a cumbersome method of generating and transmitting power, but to many the losses incontestably incurred in the various conversions from energy to current, from current to battery, from battery to motor, and from motor to road wheels would appear to prohibit any such utilization of an apparently unnecessarily heavy series of "convertors."

Mr. Patton, however, holds that he unites the economy of the impulse engine with a constantly steady average load with the undeniable flexibility of electricity, and further that he secures a satisfactory efficiency, combined with all the advantages of self-contained units. Mr. Patton argues that "the gas engine of itself has not the necessary flexibility of power, and would not work under such conditions with any degree of economy, for it is a well-known fact that these engines must work at about normal load to give good results, and that any great overload is refused by their stopping; and it is also a well-known fact that in overcoming train



inertia nearly twice the power is demanded over that required to maintain ordinary momentum, as it is also a well-known fact that on varying road and load conditions the power demanded of the engine often runs far below its normal capacity. Knowing these facts by actual experience with gas engines, the Patton electric-motor system was designed with the purpose of balancing up the load for the engine so that it might have a constant load factor at all times and under all conditions, and also to reinforce such engine with the necessary flexibility of power."

It will be seen that the vehicle is of very heavy construction, as is indeed necessary in view of its own weight and the load to be carried. The vehicle with its equipment, but without its load, weighs rather more than  $3\frac{1}{2}$  tons, its designed load being 3 tons, which, it is stated, it can handle without difficulty. The wheel gauge is  $5\frac{1}{2}$  ft., and the overall length of the vehicle is 12 ft. Ball-bearings are furnished to all road wheels, and steel tires  $4\frac{1}{2}$  ins. wide are at present



THE PATTON MOTOR-WAGON—END VIEW.

used, although experiments are being conducted with a view to the employment of solid rubber tires. The exceptional strength of the vehicle frame, springs, and all parts of the wagon are fully demonstrated in the illustrations; indeed, the springs on the fore carriage appear to be of the strength customarily found on heavy locomotives.

The prime mover is a three-cylinder vertical petroleum-spirit engine, made by the American Petroleum Motor Company, and this is direct-coupled to an eight-kilowatt, 125 volt, six-pole Crocker-Wheeler dynamo. A view can be obtained of these in Fig. 2, whereby it is seen that this set of generators is placed longitudinally in the vehicle, partly above and partly below the floor of the wagon body, directly below the driver's seat. The driving shaft is carried through the engine, the fly-wheel being placed at one end, and the dynamo at the other; the speed of this set is 500 revolutions per minute. The explosive gases are, of course, fired by electricity, current being taken from the storage batteries,

presently described, to the necessary induction coils. The cooling water for the cylinder walls of the engine is carried in a tank placed in front of the battery tray, and is clearly shown in the middle of the wagon body in Fig. 1. A pump, electrically driven, is employed to circulate this water, which after leaving the cylinder walls is conveyed through the many feet of small copper pipes shown on the top side boards in Fig. 1 and on the face of the foot-board in Fig. 2, thus being effectively cooled in this lengthy passage through these coils open to the air currents generated in the vehicle's moving. The storage for the petroleum spirit is placed under the driving seat; its capacity is fifteen gallons.

The storage batteries are carried in the tray shown in Fig. 1 in the centre, and occupying the full width, of the vehicle body. They are made up of 55 cells of the Willard type, each having a capacity of 120 ampère hours.

Two four-pole electric motors are employed, the rated horse-power of each being  $7\frac{1}{2}$ . These are suspended partly on the rear axle and partly from the wagon body, one motor being connected through double-reduction gearing to each of the rear road wheels.

The controller or commutator switch is of the iron-clad type, and is placed in front of the driving seat, as shown in both illustrations. Three speeds are provided, viz., three, six, and eight miles per hour. A reversing switch is provided on the driving seat. The switch or controller, the dynamo, and the batteries are connected in multiple, the dynamo and engine thus being driven at a nearly constant load, the current generated being split up between the motors and the batteries in accordance with the variation of the demand. When the demand is light the surplus current is taken to the batteries, and when the demand for power is heavy the battery supplements the capacity of the dynamo.

The steering gear, which is plainly seen in Fig. 2, consists of hand wheel mounted on a shaft, a pinion engaging in a rack attached by steering links to the hubs of the front wheels. Two hand brakes are provided, one being placed on each motor-shaft; these, together with the electric brake, are amply sufficient to control the vehicle. The band brakes are worked by foot pedals on the foot board.

The arrangement for starting the petroleum spirit engine is novel and ingenious. The necessary switches, etc., are contained in a box placed under the driving seat at one side. When it is desired to start the engine the switches are operated, with the result that the direct-coupled dynamo then acts as a motor, taking current from the storage batteries, running up the engine until its designed speed is attained, and it runs by its own power. The switch is then pulled over and the conditions reversed, the engine then actuating the dynamo and causing it to become a generator once more.

Although the vehicle has had some considerable service, our American correspondent has been unable to obtain any positive data as to its cost of working, current consumed, etc. No accurate data has been tabulated owing to the varying conditions of road surfaces, pavings, gradients, and loads carried. Certain tests have been carefully made, but the results of these are not yet procurable for publication. It is said, however, that the consumption of spirit per hour is about  $1\frac{1}{4}$  gallons, but this is hardly valuable without additional particulars.

THE Sunderland Motor-Car Co., Ltd., has just been registered with a capital of £10,000 in £10 shares (400 founders'), to acquire and take over as a going concern the business now carried on by Leonard Hodgson at 71 Suffolk Street, Sunderland, and to carry on the business of motor-car proprietors, carriage, cab, omnibus, and wagon proprietors, cycle makers and dealers, engineers, iron and brass founders, wire-drawers, tube makers, fitters, rubber merchants, tire manufacturers, etc. This is the Company that is running the motor-car service in Sunderland at the present time and that intends extending its operations to other districts in the neighbourhood.

## A New Petroleum-Spirit Motor-Vehicle.

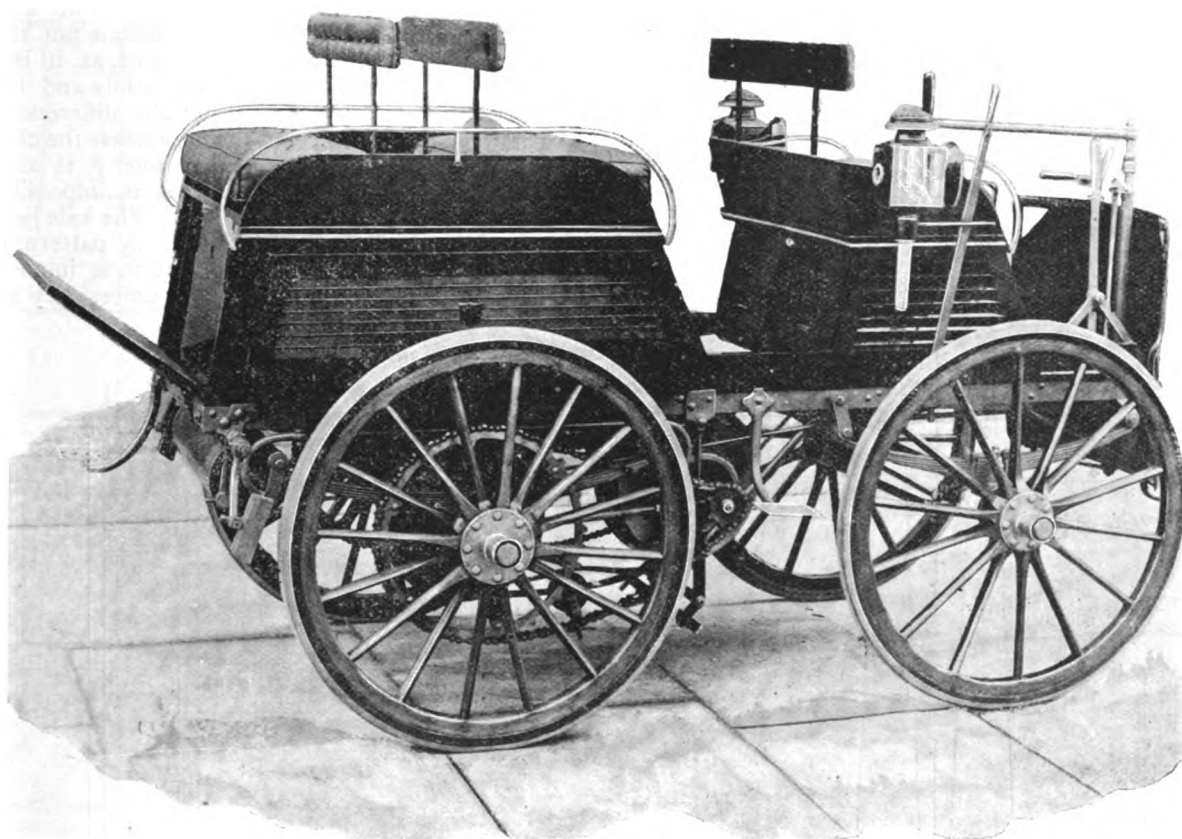


FIG. 1.—THE CROWDEN MOTOR-CAR—SIDE VIEW.

WE illustrate in Figs. 1 and 2 a new petroleum-spirit vehicle recently constructed by Mr. C. T. Crowden, of the Motor Works, Leamington. Details of some parts of the construction are given in Figs. 3, 4 and 5.

It will be seen that the body of the vehicle is of the four-wheeled dog-cart type, having seating accommodation for six persons when carrying a full load, four persons facing the direction of progression and two facing towards the rear. The whole of the controlling and steering apparatus is placed on the right hand of the driver's seat. The motor is of 10 h.p. effective, and is of the twin-cylinder horizontal type. The cylinders are not provided with water-cooling chambers, but the whole of their length is inserted through a large wrought copper tank in such a way that the cylinders are closely in contact with the metal of the tank and consequently completely surrounded by an envelope of water of considerable depth. By this means Mr. Crowden claims to have overcome the difficulties which are so frequently found in regard to the admission of the cooling water to the cylinder chambers by means of an imperfect joint at the cylinder head. The motor is carried at the rear of the vehicle, well off the ground, and above the main frame. The fly-wheel is central with the centre of the car and rotates in the same direction as the vehicle travels—it is claimed that this ensures greater steadiness in running and also contributes to the ease with which the vehicle is steered. The engine is so constructed that, at the desire of the driver, either cylinder can be shut out of action, it being claimed that one cylinder furnishes sufficient power to

propel the vehicle over fair roads at ordinary speeds. Power is transmitted by belts and chain-gear through a differential



FIG. 2.—THREE-QUARTER VIEW OF CROWDEN CAR.

gear shaft to the road wheels. Foreign patents are pending in regard to some of these details, and this precludes us at present from giving further particulars of this mechanism and

some other parts, but we hope to do so shortly. It is claimed that the methods adopted give absolute command of speed without shock or jar and at the same time permit of several variations between the designed speeds. The valves and valve boxes are of very peculiar and ingenious construction,

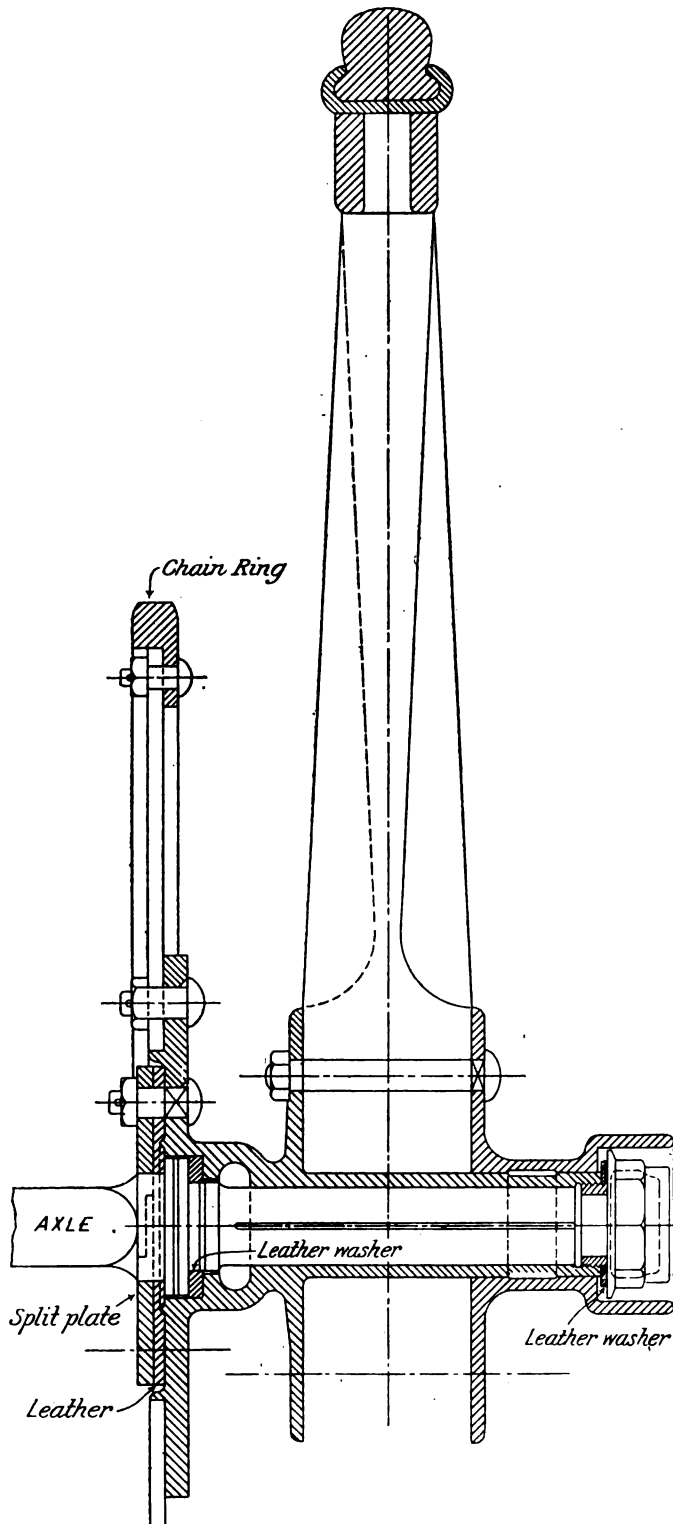


FIG. 3.—SECTIONAL ELEVATION OF CROWDEN WHEEL AND HUB.

the whole of the valve gear being removable and falling into the hand on the loosening of a few nuts, it being possible to change any part, or the whole, within the space of a very few minutes. Electric ignition is employed, current being supplied to the coil from secondary batteries.

The wheels of the car are of peculiar construction—details are given in Fig. 3. They are of the gun-carriage type, the spokes being double dished, as shown, thus providing a wheel which runs as nearly as possible perfectly upright. Increased stability is ensured by the fact that in wheels of this type double the width of stock is obtained. The chain wheels, or sprockets, instead of being bolted to the spokes of the road wheel as is generally the case, are bolted to a flange provided on the wheel hub. By this means it is assured that the hub and chain will always run true with the axle, which is not the case when the sprockets are bolted to the spokes, as it is well known that wood wheels do not run accurately and true owing to the twisting in the spokes and the differences caused by variations of weather. In the case where the chain sprockets are fastened to the hubs in this manner it is also possible to employ a gear case, whereas this is impossible when the sprockets are bolted to the spokes. The axle boxes are made similarly to the long bolted mail-coach pattern, with a plate at the back of the collar, so that it is impossible for the wheels to come away from the axles unless they are absolutely broken up.

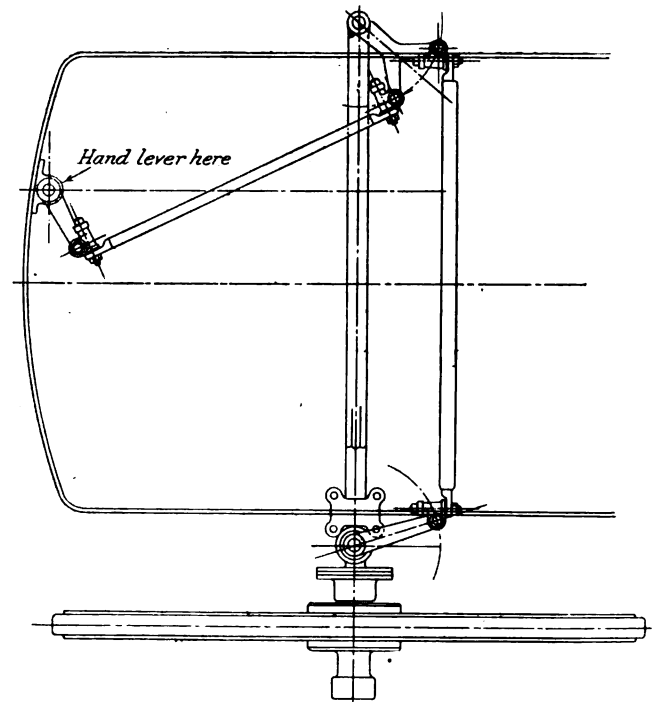


FIG. 4.—PLAN OF STEERING DEVICE.

In the steering mechanism, too, Mr. Crowden has effected improvements. It is the usual custom to actuate the links through a fork, eye and pin, an arrangement which results in very rapid wear on the pins and in the holes, with the result that accidents are liable to happen through the breaking of the worn pins; in wet weather also the lubricant is frequently washed away, and is replaced by gritty mud, causing stiffness in steering. Mr. Crowden's new joint substitutes for this arrangement a weather-proof linkage, of which the lever is provided with a small taper pin. If the motion of the lever is at right-angles, a block is made to correspond, and this is fitted with leather washers and caps in the same way as an ordinary road-wheel axle. This ensures the retention of the lubricant, and prevents it being washed away. Fig. 4 gives a general plan of this steering device, and Fig. 5 illustrates in detail the joint itself. This appears to be an excellent device.

Mr. Crowden by no means restricts himself to the production of petroleum-spirit motor-vehicles, as he has a steam vehicle now on the point of completion, besides several carriages to be fitted with electrical motor and storage



batteries. In fact, Mr. Crowden is evidently making his works a new centre of the industry, having fitted them with

## A SATURDAY'S OUTING.

IT has been remarked that variety is the spice of life, and that if life was all sunshine there would cease to be any pleasure at the presence of King Sol. The Automobile Club as a rule are, or rather have been, fortunate as regards weather in all their outings, and that they were not so fortunate on Saturday—well, those who took part in the run might congratulate themselves the weather was not worse. At all events, the company experienced variety. When the cars failed pedestrianism was resorted to, and, as an alternative, afterwards the locomotive. Five miles of "pad-the-hoof," although the participants were languishing for their mid-day meal, seemed to be thoroughly appreciated, while the three miles walk over fields and down dingles after tea by a party of half a dozen caused the journey home in the carriages of a railway train to be enjoyed. The elements all day were unpropitious, and when the driving rain was not beating in the faces of the party the wind was blowing a furious gale. The roads also were of course extremely heavy, and in some places very greasy.

The following took part in the tour: Right Hon. the Lord Justice Clerk of Scotland, Mr. A. C. Poole, Mr. C. Johnson and Mr. Frentzel in a Mors car; Mr. and Mrs.

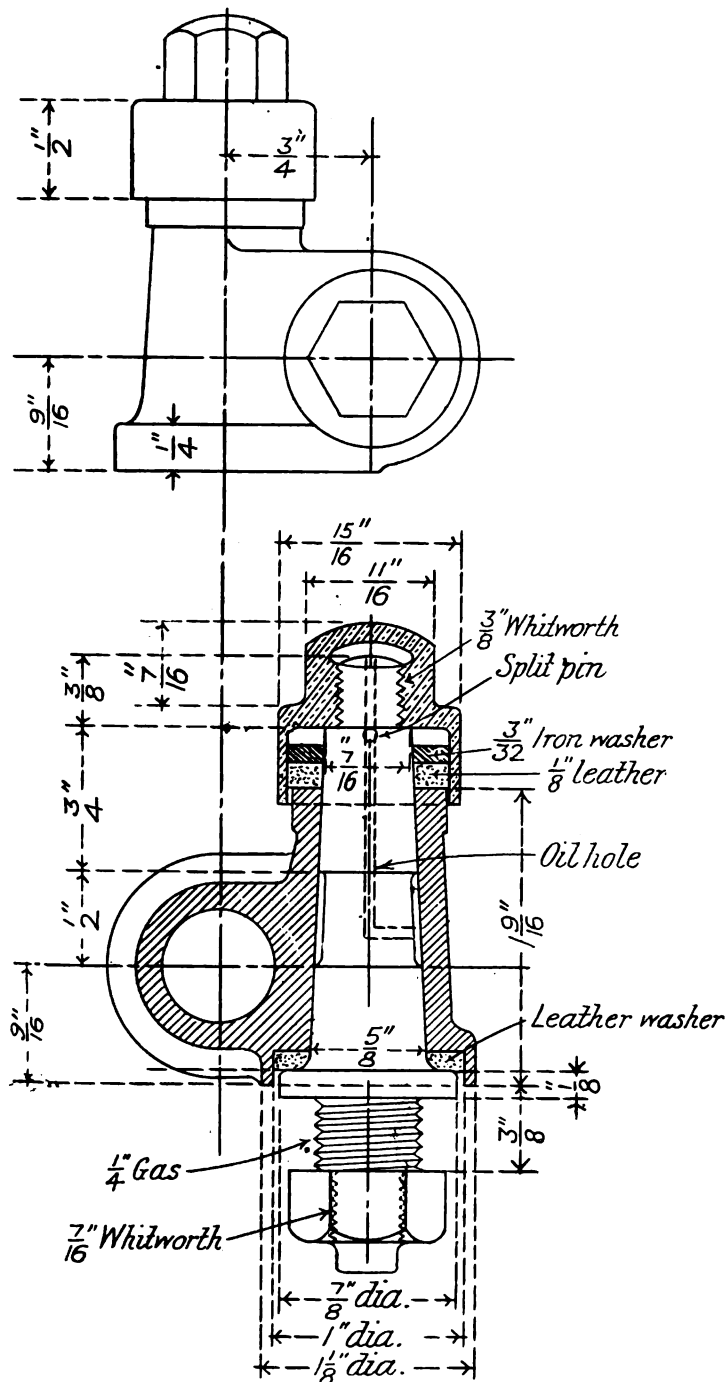


FIG. 5.—DETAILS OF STEERING COUPLE JOINT.

the newest and best machinery, and is prepared to manufacture any type of vehicle which custom or fancy may demand.

We are glad to record that a branch of the Motor-Car Club has been formed in Birmingham. Mr. J. W. Stocks has undertaken the duties of hon. secretary and treasurer, and "application for membership" forms can be obtained from him by sending a post card to "Rottingdean," Alcester Road, Moseley, Birmingham. This extension of the Motor-Car Club's operations to the provinces demonstrates the fact that the parent Club, freed from all restraining influences and connections, is running on the right lines to make headway.



SOME OF THE PARTY AT ST. MARY'S, GODALMING.  
From a Photograph kindly sent by R. W. BUTTEMER, ESQ., B.A.

Hodges, Miss Williams, Mr. W. H. Cox (of Dunkeld), Mr. W. H. Taylor (of Mortimer), Mr. J. Taylor, F.R.G.S., and Mr. Julian (of Teignmouth), London Motor-Van and Wagon Co.'s *char-a-bancs*; Mr. Roger Fuller and Mr. Charles Cordingley, Daimler; Mr. Hewetson and Mrs. Bazalgette, Benz; Mr. and Miss Butler, Benz; Mr. Knight (of Farnham), Benz; Mr. Buttemer (of St. Mary's, Godalming), Benz; a Daimler with a party of four on board; Mr. Edge, on a Phœbus; Mr. Capel and Mr. Phillips, on De Dions. The route sheets drawn up by Mr. Johnson were admirable so far as they went. After leaving Col. Davies' house the instructions were "Then on to Frensham Pond Hotel," and most of us succeeding in reaching there, *via* Farnham, and after travelling the narrowest of country lanes. Several traction-engines were passed, one having two trucks behind, and to pass these required the most skilful care on our part, in one instance the car and traction-engine having to be stopped, so narrow was the way. It was only by very skilful manœuvring and a certain element of risk of slipping into a ditch that the cars could pass. Being Saturday afternoon there were numbers of teams of two and three horses returning from labour in the fields, so that travelling was not of the speediest. The hotel was reached just before 3 o'clock.

After luncheon Mr. Fuller continued his journey to Brighton *via* Hog's Back, Midhurst, Chichester, etc., intending to reach his destination that evening. Barring punctures, this should have been accomplished, as the motor was in splendid

condition, running silently and giving no trouble at any part of the journey. We may mention that Mr. Fuller has pneumatic tires on his front wheels and solids at the rear. A bad puncture of the former delayed the car on its outward journey for a long time. Mr. S. F. Edge played the part of good Samaritan, assisting to remedy matters in the pouring rain. This delay prevented some of the party from accepting the hospitality of Colonel John Davies, A.D.C., at Whitmead. The invitation, however, was freely taken advantage of by others, and much appreciated.

The return journey was commenced about 5 o'clock, and after a short but pleasant stoppage at Mr. Buttemer's picturesque residence for tea, London was duly reached.

## CORRESPONDENCE.

### RESTRICTIONS OF LANGUAGE: "MOTOR WORDS."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am pleased you have set your face against such words as "moto-car," "moto-vehicle," etc., words which will never be heard outside your contemporary's office. "Motor" and "motor-car" have come to stay, and it seems that "car" will be gradually dropped, and that "motor" will be used to imply the whole thing. Dozens of people have enquired: "How are you getting on with the motor?" or "I saw you on the motor yesterday." Again, it seems that the word "motor" would have it thus: "Shall you motor or train it?"; "I shall take the motor." Again, "I motored to Brighton last week."

"Stabling" or "docking" the motor will not go down in this country. My opinion is, it will resolve itself into the use of the word "house," thus: "Where did you house the motor?" "After the motor was housed I went," etc. "House" and "housed" are frequently heard in the above sense at the present day, and they imply exactly what is intended, viz., that the article has been lodged in its house.

Yours faithfully,

April 29th, 1899.

ROBERT CROSS.

### THE CARE OF PUBLIC MOTOR-VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Lately, several people have mentioned to me how the motor industry is being boomed owing to the way local 'bus and *chars-a-bancs* services are now being inaugurated.

Now there is no doubt that no method of popularizing automobilism could be better, but there is one thing that seems to me to be wanting, and that is the certainty of the cars themselves being treated properly.

I have had the opportunity of inspecting some cars which have been in use on one of these services for only a very short time, and a more decrepit collection of things called motor-cars I never saw; and all of it was owing to their bad treatment; not that there was really very much the matter with them, but they looked bad, and they "rattled" when in motion.

One method of treating them that seemed to me entirely wrong was that when they were brought in at night, never mind how dirty they were, they were left in their filthy condition until the next morning, and only cleaned just before going out, the result being that after they were washed there was no time for them to dry properly, and directly they got out, if the roads were dusty, the dust stuck to them, and if they were not dusty, the cars dried in a very dirty looking way.

The steering handles, steering gear, and wheels themselves had a tremendous amount of "shake," so that there was considerable rattle and knock, and generally the cars themselves would do the industry much harm instead of good. I am afraid that many of the companies who are starting so gaily just at the moment will, unless great attention is

given to having proper men to look after the cars and driving, suffer very badly in this direction, and will, besides, do harm to automobilism generally.

The private user, however, is just the opposite as a rule. Everything about his car is well kept and well looked after, and he tries to get the best work possible out of it, with the result that people seeing private cars are fairly well impressed, but seeing public conveyances are rather inclined to be prejudiced against such dirty, rattling vehicles.

London,  
April 27th, 1899.

Yours truly,  
S. F. EDGE.

### EFFECTS OF "JARRING" ON RIDERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Tuke's letter on the effects of "jarring" upon riders is very opportune, as the use of motor-tricycles is so greatly on the increase in England at the present time. It is a complete mystery to me why the most uncomfortable cycle saddle, with its very slight springiness, should be retained on motor-tricycles. With machines in which it is necessary to use muscular force to gain propulsion, it is quite true that the saddle type of seat becomes inevitable, but when muscular force is used only intermittently, as in the case of a motor-tricycle, it appears ridiculous to retain the uncomfortable saddle. More comfort is certainly required than is obtainable from the saddle seat, and, if I may so describe it, the seating accommodation should be more "restful" and afford greater support to the human frame. In the early day of the tricycle, a seat placed on double fore springs was used; why cannot something similar be used with the motor-tricycle? By drawing the attention of manufacturers to this requirement of users of motor-tricycles you will do a great service.

Leicester,  
April 29th, 1899.

Yours faithfully,  
G. H. M. ROLLASON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—About twelve months ago I was laid up for ten weeks from the effects of jarring the nerves of the spine by cycling on an unyielding saddle over the very bumpy roads of North Wales. I have since procured the most springy saddle to be found, and on this can cover moderate distances without bad effects on the same roads. Possibly Mr. Tuke's difficulty may be similarly removed; but, if this should not prove to be the case, let me most strongly advise him to dispose of his tricycle and procure a car that is capable of being properly and efficiently suspended on easy springs.

It is not wise to take liberties with the nerves of the spine.

Beaumaris, Anglesey,  
April 30th, 1899.

Yours, etc.,  
"PETROL."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having read in your last issue an enquiry for a remedy to prevent "jarring" to the spine when riding over lumpy roads, I have much pleasure in giving my experience after riding over 3,500 miles on a motor-tricycle with tube ignition.

During the past twelve months I have had considerable experience with various saddles, having been several long tours over all sorts and conditions of roads, and have found an anatomical pneumatic saddle to suit me the best.

Sheffield,  
May 1st, 1899.

Yours truly,  
ARTHUR J. BLYDE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to Mr. Tuke's letter in your last issue in regard to the effect of "jarring" on riders when using motor-tricycles, I have found from experience that the effect at first is felt very much the next day, inasmuch as it makes one feel extremely tired all over, but that after a little use, evidently,

muscles form which in a sense minimise this jar, so that no ill-effects are noticed.

I myself frequently now take runs of well over a hundred miles and feel no effect whatsoever, whereas I well remember at first fifty miles made me feel extremely tired.

One thing, however, that helps me very much is that I have 2½-in. tires with very thin sides, and I use them fairly soft, the result being that that dead concussion that one gets when using, comparatively speaking, small tyres is almost entirely done away with.

I think, however, nothing but use will really get over the difficulty Mr. Tuke complains of.

Hart Street, W.C.,  
May 3rd, 1899.

Yours truly,  
S. F. EDGE.

#### A DUTCH MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am very pleased to see that in your issue of the 28th inst. you give some attention to motor building in Holland, and have read with some interest on page 127 "A Dutch Motor-Car."

The "Rijwielafabrik Simplex" is well known in Holland for its cycles, but motors and motor-cars are not yet built by this Company.

You write, "The motor and mechanism is on an improved form of the Benz system," and this must give to your readers the idea that all parts of this motor have been built in Holland. The fact is that the motor is a "real Benz motor made in Germany," and that not a single piece of it has been improved or built by the Simplex Company.

Some weeks ago at the Cycle and Motor-Car Exhibition in Amsterdam the Simplex showed a sort of motor-car body, which would probably be in future a delivery van, but it was not finished. The motor to be used in this car will also be a real Benz, "one made in Germany" and not at the Simplex works in Holland.

The Simplex Co. have not, up till now, built a motor, and about that question there was considerable trouble during the said Exhibition between the chief engineer of the Simplex Cycle Works and a first-class cycle and motor repairing firm at Amsterdam. The engineer told everyone that the motor was built at the Simplex works, which he had to contradict some days later on in the *Kampioen*. The Simplex Cycle Works will perhaps have a good future in motor-car building, but then it will be necessary that a better motor than the Benz shall be chosen and used.

To buy motors in Germany and to introduce same as of native make (in Holland there are no patent rights) is not quite fair, and not at all *recht door zee*.

Amsterdam,  
April 29th, 1899.

Yours faithfully,  
W. SCHUTTE.

#### THE N.C.U. AND MOTOR-CAR CONTROL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As having a bearing on the recent correspondence between the National Cyclists' Union and Mr. S. F. Edge, also Mr. C. G. Wridgway, my experience with this body may be interesting. In 1897 I competed against Mr. H. O. Duncan in a motor race, in which the machine ridden by Mr. Duncan was not fitted with pedals for the purpose of physically propelling it in addition to the motor. Mr. Duncan was at one time a professional cyclist, but gave up racing ten years ago, and has since lived in Paris. After this race I applied to the National Cyclists' Union for an amateur licence to enable me to compete in cycle races, but they informed me that I had professionalised myself through competing with a professional in a motor race, and that I should have to apply for a reinstatement. I may say that I did apply, and was reinstated some nine months after. At this time there was nothing whatever in the rules of the N.C.U. concerning

motors or anything pertaining to them, and the Union have only recently passed a rule in which they claim their jurisdiction over motor cyclists.

Now, sir, I ask, Why did the N.C.U. professionalise me if they had no rules dealing with motor-cycles, and, if their rules did cover motor-cycles, why have they since passed a fresh rule to enable them to deal with motor-cycling? I may say that the race I had with Mr. Duncan was entirely a private one, and held on a private track, and was not for any money prize.

The ways of the Union to the ordinary mind were always hard to understand, but lately they have excelled themselves in this particular direction. Anyhow, a little light from one of the superior intellects who do understand and are versed in the laws known unto the N.C.U. on these little points will be appreciated by

London, E.C.,  
May 1st, 1899.

Yours truly,  
CHAS. JARROTT.

#### THE QUALITIES OF THE BENZ CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I cannot understand why so many complaints have been made by purchasers of the Benz car. The following is my experience.

I bought a Benz Ideal in February last, and after two hours' instruction drove the car the following day with two friends about sixty miles without the slightest hitch or difficulty. The car is not used daily—only about twice a week, and generally for long journeys. During Easter I drove the car with two friends, a portmanteau, and a brass container filled with extra petrol from Southsea to Bristol and back. On the return journey we mistook the road twice, once at Westbury and again after leaving Romsey, when we went into Southampton by mistake, thus making the return journey about 100 miles. On this occasion we left Bristol at 6.10 a.m., and arrived at Southsea at 4 p.m. Deducting two hours for stoppages it leaves about eight hours for the 100 miles, which I think good work considering the load.

Altogether I have driven the car over 1,200 miles. As regards repairs the spring of the exhaust valve has broken twice; the cause of this was owing to the spring fitting too tight to the nut on the bottom of the valve spindle. This has been altered, and I do not think it will trouble me again. I have had the spoon brake lengthened with a piece of steel of the same curve as the wheel, and fitting the tire; this is adjustable with four small set bolts, one at each corner of the spoon, and two countersunk bolts through the piece of steel and the spoon. The car is fitted with Connolly tires, which look as good now as they did when the car was new. I have only had to screw up two nuts on the crank shaft bearing. It seems to me that some of those users who grumble have used a file and spanner too often and the oil can not often enough. I quite agree with the user who says that the best made car would be a failure in some men's hands. I notice that one grumbler used vaseline as a lubricant, but this is only fit for a makeshift—it is too soft. Stauffer's lubricant is the best, costing from 6d. to 8d. per lb.; 1 lb. will last for months. I noticed that my car ran much better on some occasions, and a few days ago I saw sparks leaping from the spring which makes the electrical connection across to one of the nuts on the wood adjusting lever. Thinking that the spring was too close to the nut I loosened it and put it further away, and now the car certainly goes much better. I might say that I have not yet adjusted the vibrator or interfered with the sparking plug in any way. The accumulators have been recharged once and the chains taken up twice.

The foregoing is absolutely all that has been done. I am delighted with the machine, and consider the engine an exceedingly simple one and very well made. I am not interested in the sale of the Benz car in any way, and hope that some English firm will be able shortly to make as good a car at the same price or cheaper.

Southsea, April 27th, 1899.

Yours truly,  
J. WHITE.

## ROAD ACCIDENTS BY HORSES AND MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A shocking accident occurred in King's Lynn on Saturday last, resulting in the death of a little mite aged seven, and another little fellow aged two and a half years being run over and seriously injured.

A horse attached to a heavy tumbril from some unexplained reason took fright and bolted. Dashing along a narrow thoroughfare abounding with small children at play, great consternation was caused. According to one eye-witness, a brave woman ran into the roadway and dragged three tiny mites on to the pavement as the mad animal galloped past. At the end of the row it came in contact with the kerb, where the tumbril rebounded on to the two children, who were just leaving or had just left a shop at the corner. The little girl's left thigh was completely severed, and only held together by a piece of skin, whilst the little fellow was badly injured on the head. The mad career of the animal was only checked by one of the wheels coming off the vehicle against a stone bridge.

Now, sir, one can only read or think of such a case with horror, and yet how many of the British public will ever hear of this awful and serious catastrophe—and how many sensational “penny a liners” will even take the trouble to chronicle the same? Whilst expressing extreme sympathy with the parents of the two children, the terrible thought rises in my mind, “If” such a case had occurred with one or another of my faithful and well-beloved motor-cars, what would have been the consequence and public opinion? God forbid that such cases should even appear to occur with more frequency than they do, but if it were possible for the public to see a complete record of the deaths and disablements caused by horses in this country alone in one year and then compare with a similar motor-car record, the fact would be admitted that the latter are at least safe, if not all that the average public desire.

I have wondered whether any distinct case can be quoted of anyone having been run over by a motor-car, in this country especially.

Motor and Cycle Works,      Yours faithfully,  
King's Lynn.                      FRANK MORRISS.

## MORS v. PENNINGTON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—On April 14th Messrs. Pennington & Baines challenged the Mors car for a straightaway run, commencing ten miles south of the summit of Shapfell. They then said, “For this match we will enter our two-cylinder motor-car carrying two passengers—the Mors car to carry the same number; but we are indifferent as to whether their car has a 10-h.p or even a 16-h.p. motor, and has two cylinders or four.” Clearly and distinctly, without using any circumlocution or raising any objections, we accepted.

In reply, Messrs. Pennington & Baines have sent a letter to you in which they again alter the challenge originally issued—firstly trying to restrict us to the use of a four-cylinder Mors, secondly trying to mix up this challenge with a new one they are issuing for tricycles, and lastly objecting to a customer of theirs and of ours following the contest.

The shifting ways of Messrs. Pennington & Baines are wonderful indeed—so wonderful that our patience is exhausted. On April 21st we warned them that their challenge of the 14th was the last one we would accept, and to this decision we shall adhere. If Messrs. Pennington and Baines mean to run the race on the lines laid down by them on April 14th we are still willing to do our part, but we flatly refuse to further lend our name to transatlantic advertising of a firm of whom the world so far has seen nothing beyond—words.

Yours faithfully,  
THE AUTOMOBILE ASSOCIATION, LTD.

## SCOTTISH NOTES.



## Motor Pacing.

ON Saturday last the motor-bicycle was seen in Scotland for the first time as a “pacing” instrument. In spite of the inclement weather some 15,000 people turned out to witness the long programme of cycle and other events at the Celtic Park, Glasgow. It was advertised that Messrs. Chase and Platt-Betts would run off a ten-mile match with “motor pacing.” When the motor-tandems turned out for a trial canter it was evident that the vast crowd assembled were keenly interested in the new machines, and motors were proving an “attraction.” The track was wet from the recent rainfall, and we were doubtful if the “motors” would successfully negotiate the highly-banked corners, especially at a slow speed. Our doubts were confirmed when at the northern corner the first motor had a “spill.” Further trials were confined to the inside flat cinder track, where of course only a moderate pace was obtainable. The result was that the promised match fell through, and the spectators had to be satisfied with merely a motor-car parade on the “cinders.”

## A Stirling-Leyland Bus.

A STEAM omnibus to seat eighteen to twenty passengers, built by Stirling's, of Hamilton, and engined by the Lancashire Steam Motor Company, has this week been going through its preliminary trials, and I learn that it has acquitted itself in the most satisfactory manner. The design of the body is exceedingly graceful and well proportioned. The engine and boiler are placed in a front cabin which is furnished with the driving-seat and all the appointments necessary for the control and management of the bus. The vehicle is roomy inside, well ventilated, and extremely comfortable. The windows, which are large and give a light and airy appearance, are made movable. They are hinged at the top and can be opened or closed as required, or they can in summer be entirely removed from the vehicle. The carriage therefore can be used either as a closed bus or open brake or *char-a-banc*. The bus has been built to the order of the Dundee and District Tramway Company, to whom it will, I understand, be delivered in the course of a week or so.

## Motor Dust-Cart for Glasgow at Last.

FOR several years the Cleansing Department of the City of Glasgow have had under consideration the introduction of motor dust-wagons, and a few months ago I believe invitations were issued to the makers of heavy motor-cars throughout the country to submit tenders for a dust-cart to carry a load of four tons. I understand that the well-known makers of the various steam wagons which took part in the Liverpool trials last year were among those to send in offers. From a minute of the sub-committee submitted to the Council on Monday, it appears that it had been agreed to accept the offer of the Motor-Car Syndicate, Ltd., Glasgow, to provide an electric wagon at the price of £532. It is interesting to note that the Committee have selected an electrically-propelled wagon for their work, and I have little doubt the decision will be received with considerable surprise by many who have been watching the growth of heavy motor traffic. The Lord Provost, I observe, intimated that it was merely an “experiment,” and I am afraid the vehicle to be built must be so regarded. I sincerely trust that the electric wagon when put into the hands of the Corporation will do all that is required of it, as after waiting so long it would be a great disappointment if it failed. It would certainly have been a safer course for the Committee to have selected, to begin with, a vehicle built on a system which had been tried and proved; for example, the Lifu or Leyland steam carts, which have made such satisfactory performances elsewhere.

**The  
Scottish  
Club.**

THE meeting in connection with the formation of a Motor-Car Club for Scotland held on Wednesday was well attended. This gathering was, of course, purely preliminary. The project was fully discussed, and arrangements made whereby another meeting would be held at an early date, at which Mr. Johnson, Secretary of the Automobile Club, would be present. Of this event due notice will be given in these columns.

**Edinburgh  
Again.**

FROM the activity and interest manifested in the Scotch metropolis just now in motor-cars, it would appear that Edinburgh is a splendid field for enterprising people who wish to make money. The tramway service in most places is inadequate and slow, and I understand petitions are being signed in more than one district requesting the concerns now running motor-cars in the principal streets to extend the service to others. The Edinburgh Autocar Company, I believe, have more business offered them just now than they can overtake. There is, I think, a good opening here for introducing motor-buses capable of accommodating fifteen to twenty passengers to suit this traffic.

"BROWN HEATHER."

THE Vienna local authorities have given permission for fifty motor-cabs to ply for hire in the Austrian capital.

THE Val de Travers Asphalte Co., of Bishopsgate Street Without, E.C., are desirous of purchasing one or more wagons to carry three tons, at a speed of five miles per hour. Will makers kindly communicate with them?

AT Kenilworth on Wednesday, Mr. Ambrose Valentine of 4 Heath Terrace, Milverton, was summoned for driving a motor-car at Kenilworth which did not display a red light behind as required. The magistrates imposed a fine of £1, including costs.

THE trustees of the Duke of Bridgewater, who have established a successful dairy business at Eccles and Worsley, are now using motor-cars as vehicles for distributing the milk in the two districts. The sight of these novel milk carts, which are quite artistically furnished, in the streets of Eccles has naturally created no little interest.

DR. COLOHAN, of Blackrock, Co. Dublin, who has undertaken to run his car from Dublin to Galway (135 miles) within a period of twelve hours, is having a special Benz car sent to Dublin to enable him to accomplish this ride. This car, it is rumoured, can take hills 1 in 4. Dr. Colohan is himself very confident of success, and, given that there are not many inclines of 1 in 4, there is no reason why he should not be so.

THE Coventry employés of the Motor Manufacturing Company held a concert at the Coventry Cross Hotel on Friday evening last. The concert was arranged for the purpose of presenting Mr. T. H. Norris, who had been employed during the last two years at the Company's works as a foreman turner, and who is severing his connection with that firm, with a watch as a tribute of his fellow-workmen's good wishes. Mr. W. Tipler presided over a gathering of about eighty, and Mr. E. Preston was in the vice-chair. In making the presentation, Mr. G. Barrett said he was only expressing the feelings of the fellow-workmen when he wished Mr. Norris every success in his future career. He then handed the recipient the watch, which bore the inscription, "Presented to Mr. F. H. Norris, foreman turner, by the employés of the Motor Manufacturing Company, as a mark of esteem towards him on resigning that position.—Coventry, May 1st, 1899." Mr. Norris briefly returned thanks, remarking that the present had come as a complete surprise. The remainder of the evening was devoted to songs, etc.

## H. J. LAWSON'S LATEST MOTOR-BICYCLE.



UNDETERRED by the non-success of a large number of both French and English experimenters, Mr. H. J. Lawson has devoted his energies for some long time past to the production of a satisfactory motor-bicycle. Mr. Lawson seems to attach infinite importance to the solution of this problem, holding that on its being solved there will be a boom in motor-bicycles similar to that lately existing in the palmiest day of the "safety." Many, of course, do not agree with Mr. Lawson, and those who have previously endeavoured to produce a satisfactory motor-bicycle have, in the majority of cases, given up the problem in despair of its being successfully solved.



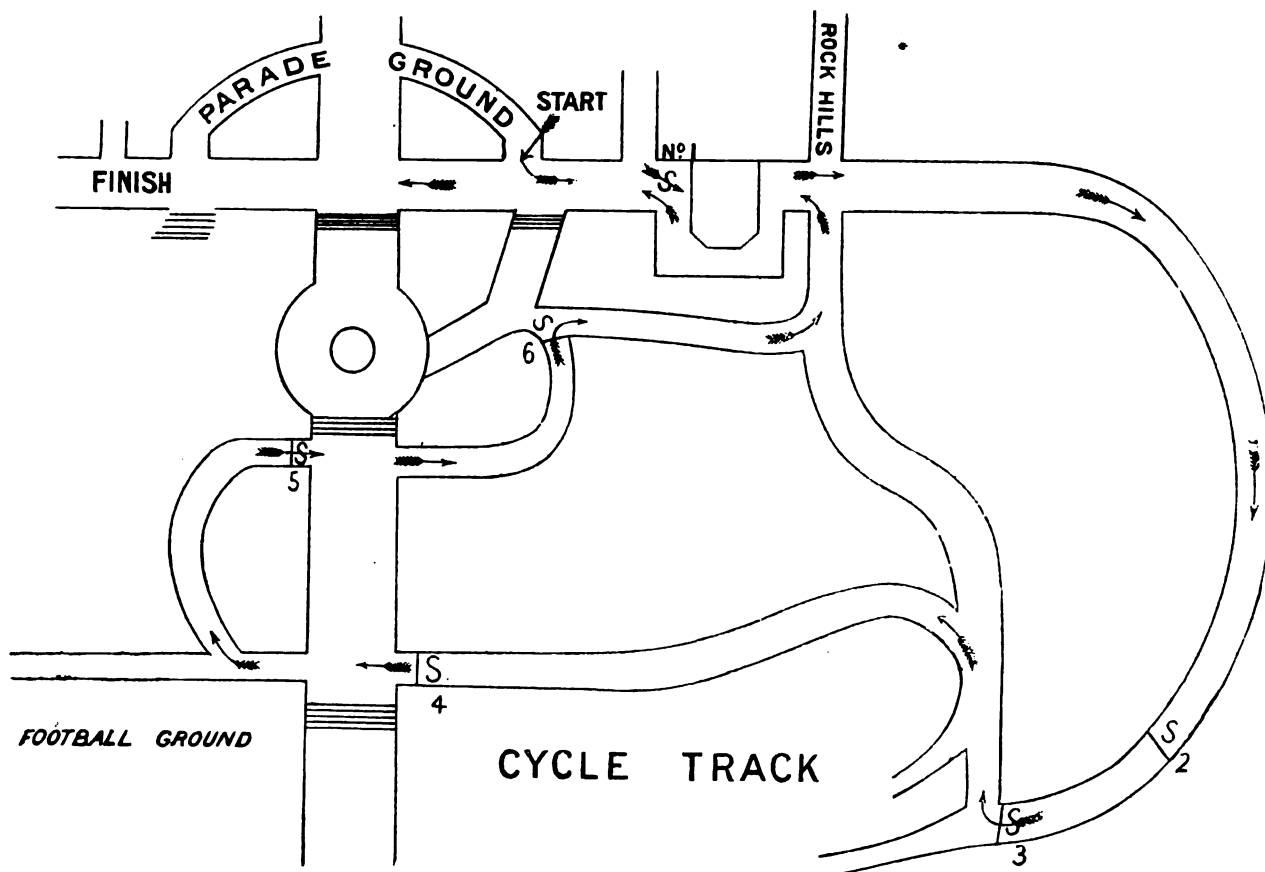
In Mr. Lawson's latest production, the motor, as will be seen from the accompanying illustration, is placed on one side of the back wheel, its fly-wheel balancing it on the other. The motor is stayed by being fixed to two brackets fastened to the back wheel. The crank shaft, of course, passes through the rear wheel, and the speed reduction is attained by means of epicyclic gearing connected up to the inside hub by a clutch. The motor is designed to develop  $1\frac{1}{4}$  h.p., the bore of the cylinder being 4 millimetres and the stroke  $2\frac{1}{4}$  inches. Ignition is by an incandescent tube heated by a burner supplied from an independent tank fitted with a pressure pump. The brakes are powerful and so coupled to the carburetor that at the time of their application the supply of explosive gases is automatically cut off from the motor. The tank carried at the rear of the saddle is oval in shape and fulfils a four-fold purpose. It contains the supply of spirit, a special carburetting chamber, a lubricating oil chamber, and a pressure tank fitted with pump for the supply of spirit to the burner. Speed is regulated by the coupled brake and mixture control device, and also by varying the air supply. By the release of the clutch, controlled by a small screw-handle placed on the head of the machine, it is possible to cut off the power transmission from the bicycle. It then runs without the motor working at all, so that the machine can be pedalled quite easily without having to work against the motor when this is cut out; this device can also be used when coasting, etc.



A DE DION motor-tricycle with trailing car has made its appearance in the Phoenix Park, Dublin, and as this is the first of its kind in Dublin it has caused quite a sensation. The rider was one of Lord Ardilaun's sons, the Hon. R. Guinness, who has also been seen steering a beautiful motor-wagonette carrying six persons through the principal streets in Dublin. Sometimes also he has been seen in difficulties with a Bollée voiturette.



# Motor-Vehicle Contests at the Crystal Palace.



DIAGRAMMATIC VIEW OF COURSE FOR CONTROL CONTESTS.

THE Motor-Car Club's "fête" at the Crystal Palace, Sydenham, on Saturday next promises to be the most important "meet" of motor-vehicles yet held in this country. We are informed that if all the promises are kept there will be considerably over 150 motor-vehicles in attendance, and although all these will not take place in the preliminary "meet" on the Thames Embankment, yet a large number will certainly attend.

The committee, with whom the Crystal Palace authorities are working most heartily, have been eminently successful too in securing entries for the "control contests," no fewer than 63 entries having been received. The classes and entrants are as follows:

Class A.—Motor-tricycles that can be assisted by pedalling; 14 entries, viz.: Rowland Winn, J. W. Stocks, F. F. Wellington, E. Sinclair, H. Clark, Motor Manufacturing Co. (2 entries), R. A. Bauer, C. Rush, C. Jarrott, E. A. Gorton, F. Whittaker, Automobile Association, Ltd., and Hon. C. S. Rolls.

Class B.—Motor-cycles that cannot be assisted by pedalling; 10 entries, viz.: F. Watson, Motor Manufacturing Co. (2 entries), G. Dederich, A. Barker, G. Riches, F. F. Wellington, G. Ibbetson, C. H. Schofield, and C. Jarrott.

Class C.—Light carriages, weighing over 4 cwt. and under 10 cwt.; 11 entries, viz.: Hewetson's, Ltd. (2 entries); G. D. Barnes, G. Dederich, Daimler Motor Co., R. W. Buttemer, C. Rush, J. O. Seyd, M. Cappeleot, Hon. C. S. Rolls, and Automobile Association, Ltd.

Class D.—Motor-carriages, weighing over 10 cwt.; 24 entries, viz.: Hewetson's, Ltd., G. H. Fell, E. Estcourt, C. Machine, S. F. Edge, E. C. Muir, F. F. Wellington, F. H. Butler, E. K. Purchase, Motor Manufacturing Co.

(4 entries), C. Friswell, Daimler Motor Co. (3 entries), G. Soames, C. Parker, H. J. Lawson, E. H. Clift, C. Jarrott, Automobile Association, Ltd., and Hon. C. S. Rolls.

Class E.—Delivery vans under 2 tons tare; 4 entries, viz.: F. F. Wellington, Motor Manufacturing Co. (2 entries), and Ormiston and Glass.

The course, over two miles long, is shown in the accompanying plan. It has been arranged so that all classes of roads, turnings, and ascents and descents are included, and compulsory stopping places are provided in different parts of its length, in order to demonstrate the ability of the drivers to control their vehicles and to bring them to rest and start them again at the word of command.

The entries for the five miles motor-tricycle invitation race are, we are informed, very satisfactory, and the match, over five miles on the track, between such old antagonists as S. F. Edge and C. G. Wridgway, will doubtless be watched with considerable interest by those who appreciate track racing.

It is evident that, given fine weather, the meeting will be an interesting one, and the Motor-Car Club is to be congratulated on the success promised to this its first organized meet since its emancipation from the control of Mr. H. J. Lawson.

A COMPANY under the name of G. F. Smith, Limited, was registered on April 22nd, with a capital of £25,100 in £1 shares, to acquire the business carried on by G. F. Smith at Paragon Ironworks, South Parade, Halifax, and to carry on the business of machine tool makers, ironfounders, engineers, cycle manufacturers and dealers, motor-car builders, brassfounders, etc.

## MOTOR-CARS ON THE CONTINENT.

### Electric Vehicles for the Paris Fire Brigade.

ELECTRIC motor traction has been successfully tried and will shortly be put into use by the Fire Brigade in Paris. A motor-car has been constructed to carry the escape ladders, cords, and other appliances, and eleven passengers. The vehicle is provided with an electric motor, the accumulators being placed underneath the body of the carriage in which stands the fire escape. When put through its trials the new car, fully equipped and conveying the engineer, the brigade officer, his orderly, and eight firemen, behaved very well, keeping up a speed of fifteen miles an hour and negotiating inclines, which in Paris are considerably more steep than in London, without difficulty. It was also ascertained that the vehicle could be brought to a dead stop in a few yards. The new motor-car will be put into use at the headquarters of the Paris Fire Brigade. It is expected that all the stations of the city will be provided with similar vehicles in due course.

### Speed of Motor-Cars in Paris.

THE Paris correspondent of the *Daily Telegraph* remarks that "motor men as a rule no longer rush at full speed through the streets of Paris, for a salutary check has been put on their destructive tendencies by strict police regulations. They are evidently determined to obtain some compensation for this by trying to run down people in the Bois de Boulogne. Some of the avenues in that wood, which, owing to the arrival of fine weather, is now crowded daily, are used by the motor men in quite a proprietorial manner. Horseless vehicles dash along in every direction, heedless of hapless pedestrians, grazing the sides of horses or the legs of the people riding the same, and occasionally coming into collision with a carriage or a cab. The rangers of the Bois maintain that they are powerless to stop the veritable brutes who pound along the leafy avenues utterly careless about grinding the life out of some unlucky man, woman, or child on foot. Bicyclists can easily be called to order, but the motor people are out of sight in a moment, and the rangers pant after them in vain. The Comte de Cossé Brissac, who has witnessed in the Bois some narrow escapes from collisions between motor-cars and persons in the saddle, has written a strong protest to the Prefect of Police. It is possible therefore that efficient measures will soon be taken in order to compel the fast-increasing crowd of motor men to slacken their speed along the avenues of the wood, as well as in the streets, where they are compelled to obey the regulations."

### The Lyons Motor-Car Club.

ON the 29th ult., at 8.30 p.m., a meeting was held at the Café de La Bourse, Lyons, in reference to the foundation of the Lyons Motor Club. At this meeting thirty-eight *chauffeurs* accepted the club rules and became members. They subsequently elected their managing committee. M. Collin has been elected the president for the current year.

### Automobilism at Calais.

THIS year, owing to the generous and energetic impulse of M. Gustave Cordier, who is one of the first *chauffeurs* in Calais, an Automobile Club is to be founded. The committee entrusted with the work of elaborating the regulations of the Club is formed of the most prominent men of the locality, with M. G. Cordier at their head. It is receiving new applications every day, and it is said that already more than one hundred gentlemen have applied to become members of the Automobile Club Calaisien. We learn that the promoters intend to do great things. They

have already secured a large private house, containing salon, smoking and reading rooms, etc., on the first floor, as well as a large hall on the ground floor, where carriages can be placed. We wish the Automobile Club Calaisien every possible success.

### The "Turin Cup."

As previously mentioned, the Italian Automobile Club organized, for the first time this year, a contest called the "Turin Cup." This competition took place on the 1st inst. between Turin (Porte de France) and Bussolino Suse and back. The weather was splendid and the meeting quite fashionable. Gasté gave a brilliant performance, covering the 100 kilometres, over very bad roads, within 2 h. 24 m. 5s., the second competitor being Willaume, and the third, Velox. The cup will remain in the charge of the I.A.C., and inscribed to the effect that Gasté is the champion over 100 kilometres for 1899. A diploma of honour is awarded to the builder of the winner's motor-cycle. Gasté will have the right to the cup if nobody surpasses his record during this year.

### Paris-Bordeaux Race.

THE race between Paris and Bordeaux, through Chartres, Chateaudun, Tours, Poitiers, Angoulême, will be held on May 24th, the course being 565 kilometres long. Seventeen carriages and nine motor-cycles have been already registered, and the contest promises to be very interesting. The race is organized by our contemporary, *Le Velo*, with the support of a few Bordeaux sportsmen. The competitors have to be at Suresnes bridge on the morning of the race at 2 a.m., in order to sign the controlling book. Ten thousand francs will be awarded as prizes to winners, as follows:—In the motor-carriages and voiturette class—first, frs. 4,000; second, frs. 1,500; third, frs. 1,000; fourth, frs. 500; fifth, frs. 300. In the motor-cycle class—first, frs. 1,500; second, frs. 500; third, frs. 300; fourth, frs. 200; fifth, frs. 200. The strict conditions are laid down that prizes to be awarded to motor-carriages and voiturettes will not be, under any circumstances whatever, distributed to motor-cycles should those last arrive before vehicles of the former category. The Bordeaux Organizing Committee has had the good idea on this occasion of opening in Bordeaux a large exhibition of automobiles and cycles. Bordeaux will see, in fact, three races within a few days, viz., the Paris-Bordeaux contest, the Bordeaux-Paris race, and the Bordeaux-Perigueux-Bordeaux race. The exposition will be opened on Friday, May 19th, and be closed on the following Friday, May 26th. It will take place in Les Quinconces Square. It will be certainly both interesting and instructive to be able to examine and compare the different types of the victorious carriages in these three contests. Among the entrants for the Bordeaux-Paris race are Mr. S. F. Edge and Mr. Charles Jarrott, both well-known English motor-cyclists.

### High-Speed Motor-Vehicle Contests.

THE tremendous speed of 65½ miles per hour has been attained last Sunday by M. Jenatzy, the untiring antagonist of the Count de Chasseloup-Loubat. The Count's records were not, in fact, easy to surpass; these were: 38½ seconds for one kilometre, with a flying start, and 48½ for one kilometre with a standing start. Of course, this could not have been done by the aid of any accumulator in the past, but by the improvement in scientific construction Jenatzy has broken these easily. The new champion of electric carriages has covered the first 1,000 metres within 47½ seconds, which is only a little less than Count Loubat. But it is to be noticed that M. Jenatzy starts comparatively slowly, in order that his speed at the finish may be extraordinary, as the last 1,000 metres have been covered within the wonderful time of 34 seconds, which beats every record

of the world for any kind of road locomotion, and gives an average of  $65\frac{1}{2}$  miles per hour! It is really astonishing that such a speed could be obtained. Surely M. Jenatz's performance of rushing through the air with his torpedo-shaped monstrosity, by courtesy termed a carriage, at this enormous speed will be permitted to stand indefinitely without further seeking to break this marvellous record. In spite of uncertain weather there was a crowd who gathered at Achères to assist the spectacle, among these being Baron H. de Rothschild, Messrs. Charron, De Kuyff, De Chasseloup-Loubat, De Santos Dumont, etc. At three p.m. sharp the Jenatz's carriage is in line ready to go. Jenatz is evidently anxious and nervous, but waits the starter's orders with patience. The starter cries, "Beware! be ready . . . and go!" and the "Torpedo" flies between two rows of human beings, who applaud Jenatz's cool skilfulness with all the excitement peculiar to the French nation. A very interesting calculation has been made in regard to this wonderful performance. M. Jenatz drove a carriage mounted upon wheels of 80 centimetres diameter. The wheels had therefore a circumference of 2.50 m., and had to make 400 revolutions in completing the kilometre. Thus the road wheels had to make twelve revolutions per second! Such performances are certainly astonishing, but they are none the less ridiculous and unnecessary.

#### Motor-Car Workmen in Paris.

THE companies formed for the manufacture of motor-cars who have constructed extensive factory buildings in the west of the Paris suburbs, notably at Suresnes, Puteaux, Courbevoie, and Levallois-Perret, are in a curious state of deadlock. The reason is that the skilled mechanic and engineer declines to leave the Ménilmontane quarter where he has been accustomed to reside for generations, and the journey to and from the western suburbs involves too great a loss of time and wages. The consequence is that several of the great motor-car manufacturing houses, among others MM. Clement et Cie, propose to abandon their present factory buildings, constructed at a vast cost, and to remove nearer to where their best workmen live. The pecuniary loss involved by this necessary measure threatens to cause a crisis.

#### New Motor-Car Clubs in Germany.

MOTOR-CAR clubs are beginning to spring up in all the large towns in Germany. One is in course of formation at Stuttgart, to be known as the Wurtemberg Automobile Club, while at Aix-la-Chapelle the West German Automobile Club has just been started, with Herr Küpper as first president. The last-named club has soon got to work, for we learn that it is organizing a race for motor-cars and cycles between Aix-la-Chapelle and Coblenz, a distance of ninety miles, to be run off on Sunday, the 14th inst.

#### The Berlin Motor-Car Exhibition.

IT is announced that the whole of the available space at the International Motor-Car Exhibition, to be held in Berlin this summer under the auspices of the Mid-European Motor-Car Club, has already been applied for. Arrangements have been made with the German Customs authorities providing for the free importation of foreign vehicles intended for the Exhibition.

#### Public Motor-Car Services in Austria.

IT is currently reported that quite a number of applications have been made to local authorities in Austria for permission to start public motor-car services in different parts of the country. Among others, such services are projected between Aspang and Hartberg, between Kernhof and Mariazell, and between Baden and Mödling.

## PETROLEUM MOTOR-VEHICLES.\*

By JAMES D. ROOTS, A.M.I.M.E.



IT is not the intention of the author to touch upon the history of motor-vehicles at the early period when they were exclusively steam driven, nor to deal with their construction at that time. For not only has their history but also their construction been most thoroughly dealt with in various journals and papers since the Locomotives on Highways Act of 1896 came into force. During that early period there can be no doubt that most effective road carriages were built and were in daily operation. It must be remembered, to the credit of the workers in the early stage referred to, that the steam engine itself was in a state of infancy, and that the road locomotive was progressing side by side with its brother, the locomotive of the rail.

If the blindness and unwisdom of the Legislature in conjunction with popular prejudice and unreasoning conservatism, the objection to anything new, had not strangled the infant of the road, it would have been by now as matured and powerful an adult as its brother of the rail, or, to drop metaphor, road locomotion by steam and other sources of power would have been as perfect, as complete, as reliable and as advanced as locomotion by rail. To understand what this would have effected for us in cheapness of locomotion, comfort and convenience of internal communication, we have only to reflect what our condition, and indeed the position of civilisation, would be to-day if rail locomotion had also been hampered and prevented by the unwisdom of our law makers and the prejudice of the public. If we try to realise what the world would be at the present day without rail locomotion, we can then grasp in some measure what a loss there has been to the world and civilisation by the strangulation of road locomotion shortly after its inception and inauguration.

Consider what the position of road locomotion would have been if, as we may fairly assume, the same number of engineers had devoted their time, thought and energy to the improvement of the road locomotive as in each generation since 1830 have employed themselves in the furtherance, improvement and development of locomotion by rail. The high, and in some cases prohibitive, freight charges upon certain railways would now be impossible. The transport of all goods would have been cheaper, thus lessening the cost of country produce and market garden stuffs and other goods to a great extent, especially in large cities. Cheapness of transport will naturally cheapen the cost of all the necessities of life; cheapness of transport by road would have cheapened freight by rail. Moreover, our roads would be better and wider, and would not be allowed to get into the bad condition we now find them in every autumn and winter, and it would be a finable offence on the part of any local authority to put down granite or stones on the roads without immediately rolling them in. It would equally be an offence to allow any road to get below a certain level of standard excellence. Travelling and inspecting surveyors would ere this have been appointed by the local governing body in each county, and if any road should be found by an inspector to be below a predetermined standard of excellence, the local authority in whose district they were should be summoned to answer the charge before the Quarter Sessions. Permitting a bad road should be made a punishable offence, and it will be made so in time.

Between the years 1835 and 1886 various sporadic attempts were made with steam to resuscitate the road motor movement in this country and to reintroduce a motor-vehicle, but being promptly sat upon by the absurd law in force, these attempts never attained maturity; indeed, they were never allowed to get beyond the experimental stage. The progressive movement of road locomotion was, however, born again in countries where the legislative restrictions were

\* A paper read before the Society of Engineers, May 1st, 1899.

fewer than in ours, or were non-existent, and where prejudice was less supreme.

In the year 1885, Daimler, at Cannstadt, Wurtemberg, commenced work upon the problem of road locomotion, and in September of that year he took out in this country a patent for a motor-propelled bicycle. The specification is No. 10,786, September 11th of 1885, and it is entitled "Improved Vehicle propelled by a Gas or Petroleum Motor-Engine." The construction illustrated, as indeed might be expected of one of the pioneer attempts, is very crude. It is like the old bone-shaker with a petroleum motor placed

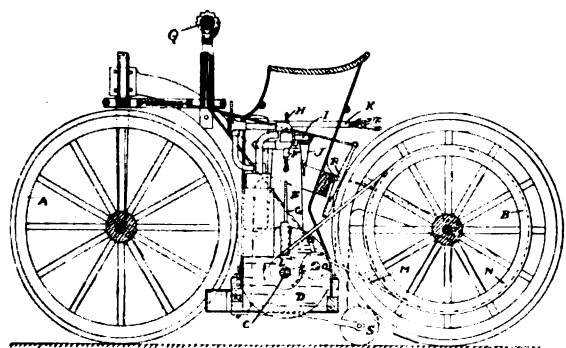


FIG. 1.

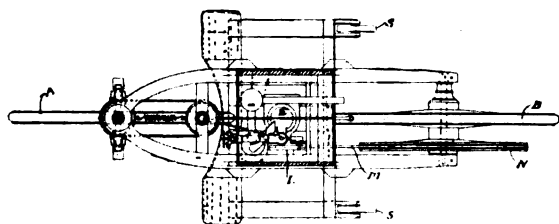


FIG. 2.

between the two wheels, with two small trailing rollers, one each side, to prevent the bicycle falling over when not in motion. Figs. 1 and 2 are reproduced from the specification above referred to. Fig. 1 is an elevation and part section of this machine, and Fig. 2 is the plan.

A is the steering wheel, B is the driving wheel, C is the crank shaft of the motor, D the crank chamber, E the cylinder, F the exhaust valve, operated by the rod G, which makes half as many reciprocations as the crank shaft makes revolutions. H is the admission or inlet valve, I the ignition

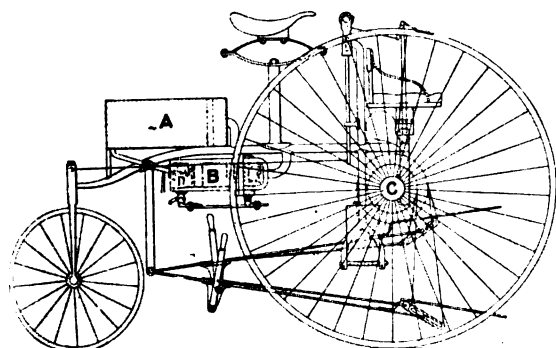


FIG. 3.

tube, J the burner, and K is the outlet of the exhaust pipe which has been passed through the carburettor to raise the temperature. It will be seen that this motor is somewhat similar in arrangement and appearance—except that it has a single cylinder—to the Daimler car motor of the present day.

On the crank shaft C is the pulley L having the endless cord or band M passing round it. This also passes round the pulley N fixed on the driving or back wheel. The grooved jockey pulley O is fitted to the end of a lever, and by

twisting the steering handle Q in one direction and tightening the connecting cord this jockey pulley was raised and the belt tightened, so that the motor drove the driving wheel. If the steering handle was twisted in the opposite direction, the jockey pulley was lowered and the belt slackened, so that the belt ceased to drive. But while the jockey pulley was being slackened, the handle was tightening the continuation of the same cord which is attached to the brake R, thus bringing it into contact with the rim of the driving wheel. The inventor of this machine had the curious idea of warming up the bicycle seat by means of the exhaust gases. The small rollers S were for steadying the vehicle in the vertical position, presumably when stationary, for they would not be of much use when the bicycle was in motion.

There had been one or two specifications filed in the British Patent Office before the date of the Daimler specification relating to petroleum vehicles, mostly for tramways, but the author does not know if these were ever made or tried. Louis Hardaker, of Leeds, also took out a patent for a tricycle propelled by a gas motor. This is probably the

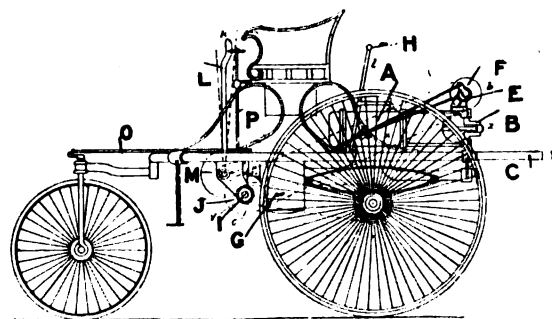


FIG. 4.

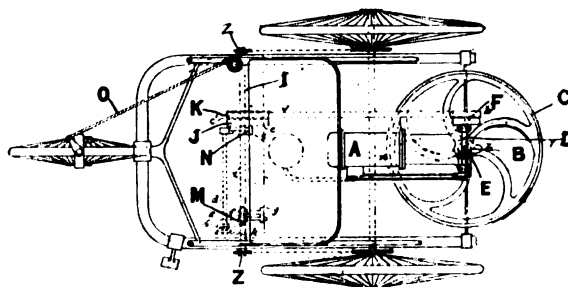


FIG. 5.

first light vehicle of the cycle description propelled by an internal combustion engine. The patent is No. 2,290 of 1880, and dated June 7th. The author has not yet been able to discover whether a tricycle was actually made or not, and has therefore given Daimler the first place.

Fig. 3 shows the Hardaker motor-tricycle. A is a reservoir in which explosive gases are stored under pressure. B is the cylinder in which the charge is exploded, the piston driving by means of a connecting rod (not shown) attached to a crank which forms part of the main axle C. The charge is stated to be fired by electricity, and the motor was clearly intended to be started by means of the pedals. The description is vague, and the author does not think that, as described, it could have been a practical machine. It is, however, interesting as being probably the first internal combustion motor light road vehicle or cycle, but it was intended to use gas as a motive agent.

Except in the cause of Hardaker and for the reasons stated, the author will endeavour to deal with the other vehicles approximately in their chronological order. Carl Benz, of Mannheim, was, the author believes, the next in order of date to attack the problem of petroleum locomotion. Fig. 4 is an elevation and Fig. 5 a plan of a Benz car, as shown in the specification, No. 5,789 of 1886. A is the jacketed cylinder of the motor, B is the crank-shaft placed vertically, C the fly-wheel placed horizontally. The idea of

this arrangement was that a fly-wheel placed in the usual way vertically would by gyrostatic action interfere with the steering of the vehicle. *D* is a counter-shaft driven by the bevel gearing *E*. The shaft *D* carries the pulley *F*, which is fixed on the shaft. *G* is the spirit tank, *H* is a water cooler connected to the jacket, consisting of a series of pipes arranged parallel with the axle, which is not shown in the plan.

*I* is the counter-shaft carrying the pulleys *J* *K*. *J* is a fixed pulley driven by belt on the pulley *F*, and *K* is a loose pulley. *L* is the operating lever which shifts the belt from the fixed to the loose pulley. *M* is the mechanism used for shifting the strap from the fast to the loose pulley. *N* is a brake pulley. *Z* *Z* are the two chain wheels driving by means of the chain and chain wheels on the vehicle back wheels. Differential gear is attached to the shaft *I*. *O* is the steering link connected to the front wheel, and operated by means of the rack and pinion at the foot of the steering-rod *P*.

(To be continued.)

### MOTOR-CARS AND THEIR SPEED.

ARCHIE MILLERSHIP, a respectably dressed young man, of 36 Highfield Road, Birmingham, was summoned at the Bournemouth Petty Sessions for furiously driving a motor-car at Bournemouth on April 9th. Mr. C. J. Lacey defended. P.C. Burgh stated that on Sunday, the 9th ult., at 10.45 a.m., he was on duty at the Lansdowne, when defendant came along from Boscombe with a motor-car in which were two other gentlemen. The car was being driven at a furious rate, from sixteen to twenty miles per hour. He went down the Old Christchurch Road. Witness stepped in front of the car, held up his hand, and shouted for him to stop. Witness could not say whether defendant saw him, but he took no notice, and did not stop. There was a lot of people about the street, as it was just before church time. After the car had passed several complaints were made as to the furious driving. On the following day witness saw defendant at Westbourne, and asked him whether he was aware that he was going at a furious pace on the previous day? Defendant said he was aware he was going at a brisk pace, but did not think it was furious. He said as the accumulators were fixed he did not think he could travel at more than eight miles an hour. Witness told him he should report him for furious driving.

In cross-examination, witness said there were a number of persons crossing the road when the car came along. He did not see any one absolutely in danger, although two gentlemen had to run to get out of the way. Witness was a bicyclist, and could judge of pace.

P.C. Ansell said he was on duty at the Arcade when the motor-car passed, coming from Lansdowne. It was going at a furious pace, and witness shouted to defendant to stop, but he took no notice of the warning. There were a lot of pedestrians about the paths and roads at the time. Witness walked down to Tyrrell's corner, but by that time the car was out of sight. It went past like a flash of lightning. In cross-examination, witness said he did not see any one endangered. Witness was accustomed to horses, and had driven twelve miles in fifty minutes. The car was going a long way faster than a horse travelled.

George Rathew, cab driver, of Wyndham Road, Springbourne, said he saw the car pass through the Lansdowne, and it would have been impossible for them to have pulled up if they had wanted to prevent an accident. He considered it was going at a pace of seventeen or eighteen miles an hour. In reply to Mr. Lacey, witness said he was a cabman, but did not object to motor-cars if they kept their right side and did not go too fast. In this case the car was going faster than any race horse. Mr. Lacey: Come, yours is a good horse. It could have kept up with this?—Witness: Well, you know better than I do.

Mr. Lacey submitted that no person was endangered, nor did defendant risk an accident. He submitted that the car was not travelling at a greater rate than the twelve miles an hour allowed by the Light Locomotive Act, 1896. Defendant was only working on the accumulators, and at a moderate pace, to prevent breaking his chain. He could have pulled up within three yards on the morning in question, owing to the stout brakes.

Thomas Carpenter, commercial traveller for cycles, of Coventry, stated that he knew this car. It could be stopped in three yards, or even in a yard. They could stop "dead" and throw all the passengers off. (Laughter.) On the morning in question he was riding with defendant from Boscombe. At no time was there any danger to foot passengers. They did not see any police officer. They were afraid to use the car at more than a moderate pace—from ten to twelve miles an hour—as they were afraid of an accident to the chain, and they had to ride back to Birmingham, which they did. There was no indicator. The average speed was about ten or twelve miles. It might be five miles going up hill, or greater coming down. The Chairman: You might drive it eighteen miles down hill, I suppose? Witness smiled, and said he supposed so. By Superintendent Foster: The weight of the car was about 19 cwt.

The Chairman said the Bench considered defendant was driving too fast, and there were points about the case which made it rather serious. The practice must be checked, and they hoped that the penalty inflicted would act as a deterrent; if not, they must impose a heavier penalty next time. Defendant would be fined £1, including costs.

### A PROPOSED MOTOR-CAR COMPANY.

BEFORE Mr. Justice Day and a special jury the case was heard, on the 1st inst., of *Cock v. Elieson*. This was an action brought by Mr. John Cock against Mr. C. Prosper Elieson, an electrical engineer, of West Kensington, for specific performance of a contract dated July 30th, 1897. In the alternative plaintiff claimed damages for breach of contract. Mr. Jelf, Q.C., and Mr. D. Stewart Smith were counsel for the plaintiff, while Mr. Carrington represented the defendant. It appeared that the defendant had patented certain improvements in relation to the driving gear and accumulators of motor-cars, and in July, 1897, he entered into an agreement with the plaintiff, who was the nominee of Mr. Martin Fradd, a financial agent, to transfer his patents to a company to be called the Elusin Lamina Accumulator Company, Limited, in consideration of his receiving £100 down, £900 out of the sale of shares, and 10,850 fully paid-up £1 shares in the company, and being appointed managing director of the company for five years at a salary of £600 a year. Plaintiff's case was that after the defendant had received the £100 and his salary at the rate of £600 per annum for something like fifteen months he refused to transfer the patents. Defendant said he had always been ready and willing to carry out his part of the agreement if the plaintiff had performed his by paying him £900 and getting the company to transfer to him 10,850 fully paid-up shares and to appoint him as managing director at a salary of £600. The defendant further said that the company had offered 12,000 shares to the public, but only £10 was subscribed. The jury found a verdict for the plaintiff for specific performance, and also awarded him £50 damages. Judgment accordingly, with costs.

### FAST DRIVING OF A MOTOR-CAR.

At Lancaster on the 29th ult., Arthur K. Haythornthwaite, a music professor, was fined 40s. and costs for driving a motor-car on Caton Road, the Bradford-Morecambe record course, at greater speed than twelve miles an hour, shortly after 1 a.m. Two police-officers timed defendant, who covered a mile in three minutes and twenty-five seconds. Will Brash a local cycling champion, said the speed did not exceed ten miles, and a motor-car engineer corroborated.

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 10.]

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## COMMENTS.



SOMETHING of a sensation was caused at the Crystal Palace last Saturday by the rumour that the Hon. Cecil Rhodes was amongst the visitors, and while the gentleman mistaken for that celebrity was talking to Mr. Cordingley quite a big crowd assembled. There is no doubt Col. Gourrock, for that was the gentleman's name, is a double, both in features, breadth, height, etc., of the better known celebrity, and his riding "get-up" caused the excusable mistake. Col. Gourrock, we believe, was formerly partner with Mr. Edison, and is now connected with the Edison and Swan Company.

### The New Benz 8-h.p. Car.

THE new 8-h.p. car which Hewetsons, Ltd., are placing on the market appears to be a thoroughly satisfactory vehicle in every way. We had the pleasure of journeying on this car from Westminster to the Crystal Palace on Saturday last, and were extremely pleased with its performance. It ran quite silently and at a very high speed, whilst not one of the hills encountered proved any obstacle to the use of top speed. It carried four heavy people with ease, and we are satisfied that it will prove an ideal car for those who desire to travel at a high speed on the level and to have at the same time a strong reserve of power for hill-climbing.

### The Mors-Pennington Challenges.

FROM the correspondence appearing in other columns of this issue it will be apparent that at last there is some appearance of the complicated series of Mors and Pennington challenges being brought to a final conclusion within a reasonable period. From a telegraphic dispatch received from Messrs. Pennington & Baines we learn that they have fallen into line with the Automobile Association, and have accepted the propositions made in our columns last week. It has now been agreed that each party to the challenges shall nominate two gentlemen to act as representatives, who shall formulate the conditions under which the contest shall be run, and make all arrangements for the time at which the event is to take place, and to generally settle the details. We have received from the Automobile Association the names of two gentlemen whom they have asked to act on their behalf, and we now only await their consent to this appointment before arranging a meeting with the two gentlemen whom Messrs. Pennington & Baines are nominating. At their first meeting these four gentlemen will be called upon to jointly nominate a fifth, who shall act as chairman of the control committee and be referee in case of disputed points arising. We fail to see how the contest can be run off in one day. It will be remembered that the course laid down starts ten miles south of the top of Shapfell. The vehicles are to mount this practically continuous gradient twenty-five times, and to do this it will of course be necessary for them to descend at least twenty-four times. Thus the total length of the journey

must be practically 500 miles, and cannot be less than 490. Even if a start be made early in the morning, we do not think it would be possible for the contest to be completed in two days, as the vehicles are not permitted to run down the gradient at a speed greater than that at which they ascend it. And in view of the fact that speed is not likely to exceed a reasonable limit, three days will probably be necessary. All these matters, however, remain to be settled by the nominees of the contestants and the referee. We will take care that our readers are duly acquainted with the progress of arrangements as they are made, and we hope in our next issue to announce the definite date on which the challenges will be fought out.

### "Motor Words."

AN American contemporary offers some suggestions in regard to the creation of an automobile vocabulary which should be of considerable value to those of our contemporaries who desire to lead in this movement. It holds that "automobile" is much too cumbersome for ordinary use in the English language, and suggests that it might be decapitated and curtailed with advantage, so that only "tomo" should remain. We can imagine the surprise of an automobilist when asked whether his "tomo" was in good running order! Elaborating on its ingenious but none the less ridiculous ideas, our American contemporary suggests that a vehicle fitted with an explosion or impulse engine should be termed a "plotomo," presumably tacking on the middle syllable of explosion; that a vehicle propelled by electricity taken from storage batteries should be termed a "batomo"; and that one propelled by steam should take the symbol for water ( $H_2O$ ), and be called a "hotomo." Will these suggestions be adopted by our contemporaries? For our part we shall rigidly eschew their use, and we think the automobile world generally will do likewise.

### Motor-Tricycle Track Racing.

WE are informed by the officials of the Motor-Car Club that they have made arrangements with the Crystal Palace Co. to hold a series of motor-cycle races on the track on Whit Monday. The contests are open to any type of machine of bicycle or tricycle formation fitted with motors, whether pedals are fitted or not, and will comprise the following events: A twenty-mile scratch race for machines capable of running a mile in under two minutes; a ten-mile scratch race for machines not capable of running a mile in two minutes; a one-mile handicap for machines capable of running a mile in under two minutes; and a one-mile handicap for machines not capable of running this distance in two minutes. It is also probable that at least one match will be arranged, as there are several gentlemen who are desirous of cutting down Mr. C. Jarrott's record of Saturday last. Indeed, from all we can hear this will be done without much difficulty, as several new machines specially constructed for the purpose will appear on the track on the next occasion. These contests will be run under the Motor-Car Club's track-racing rules, and will be timed by the Club's official timekeepers.

# Liverpool and New Brighton

## Motor-Vehicle Service.



THE FIRST PUBLIC MOTOR ROAD VEHICLE IN THE LIVERPOOL DISTRICT.

WE illustrate the above vehicle not because it in itself presents any very novel or peculiar features, not for the reason that its passengers are persons of the *haut-ton*, and not for the reason that it has accomplished any very extraordinary task or performance. We give this engraving solely for historical purposes. The first passenger railway in the kingdom was inaugurated in Lancashire, and although that county cannot lay

claim to being the first in which public motor-vehicle services were established, yet it will, at some period of history, be desired to know what type of motor-vehicle was first employed in the Liverpool district for public service. Hence our engraving. This car is one of eight vehicles which are being put upon the road immediately, on routes on the Cheshire side of the Mersey, the car illustrated travelling between New Brighton and Seacombe, making a junction with the ferries from Liverpool. As quickly as they can be completed, other vehicles will be put in service on the Liverpool side of the river, as will also a service of electric cabs on the Oppermann system. On the Cheshire side of the river, the routes selected cover practically the whole of the peninsula, and in addition to including the New Brighton Tower and several well-known hydropathic establishments, services will also be

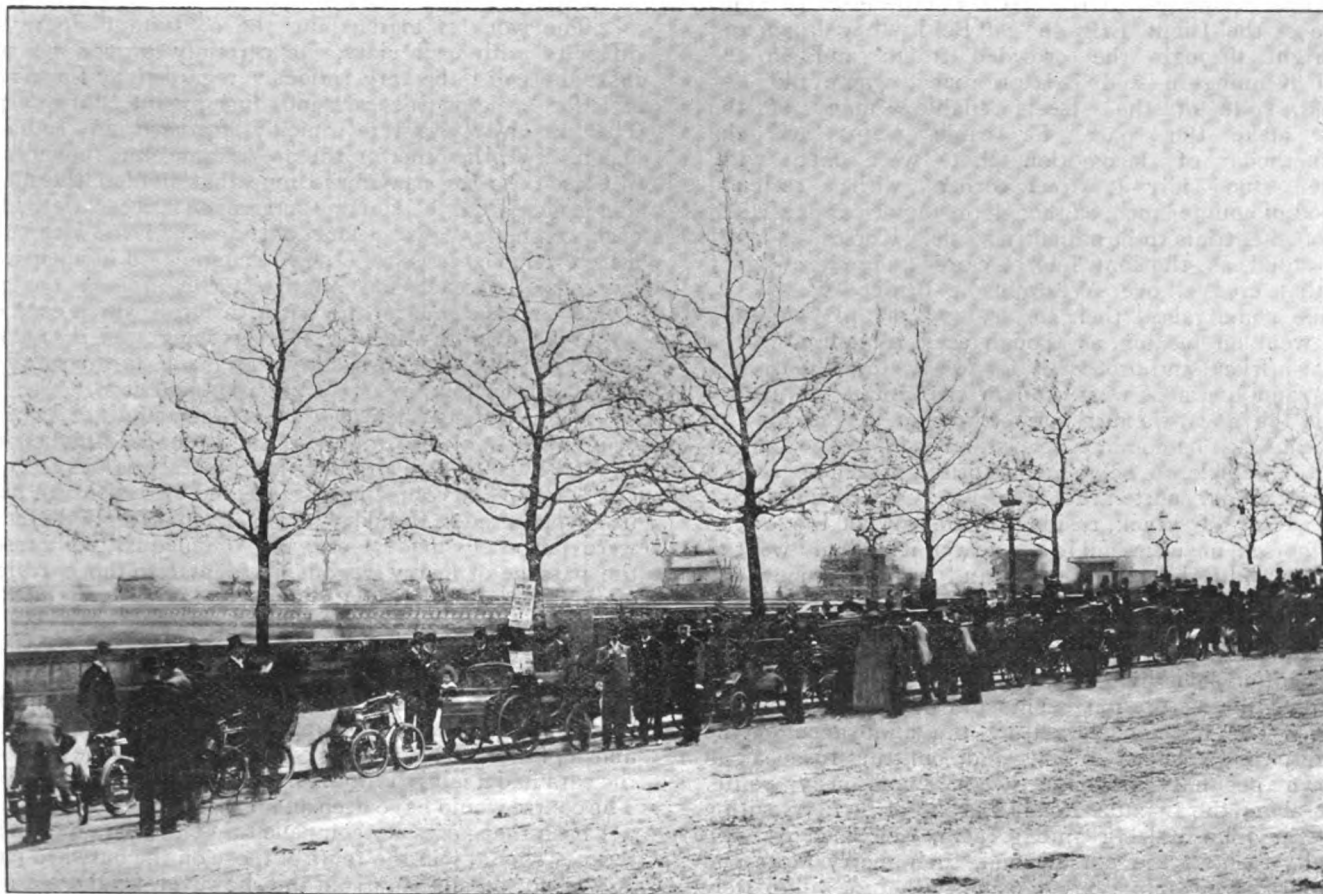
formed between New Brighton and Chester, and to several favorite Dee-side resorts as well.

The constructors of this service of vehicles are the Motor Manufacturing Co., and we wish the syndicate who are controlling these services every success in their endeavour to furnish one of the most important centres in the kingdom with an adequate service of public automobile vehicles.

It was agreed at the Trades' Union Congress, on the motion of Mr. S. Fair, Dundee, seconded by Mr. R. Handy-side, Glasgow, that the Congress should urge upon its delegates the necessity of supporting the United Kingdom Union of Coachmakers in their efforts to supply qualified workmen at the trades union rate of wages in the manufacture of motor-cars or electric tram-cars.

INFORMATION has come to hand this week of the formation of two new German motor-car companies. The first is the "Centaur" Automobilbau Gesellschaft, formed in Berlin with a capital of £5,000 to construct motor-vehicles, while the other is the Allgemeine Betriebs Gesellschaft für Motorfahrzeuge, registered at Cologne with a capital of £30,000. The object of the last-named is to establish motor-car services in different parts of the country.

## Motor-Car Club's Meet.



VIEW ON THE EMBANKMENT, LOOKING WEST.

**A** BRIGHT morning inspired those who motored their way to the Thames Embankment on Saturday with hopes of a fine day and a great success for the meet of the Motor-Car Club. And if the cabmen laughed and bus-drivers jeered, what matter? For with steady constancy from start to finish the clerk of the weather smiled graciously, and the climatic conditions were most favourably inclined for the enjoyment of such a gathering. The

start from Big Ben had been announced for noon, and nearly an hour before the crowd had been assembling to criticise in a general way the vehicles that came whirling alongside the river, until they made a goodly stream, establishing the advent of the motor-car in a most unmistakable way. Mr. H. J. Lawson's Daimler brougham was one of the earliest arrivals, and faced towards Westminster, being rapidly succeeded by several of Messrs. Hewetson's Benz vehicles, in which rode many patrons of the automobile industry. Mr. R. Winn's motor-cycle attracted the attention of the curious, and the Motor Manufacturing Company had five vehicles of the English Panhard type in the display, Messrs. Gretton, Robinson, Buckea, Burgess and Richardson driving. Messrs. E. J. Coles and C. Cordingley were on an 8-h.p. Benz, Mr. E. Estcourt was on a Daimler phaeton, and Mr. Van Toll, Mr. Altree and Mr. Instone drove Daimler Co.'s vehicles. Mr. E. K. Purchase was on a Daimler phaeton, Dr. Lehweß drove a Mors car, and Mr. Frank Morriss of King's Lynn had a large party in his wagonette—the only type of vehicle for the conveyance of passengers that was present. Herr Dederich's tricycle and

trailer afforded considerable scope for the comment of the crowd, as did some of the dozen motor-cycles, including two of the Beeston Co.'s ridden by Messrs. F. Eason and L. Kennedy. Among others who motored to the Palace were Messrs. G. D. Barnes, Buttemer, S. Atkins (Koch), Frentzel, Zacharias (and Mrs. Zacharias), C. Critchley, Mackenzie, Campbell Muir, F. O. Seyd, Capeller, Wridgway, E. A. Bauer, F. F. Wellington (with 3 cars), S. F. Edge, C. Jarrott, C. H. Schofield, J. W. Riches, C. Crowdus, F. D. Butler, C. Friswell, E. H. Clift, and the Hon. C. S. Rolls on his Panhard racing car.

It would be impossible to chronicle all who were present at the Palace, nor even those who took part in the parade on the Embankment, for no sooner did the cars arrive than small groups were formed, passengers from other vehicles turning the event into quite a social gathering, all being so intermixed that anything like a complete census was impossible. And then, when at twenty minutes past twelve the procession moved off those in the fiftieth car saw nearly a score of other vehicles rushing along the Embankment to the urgent promptings of the drivers of horse-drawn vehicles and the plaudits of the spectators.

### THE JOURNEY TO THE PALACE.

A sharp turn to the left brought us on to Westminster Bridge, where we were soon in the midst of a very miscellaneous traffic, the ordinary vehicles being supplemented by the cabs and wagonettes of the thousands who were on their way to the races at Kempton Park, so that for the first twenty minutes of the journey the drivers had a fine exercise, which tested their capacity quite as keenly as the ability of

the cars to mount gradients was tried when nearer the Palace. Some of the complications that ensued were interesting. At one point an omnibus was surrounded with cars—a car in the front of it, another behind it, and one on each side—in a way that would probably have inspired the present Poet Laureate to re-echo his predecessor's famous "Charge of the Light Brigade": "Boldly they drove, and well"—right through the crowded traffic and on the splendid Kennington and Brixton roads, where the less congested state of the streets enabled many of the cars to make the pace for cable trams and the other methods of locomotion that were met with. Policemen stood idly at street corners, with a resigned expression of countenance, as though the motor-car opened up visions of other trials to be patiently borne. Horses remained equally stolid as the long line of cars—there were eighty in all that crossed over Westminster Bridge—passed on, and while some raised their heads, most of those standing at ease went on feeding, as though they recognised in the motor-car a friend and brother likely to save them many long journeys and hours of weary toil in the future. Evidently many of the dogs we met were strangers to the idea of motor locomotion on common roads, and some rushed at the rear of the vehicle, to be much surprised if it happened to emit an unfamiliar snort at that moment. One, an inquisitive collie, renewed the attack, rushing to the front of the car to find the horse; unsuccessful in the search it sullenly went to the kerb to await the next vehicle, and probably renew the investigation.

From windows and pavement we were observed by many inhabitants as we went along, but as the cars reached the Brixton Station something resembling enthusiasm prevailed, large crowds lining the pavements and overflowing into the roadway. The cabmen, forgetting the annoyance of the taximeter, condescended to grin, and, omitting to speak in their own peculiar language, were humorously polite. Further along the Brixton Road, a group of farriers, with a modern Sir John Falstaff among them, welcomed us with invitations to have the horses shod, their merry faces and well-favoured bodies wearing a prosperity that may ultimately wane as the progress of the motor-car continues. If they are wise, they will consider the changing fashion of the time and recognise that in repairing cars and sending motorists on their way renewed may be developed a business likely to vie with the farrier fraternity in its usefulness and profit. So far not a single car had been overtaken, and as we turned to go up the hill on the south side of Streatham Common half a dozen were seen ascending the stiff elevation. They bore the strain well, and, as we followed in easy style, the beautiful view added to the enjoyment of the ride. One car at the bottom, however, required coaxing, and the driver having dismounted and gone to the rear we saw him no more. But there was a suspicion that he was helping his vehicle along and putting his shoulder well to the work. Perhaps he will confess, and then his fame as an imitator of what would have been necessary in the case of a horse-drawn vehicle carrying a similar load will become noised in the motor-car world.

Quite uneventful as had been the first part of the journey, the remainder was similarly unexciting save, of course, for the novelty experienced in the quicker rate of travel with its exhilarating tendency and pleasurable sensations. Our wagonette with its eight passengers—all, save Mr. C. G. Wridgway, men of round proportions and heavy weight—traversed the whole distance with an absence of vibration and an easy running that well established its merits. On nearing the Palace a nasty bit of road was encountered—for a distance of about twenty yards it was being made up; but this caused no delay, and we reached the Crystal Palace in sixty-five minutes from the start. Considering the traffic through which, in the earlier part of the trip, the cars had to be manœuvred, the outing must be regarded as a complete justification of the motor-car—complete in every particular. In speedy transit over variously made-up roads and up stiff and long gradients the

cars did uniformly well, and while each has its own particular merits the general work of some eighty vehicles showed that the day of the motor-car has arrived.

#### STARTING THE CONTESTS.

The work of marshalling the contestants increased in difficulty with each class. It certainly proved no playful task, and had to be very seriously regarded by those responsible for bringing the cars into line for the Starter's pistol. The motor-cycles were quickly arranged in Indian file according to the order on the programme, but the motor-cars in Class C having passed the rope that divided the marshalling ground from the starting point made it necessary to identify each competitor just before starting; and the fact that the fifteen vehicles in Class D were manipulated in such a small space so that each was on the starting-line at the proper moment speaks well for the perfect control which each driver possessed over his vehicle. Everything was in admirable order, and not one false start was made, the cars all commencing their journeys with precision and ease.

The contests themselves were arranged to take place over a course of two miles, in the grounds attached to the Crystal Palace. A diagrammatic outline of this was given in our last issue. The course itself presented every feature likely to be encountered in ordinary tours. In some sections the roads were purposely made loose, and the inequalities caused by the passage of heavy wagons, incidental to the carrying out of the great improvements now in progress by the Crystal Palace Company, were in every case included in the route. The gradients encountered in the course were varied and in some cases severe, whilst ascents and descents were encountered in all parts of the main route. The starting and the finishing points were arranged on the lower main terrace, and as this was beautifully even, although somewhat dusty, the cars had a fair road for starting and concluding their runs. The course would have been an ideal one for the purpose had it not been that necessity compelled that the cars on the return journey should join the route of those on the outward journey. It was not possible to avoid this, however, for the reason that there is only one carriage road entrance on to the lower terrace. As a result it became necessary to have a "control station" or "special stop" close to the point of junction. Here the outgoing vehicles were detained until the course was clear of cars, the time of detention being taken and deducted from the recorded results of the timekeepers at the starting and judging points. In addition to this "special stop," five other stopping places were arranged at different points on the course. The contests were designated as "control competitions," and these stopping places were in some cases arranged at spots that made it a necessity that the cars should be kept well in hand. The turns in the course, too, embraced some very awkward "V" turns, the cars having practically to turn back in their own course. The conditions laid down were onerous, but certainly not impossible of fulfilment. Stopping places were defined by white flags placed exactly twenty feet apart, and the cars had to be brought completely to rest within the limits of this space without any preliminary stop and without backing. Drivers who failed to fulfil this condition were disqualified, it being essential that no part of the car should project beyond the flag posts either in a forward or rearward direction. Cars stopping at any other point of the course were disqualified, as were also those from which a passenger alighted during the continuance of the trial.

The entries received in each class were far beyond the number expected by those responsible for organizing the contests. It was imagined that entries would be restricted to members of the Club and their immediate friends, but that this was not the case is proved by the list published in our issue of last week. So numerous were the entries that in several classes members of the committee entrusted with the control of these tests refrained from starting their vehicles, in order that the programme might be brought to a conclusion in a reasonable time.



VIEW ON THE EMBANKMENT, LOOKING EAST.

The actual starters in the various classes were as follows:—

Class A, motor-tricycles assisted by pedals: No. 27, Motor Manufacturing Co.; No. 31, R. A. Bauer; No. 8, Rowland Winn; No. 17, Ernest Sinclair; No. 14, F. F. Wellington; and No. 54, C. Jarrott.

Class B, motor-tricycles unassisted by pedals: No. 33, W. Dederich; No. 49, Southern Motor-Car Co.; No. 47, A. Barker; and No. 9, F. Watson.

Class C, light motor-cars exceeding 4 cwt., and not exceeding 10 cwt. in weight: No. 42, the Daimler Motor Co.; No. 46, R. W. Buttemer; No. 3, Hewetson's, Ltd.; No. 4, Hewetson's, Ltd.; No. 68, Automobile Association, Ltd.; and No. 5, G. D. Barnes.

Class D, heavy motor-cars weighing over 10 cwt.: No. 15, Hon. C. S. Rolls; No. 67, Automobile Association, Ltd.; No. 32, C. Friswell; No. 21, F. W. Butler; No. 2, Hewetson's, Ltd.; No. 52, Harry J. Lawson; No. 31, Motor Manufacturing Co., Ltd.; No. 39, Motor Manufacturing Co., Ltd.; No. 43, Daimler Motor Co., Ltd.; No. 41, Daimler Motor Co., Ltd.; No. 22, E. K. Purchase; No. 48, Charles Parker; No. 19, F. F. Wellington; No. 7, Ernest Estcourt; No. 63, Daimler Motor Co., Ltd.; and No. 18, E. Campbell Muir.

Class E, motor delivery vans: No. 37, Motor Manufacturing Co., Ltd.; No. 44, Ormiston & Glass; and No. 13, F. F. Wellington.

There were very many disqualifications in all classes, and although several protests were lodged, and the protesting parties were permitted a second run over the course, the Marshals were able in every instance to bring sufficient evidence to prove that the disqualifications were correct. The second runs of some of the vehicles were interesting in several ways. In Class B, No. 47 was permitted a second run on a protest, but his net time at the finishing point was in excess of the "reasonable time" laid down by the Handicapping Committee for covering the course. In this case the limit time of thirteen minutes was exceeded by a few

seconds, and we are informed that, this being the case, no second award was made in this class. In Class C one vehicle was disqualified by the Marshals for not coming to a complete rest before starting off again, and one of the riders also alighted to argue the matter; therefore, this car was doubly disqualified, as it did not carry its complete load over the whole course. In this class, also, two competitors failed to bring their vehicles to the starting point at the time allotted for carrying out the tests of vehicles of this class. On lodging a complaint that they were not aware of the rule necessitating the vehicles being brought forward at the allotted time, they were both permitted to run over the course at the termination of another class. On investigation of the matter, however, we are informed that the Handicapping Committee decided that no excuse could be accepted for non-adherence to this cardinal rule of all sporting events; and reports were in addition brought forward by the Marshals which further supported the Committee in their decision to request the Judges to allot the prizes to the vehicle running in its proper turn which had been found to cover the course in the best time.

In Class D two vehicles were permitted, on protesting against previous disqualification, to run over the course a second time. On this second run one vehicle was again disqualified, and not only refused to permit the Marshals to remove the official number from the car as a mark of disqualification, but nearly ran over one of the Marshals who endeavoured to fulfil his duties. In the case of the other vehicle, the committee found that the previous disqualification was justified, so that its second run was disregarded. We are informed that in no case could this car have taken an award, as its time was much too slow as compared with many other competitors.

In Class E one vehicle lodged a protest against disqualification, and on investigation the protest was upheld.

In Class D the Crystal Palace Company offered awards for the best net times over the course, but the Handicap



Committee felt that, in view of the varying horse-power of the cars entered and the varying weight of the vehicles, as well as that of the load carried, it would be advisable to handicap the cars in this class. On consideration, however, it was thought that as the entries had been made without any notification of a handicap, it would be unfair to the competitors to make the awards on a handicap basis. The awards were therefore made on the lines laid down by the Crystal Palace Company, for whom the Handicap and Control Committee acted. The Handicap Committee, however, formed a handicap of the cars entering, and the Crystal Palace Company were so interested in the result that they decided to give an extra silver medal to the winner of the handicap.

We have been furnished with the following table shewing in detail the results in each class:—

| Class     | No. | Time at Start. | Time at Finish.    | Gross Time.         | 1st Stop Detention Time Allowance. | Handicap Allowance. | Net Time.            | Name of Entrant. | Award.       |
|-----------|-----|----------------|--------------------|---------------------|------------------------------------|---------------------|----------------------|------------------|--------------|
|           |     | h. m. h. m. s. | m. s.              | m. s.               | m. s.                              | m. s.               | m. s.                |                  |              |
| A.        | 54  | 2.44           | 2.49.26            | 5.26                | 10 $\frac{1}{2}$                   | 5.15 $\frac{1}{2}$  | Charles Jarrott      | Gold Medal       |              |
| A.        | 27  | 2.38           | 2.44.47            | 6.47                | nil                                | 6.47                | Motor Man. Co., Ltd. | Silvr. Medal     |              |
| B.        | 49  | 2.54.3         | 5.58 $\frac{1}{2}$ | 11.58 $\frac{1}{2}$ | nil                                | 11.58 $\frac{1}{2}$ | Sth. Motor-Car Co.   | Gold Medal       |              |
| C.        | 53  | 3.10           | 3.19.51            | 9.51                | 1.28 $\frac{1}{2}$                 | 8.22 $\frac{1}{2}$  | G. D. Barnes         | Gold Medal       |              |
| C.        | 33  | 3.6            | 3.14.34            | 8.34                | nil                                | 8.34                | Hewetson's, Ltd.     | Silvr. Medal     |              |
| D.        | 32  | 3.37           | 3.43.32            | 6.32                | nil                                | 6.32                | Charles Friswell     | Gold Medal       |              |
| D.        | 2   | 3.45           | 3.52.0             | 7.0                 | nil                                | 7.0                 | Hewetson's, Ltd.     | Silvr. Medal     |              |
| D.        | 21  | 3.40           | 3.48.8             | 8.8                 | nil                                | 8.8                 | F. W. Butler         |                  |              |
| D.        | 31  | 3.53           | 4.2.22             | 9.22                | nil                                | 9.22                | Motor Man. Co., Ltd. |                  |              |
| D.        | 39  | 3.57           | 4.10.49            | 13.49               | 5                                  | 13.44               | Motor Man. Co., Ltd. |                  |              |
| D.        | 22  | 4.11           | 4.20.33            | 9.33                | nil                                | 9.33                | E. K. Purchase       |                  |              |
| D.        | 19  | 4.18           | 4.29.52            | 11.52               | nil                                | 11.52               | F. F. Wellington     |                  |              |
| D.        | 63  | 4.24           | 4.33.45            | 9.45                | nil                                | 9.45                | Dmr. Motor Co., Ltd. |                  |              |
| D.        | 18  | 4.28           | 4.37.59            | 9.59                | 1.33 $\frac{1}{2}$                 | 8.25 $\frac{1}{2}$  | E. Campbell Muir     |                  |              |
| Handicap. |     |                |                    |                     |                                    |                     |                      |                  |              |
| D.        | 18  | 4.28           | 4.37.59            | 9.59                | 1.33 $\frac{1}{2}$                 | 2.45                | 5.40 $\frac{1}{2}$   | E. Campbell Muir | Silvr. Medal |
| D.        | 32  | 3.37           | 3.43.32            | 6.32                | nil                                | 45                  | 5.47                 | C. Friswell      |              |
| D.        | 21  | 3.40           | 3.48.8             | 8.8                 | nil                                | 2.0                 | 6.8                  | F. W. Butler     |              |
| E.        | 44  | 4.41           | 4.51.5             | 10.5                | nil                                | 10.5                | Ormiston & Glass     | Gold Medal       |              |
| E.        | 13  | 4.43           | 4.55.28            | 12.28               | 29 $\frac{1}{2}$                   | 11.58 $\frac{1}{2}$ | F. F. Wellington     | Silvr. Medal     |              |

The principle adopted by the Handicapping Committee in Class D was to take the highest horse-power car with the lightest tare weight and weight of load, and to place this at scratch. They next decided that the limit of the handicap should be five minutes. The weights of the cars as declared by the contestants and the weight of the load to be carried were then added together and the result divided by the horse-power. The resulting ratios were tabulated, the limit vehicle found, and the maximum allowance made thereto. As the total load propelled in relation to horse-power diminished, so the time given was reduced until the scratch vehicle was reached with the highest horse-power and the lightest total weight. From an examination of the whole of the results in Class D it appears that the handicap was a very satisfactory one.

#### THE TRACK CONTESTS.

At the conclusion of the control contests the greater number of the cars on the ground proceeded to the cycle track to view the five-miles invitation scratch race and the Edge-Wridgway match over a similar distance.

The entrants for the invitation race were as follows:—C. Jarrott, E. A. Gorton, C. G. Wridgway, Hon. C. S. Rolls, S. F. Edge, W. F. Hicks, G. Whitaker, J. W. Stocks, H. E. Zacharias (nominee), J. Buck, and Morgan Donne.

The starters were C. Jarrott, C. G. Wridgway, J. W. Stocks, and H. E. Zacharias' nominee, C. Jarrott riding a high-gear 1 $\frac{1}{2}$ -h.p. De Dion tricycle of French manufacture, C. G. Wridgway a Phœbus tricycle made by Noé Boyer and Co., of Paris, and fitted with an Aster motor, J. W. Stocks an Ariel motor tricycle, and H. E. Zacharias' nominee a Barrière motor-tricycle. A capital start was effected, Wridgway getting away first. He was, however, soon overhauled by Jarrott, who took the lead in the first turn on meeting the banking, and adhered to it throughout the contest.

The race practically settled down to a match between Jarrott and Wridgway, Stocks and Zacharias' nominee being lapped before two miles had been run, and being over a mile behind at the conclusion.

The pace of the leaders was terrific, and it soon became apparent that the English record would be pulled down very considerably. Notwithstanding constant efforts on Wridgway's part, he failed to obtain the lead, and after a really magnificent struggle, Jarrott eventually won in the record time of 8 minutes 22 $\frac{3}{5}$  seconds, Wridgway being four yards behind, easing up. This record is from a standing start, that from the flying start being 8 minutes 14 $\frac{2}{5}$  seconds. The previous best public time in England was just inside 10 minutes on the Crystal Palace track on Easter Monday last in the Wridgway and Rigal match. In a private trial, however, Wridgway accomplished the distance in 8 minutes 41 $\frac{2}{5}$  seconds. Records are claimed by Jarrott for the lap, flying quarter-mile, flying mile, and the flying and standing mile, two miles, three miles, four miles and five miles.

The following are Jarrott's times:—

| Lap. | Time.              | Time per Lap.    | Time per Mile.     |
|------|--------------------|------------------|--------------------|
|      | min. sec.          | sec.             | min. sec.          |
| 1    | 44 $\frac{4}{5}$   | 44 $\frac{4}{5}$ |                    |
| 2    | 1.16 $\frac{2}{5}$ | 31 $\frac{3}{5}$ |                    |
| 3    | 1.49 $\frac{4}{5}$ | 33 $\frac{2}{5}$ | 1.49 $\frac{1}{5}$ |
| 4    | 2.20 $\frac{1}{5}$ | 30 $\frac{2}{5}$ |                    |
| 5    | 2.53 $\frac{4}{5}$ | 33 $\frac{3}{5}$ |                    |
| 6    | 3.25               | 31 $\frac{1}{5}$ | 1.35 $\frac{1}{5}$ |
| 7    | 3.57 $\frac{1}{5}$ | 32 $\frac{1}{5}$ |                    |
| 8    | 4.30               | 32 $\frac{2}{5}$ |                    |
| 9    | 5.3 $\frac{2}{5}$  | 33 $\frac{2}{5}$ | 1.38 $\frac{2}{5}$ |
| 10   | 5.36 $\frac{1}{5}$ | 32 $\frac{4}{5}$ |                    |
| 11   | 6.10               | 33 $\frac{4}{5}$ |                    |
| 12   | 6.42 $\frac{4}{5}$ | 32 $\frac{4}{5}$ | 1.39 $\frac{2}{5}$ |
| 13   | 7.15               | 32 $\frac{1}{5}$ |                    |
| 14   | 7.49 $\frac{1}{5}$ | 34 $\frac{5}{5}$ |                    |
| 15   | 8.22 $\frac{3}{5}$ | 33 $\frac{5}{5}$ | 1.39 $\frac{1}{5}$ |

| Two Miles.         | Three Miles.       | Four Miles.        |
|--------------------|--------------------|--------------------|
| min. sec.          | min. sec.          | min. sec.          |
| 3.25               | 5.3 $\frac{2}{5}$  | 6.42 $\frac{4}{5}$ |
| 3.13 $\frac{3}{5}$ | 4.53               | 6.32 $\frac{4}{5}$ |
| 3.17 $\frac{4}{5}$ | 4.57 $\frac{3}{5}$ |                    |
| 3.19 $\frac{1}{5}$ |                    |                    |

The programme of contests was completed by the five-miles match between S. F. Edge and C. G. Wridgway. Edge rode a De Dion high-gear 1 $\frac{1}{2}$ -h.p. machine, and Wridgway the same machine as in the previous contest. Unfortunately, trouble with the quality of the petrol, and also some in regard to the sparking plug, caused Wridgway's machine to become unreliable, and although three attempts were made Wridgway only rode a short distance before he had to retire, Edge finishing alone in 8 minutes 28 seconds.

The Control Committee having the arrangements in hand and acting on behalf of the Crystal Palace Company and the Motor-Car Club were Messrs. S. F. Edge, C. Jarrott, W. Munn, A. MacCormack, P. Richardson, C. H. Schofield (*Motor-Car Journal*), B. C. Wotton, and F. F. Wellington, Mr. F. W. Bailly (hon. superintendent of the Crystal Palace cycle track and hon. secretary of the Motor-Car Club) acting as hon. secretary to the Committee of Control. The Time-keepers were Messrs. J. F. Bidlake, J. Price, J. F. Ramsay, and Morgan Donne.

The Judging was originally undertaken by Messrs. H. L. Clarke, C. Cordingley, H. H. Sturme, and H. J. Swindley,

but the two latter retired after finishing the judging of the motor-tricycle control contests, at the desire of the Control Committee. It was held that this course was advisable as these gentlemen, after agreeing to act as Judges, had on the ground announced their intention of refraining from judging the contests on the track, owing to the fear of some conflict with the N.C.U., both gentlemen being prominent members of this body. Mr. H. L. Clarke, however, stuck to his guns, although he is the chairman of the Norwich centre of the N.C.U., and the Judges' work was carried out by him in conjunction with Mr. C. Cordingley. No less than fifty members of the Motor-Car Club, as well as a considerable number of their friends, very kindly undertook the responsible and rather unpleasant duties of Marshals of the Course.

The full times are as under :—

| Lap. | Time.              | Time per Lap.    | Time per Mile.     |
|------|--------------------|------------------|--------------------|
|      | min. sec.          | sec.             | min. sec.          |
| 1    | 44                 | 44               |                    |
| 2    | 1.15 $\frac{1}{2}$ | 31 $\frac{1}{2}$ |                    |
| 3    | 1.49               | 33 $\frac{1}{2}$ | 1.49               |
| 4    | 2.20               | 31               |                    |
| 5    | 2.53               | 33               |                    |
| 6    | 3.27 $\frac{2}{5}$ | 34 $\frac{2}{5}$ | 1.38 $\frac{2}{5}$ |
| 7    | 4.0                | 32 $\frac{3}{5}$ |                    |
| 8    | 4.35 $\frac{4}{5}$ | 35 $\frac{4}{5}$ |                    |
| 9    | 5.6 $\frac{3}{5}$  | 30 $\frac{4}{5}$ | 1.39 $\frac{1}{5}$ |
| 10   | 5.39 $\frac{4}{5}$ | 33 $\frac{1}{5}$ |                    |
| 11   | 6.12 $\frac{1}{5}$ | 32 $\frac{2}{5}$ |                    |
| 12   | 6.46 $\frac{3}{5}$ | 34 $\frac{2}{5}$ | 1.40               |
| 13   | 7.20               | 33 $\frac{2}{5}$ |                    |
| 14   | 7.54 $\frac{1}{5}$ | 34 $\frac{1}{5}$ |                    |
| 15   | 8.28               | 33 $\frac{3}{5}$ | 1.41 $\frac{2}{5}$ |

| Two Miles.         | Three Miles.       | Four Miles.        |
|--------------------|--------------------|--------------------|
| min. sec.          | min. sec.          | min. sec.          |
| 3.27 $\frac{2}{5}$ | 5.6 $\frac{3}{5}$  | 6.46 $\frac{3}{5}$ |
| 3.17 $\frac{3}{5}$ | 4.57 $\frac{3}{5}$ | 6.39               |
| 3.19 $\frac{1}{5}$ | 5.0 $\frac{3}{5}$  |                    |
| 3.21 $\frac{2}{5}$ |                    |                    |

In the evening an "informal" dinner was held, about eighty being present.

This, the first undertaking tackled by the Motor-Car Club since its reorganization, was undoubtedly a great success, although several points in connection with the arrangements made might have been very considerably improved. Mr. Baily informs us, however, that the gathering so far exceeded the Club's expectations that they were in a measure unprepared. In further extenuation of certain small shortcomings, it must be mentioned, too, that no such meeting as took place on Saturday last had ever been held before in this country. The Club, therefore, had nothing to guide them in regard to making the required arrangements, and bearing this in mind, as well as the fact that the undertaking was under a divided control, we think the Club is to be congratulated in having attained, on its first attempt, such a creditable success. The Marshals in charge of the parade on the Embankment inform us that eighty-three cars left there for the journey to the Crystal Palace, whilst the Sydenham authorities state that 153 motor-vehicles of all types entered the Palace grounds on Saturday last. This, therefore, holds the record as the largest meet yet held in England.

THE Glasgow Corporation have entrusted the terribly named "Mo-Car Syndicate" with an order for an electrical vehicle for use in collecting the city refuse. The cost is to be £532.

## SCOTTISH NOTES.

—8—

### A Saturday Outing.

DURING the brilliant weather of the past few days Scottish motorists have been enjoying their machines to the full. Several days in succession there has been no rain, and the sun has been shining in a cloudless sky, and many delightful excursions have been undertaken. One took place on Saturday last, and a correspondent who was fortunate to be one of the party has sent me the following report of the trip, and Mr. John E. Naismith, of Hamilton, has forwarded me a few photographs taken *en route*: "On Saturday afternoon a number of Scottish motorists met in Hamilton (the home of the Scottish motor industry) and drove off in company for a run up the beautiful Clyde Valley. The "horseless procession" created no little interest and stir as it passed through the ancient town in the direction of the well-known Lanark road, a road famous to automobilists on account of its ups and downs (with no particularly stiff ascent except Kirkfieldbank brae) and to tourists for its charming scenery,



A SCOTTISH MOTOR-CAR MEET.

the nature of which has won for it the suggestive appellation of the "orchard of Scotland." Seven vehicles took part in the run—four Stirling-Daimler wagonettes, a Daimler dog-cart, a Benz sociable, and a Beeston tricycle. The carriages, which in most cases were driven by the owners themselves, looked particularly well on starting, though the dust which lay thick on the otherwise splendid roads was soon flying in all directions, and obscured the high finish of the cars, as also in several cases the optical organs of some of the passengers. Up hill and down dale on the delightfully undulating road the procession "hummed" merrily on, with here a peep of the silver Clyde as its threaded its way to its noble Firth, and there a glimpse of blossom-laden fruit trees, the pears gleaming snow-white and the apples blushing rosy-pink in the shimmering sun. Mr. John Stirling, who was astride his motor-tricycle, acted as guide, philosopher, and friend to the party—one moment forging rapidly ahead and overtaking the fast cars, and at another retracing his ground to see that no stragglers were in difficulties. At Garrion Bridge, a charming little spot on the Clyde, a halt was called, and the photograph fiend let fly at the inoffensive motorists. We seized the fiend's camera, with the result as herewith submitted. A start was soon made, and once more the procession was in full swing. Some mild racing was indulged in, various cars in turn forging to the front, the *chauffeurs* cleverest in the manipulation of their speed levers being usually the winners. The sleepy little village of Crossford was aroused from its lethargic condition by the sudden appearance in its midst of seven motor-cars, which 'midst the warning "tootle" of the sweet (?) sounding horn were suddenly "drawn up" in front of the Tillietudlem

Hotel. Here refreshments were served, and after a stay of about an hour the cars were faced homewards again. A run of some four miles brought the party to Mauldslee Castle (the residence of Lord Newlands), where the party were again photographed by the ever-present photographic fiend, whose camera was again annexed, with the result that No. 2 of our illustrations was furnished. No time was lost in getting under way again. The little Benz car ran a good horse, to use a sporting expression perhaps not applicable to automobilism, but the 'motor vocabulary' is limited. Beyond frightening a few horses in a mild degree there were no untoward incidents. Some horses appeared to shy at motor-cars on principle, for one was noticed 'kicking' at the motors which were quite stationary in front of the hotel. The return home through the busy streets of the town in the evening



A SCOTTISH MOTOR-CAR MEET.

was again a source of interest to the onlookers, although it stands to reason that in a motor-manufacturing town like Hamilton they are much more common objects than in the country districts. The outing was a great success in every way, the cars all running splendidly. The smoothness of their running may be taken for granted when I mention that an infant of some ten months took part in the drive." From the above description it is evident that the outing was much enjoyed by all who took part in it. From the photographs I observed the faces of more than one gentleman well known in the Scottish motor-car world. My correspondent informs me that it is intended to repeat the outing on Saturday, and I am promised reports of same, with some snap shots, in due course.

"BROWN HEATHER."

A SPANISH correspondent informs us that El Sindicato Fundador de la Industria de Automobiles en España, of Madrid, has just imported a Columbia electrical vehicle from America. This is said to be the first electrical motor-vehicle in the Spanish capital.

ONE of the principal features of next month's electrical show in Madison Square Garden, New York, will be the display of electric vehicles. The Pope Manufacturing Company of Hartford, Conn., the Riker Electric Motor Company of Brooklyn, and the Woods Moto-Vehicle Company and the American Electric Vehicle Company of Chicago, have all secured spaces in the central part of the hall.

AT a meeting of the Council of the Liverpool Self-Propelled Traffic Association held on the 1st inst., the following were appointed a sub-committee to conclude the arrangements for the forthcoming Trials of Motor-Vehicles for Heavy Traffic, viz.: Messrs. J. A. Brodie, M.Inst.C.E., S. B. Cottrell, M.Inst.C.E., Dr. H. S. Hele-Shaw, M.Inst.C.E., Henry H. West, M.Inst.C.E., J. Walwyn White, Hon. Tres., and E. Shrapnell Smith, Hon. Sec.

## CORRESPONDENCE.

### PENNINGTON v. MORS CHALLENGES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As we are, and have been, most anxious that this contest should come off, we wired the Automobile Association early last week, asking them what day would suit their convenience to meet us at Shapfell and run off the race. Two days afterwards we received a letter stating that our telegram was "entirely incomprehensible." On May 6th we wrote them a letter, of which the enclosed is a copy (which please publish), and we have not since received any reply.

We leave the public to draw their own conclusions; but clearly, if the contest does not come off it is from no lack of willingness on our part to bring the matter to a conclusion.

London, Yours faithfully,  
May 9th, 1899. PENNINGTON & BAINES.

(Copy of Letter from Messrs. PENNINGTON & BAINES TO THE AUTOMOBILE ASSOCIATION, LIMITED.)

GENTLEMEN,—In last week's issue of the *Motor-Car Journal* we accepted your proposition, namely, to run a race against your "Mors" car (which can have either two, four, or any other number of cylinders and any number of horse-power) up Shapfell twenty-five times. In all these matters of challenges, as acknowledged by your Mr. Atkins when here, your challenge was not meant for us, but for the Daimler Company, and, as Mr. Atkins stated, you were surprised that we accepted; but, nevertheless, we did accept each and every challenge issued by your company, the Automobile Association; and when our cars were in Manchester we tried in every way known to us to get up an impromptu race here quietly, and, as stated before, there was always something the matter: either the tire had burst, the electric current was defective, or some part had not arrived from France to replace a broken one, and so on. Anyhow, from one excuse or another, we were never able to get you out on the road to run off a friendly contest. We expected with each mail to receive a letter stating that you would meet us on a certain day at Shapfell. We noticed that you had made your challenge for thirty days, and we did not wish to give you an opportunity to crawl out. Having no such letter we telegraphed as follows:—

"Since we have accepted your proposition have heard nothing from you. We are ready at any time. What day will suit you to meet us at Shapfell for the race?—PENNINGTON."

We regret that in these days of intelligence such a telegram is "entirely incomprehensible." We wish to say further that this is the second letter we have had from you, and in both letters the only prominent character was the word "incomprehensible." It seems strange that you cannot comprehend so clear and straightforward a telegram as the one given above; and we wish to call your attention to the fact that we hold ourselves in readiness to meet you at Shapfell with any type of car (from your four-cylinder up to your 16-h.p. racing-car) you may wish to enter against us for the race up this hill twenty-five times against our double-cylinder car, each car to carry two people. We wish to tell you that we are doing our business with our customers on business lines, and never have we in any case cried down the ability of the "Mors" car or any other car. On the other hand, we have statements in writing to show that you have devoted much time and energy in crying down our make of car; and we wish to point out, and are willing to prove, that we have sold fifty cars where you have sold one "Mors." And why? Because we devote our full time to telling the qualities of our own car, and not running down the quality of any other.

Yours faithfully,  
PENNINGTON & BAINES.

P.S.—We await your telegram saying when you can meet us at Shapfell.—P. & B.

### TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We are much obliged to you for informing us of the contents of Messrs. Pennington & Baines' letter. On May 9th we replied to these gentlemen as follows:—

"We are in receipt of your letter of the 6th inst. We have made our position quite clear in our letters published on the 14th ult. and 6th inst., and we now note with pleasure that you are willing to adopt our propositions made therein. To come to as speedy a termination of the contest as possible, we believe the best means is the carrying out of the suggestion made by the Editor on page 129 of *The Motor-Car Journal*. We have written to the latter to this effect, and trusting that you are of our opinion,

"We are, yours faithfully,  
"THE AUTOMOBILE ASSOCIATION, LTD."

As you will see by this we have done everything to ensure the speedy coming off of the contest and refrained from replying to the many other points which Messrs. Pennington & Baines have seen fit to raise, and which are as

untrue as they have little to do with the challenge. Lastly, we should like to express our surprise at the extraordinary postal arrangements which prevented Messrs. Pennington and Baines from getting on the 10th our letter posted here on the 9th inst.

Yours faithfully,  
May 11th, 1899. THE AUTOMOBILE ASSOCIATION, LTD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to your suggestion on page 129 of your valuable paper, we think the same a very good one indeed, and shall be only too pleased thus to end this paper feud. We are sorry that we had to ask to so often intrude on your valuable space, which was very much to our dislike, as we are business people, and old-fashioned enough to believe that "the only proof of the pudding is in the eating" and not in the talking about it.

Yours faithfully,  
THE AUTOMOBILE ASSOCIATION, LTD.  
Prince's Road, Holland Park Avenue,  
London, W., May 9th, 1899.

### EFFECT OF "JARRING" ON RIDERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I have space to reply to those correspondents who have taken the trouble to note my former letter on "Jarring"? The letters of Messrs. Rollason and "Petrol" confirm my complaint that some better system of seating is required on a motor-tricycle than an ordinary saddle. I have tried one of the Automobile Association seats as pictured in your last issue, but do not like them any better than, even if as well as, a good saddle. I have been designing a special padded seat which I am getting made, and when I have tried it I will give my experience of it.

Mr. Blyde recommends pneumatic saddles. I have tried these, and consider them the most uncomfortable saddles made—they seem to get so hot and ride dead.

Mr. Edge puts me down as a novice suffering from the natural stiffness of a first ride. I may say that I have been riding motor-tricycles now for two years and a half, have covered many thousands of miles, and often run eighty miles in the day. I should be fairly well seasoned by now, and yet, as I said before, a fast ride on a lumpy road seems to have more effect on the spine than 100 or 150 miles' ride on an ordinary bicycle.

Yours truly,  
Bradford, May 8th, 1899. JAS. EDW. TUKE.

### THE WORKING OF BENZ CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In accordance with my promise last week, I hasten to give your readers the result of a further trial of the new Benz cars. I went up to London on Saturday evening and made arrangements to leave on Sunday morning with a new No. 2 "Ideal." I was so confident that she would turn out all right that I did not even start the motor until the car was in the street ready to start for Birmingham.

I may say that I had with me a gentleman anxious to experience a long run, and we were accompanied some distance by a friend with his two-speed "Ideal," weighing some 2½ cwt. lighter than my car.

We left Messrs. Hewetson's premises at 10.30 a.m., and reached Barnet about 12.0. After "oiling" we started for St. Albans (ten miles), and reached there at 12.55, twelve minutes before the lighter car; leaving again at 1.20, we ran to Dunstable (2.20), making a long stop there, just outside the town, as our companion had to return to London.

At 4 p.m. we started again, my friend returning to London (have since heard that he reached Oxford Street at 6.30 without a stop) while we went on to Stony Stratford, where we had tea. At 5.25 we started again, and our next stop was Coventry (thirty-nine miles), which was reached at 8.50.

We took in water here, and, leaving at 9.10, we arrived at Birmingham at 10.15, after a most enjoyable day.

Now, as regards "little adjustments," I can only repeat what I said last week. Not a tool of any kind (except oil can) was touched the whole way, and upon inspection at home I found everything all right—not a nut or bolt loose. Of course, I used the oil can at every stop and felt the bearings over, but found nothing get warm. Our average was about fifteen miles per hour. The roads were good, though we had a stiff head-wind most of the way and plenty of dust. My "passenger" was delighted, and there is now one more proud owner of a Benz car.

Acocks Green, Birmingham, Yours faithfully,  
May 9th, 1899. A. J. ALDRED.

### THE JUDGING AT THE MOTOR-CAR MEET.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In case there should be the slightest misunderstanding in regard to my Committee's action in reference to their relieving Messrs. Sturmev and Swindley of their duties as judges on Saturday last on the occasion of the motor-car meet at the Crystal Palace, I would like, for the benefit of your readers, to fully explain the Club's position in this matter.

On April 19th we received a letter from the Secretary of the National Cyclists' Union (London centre) saying that anybody taking part in our competitions must hold a N.C.U. amateur or professional cyclist's licence, and, further, that unless this was the case no Union official would be permitted to act without suffering punishment.

We at once communicated this to the Press, together with a copy of the letter of protest which we addressed to the N.C.U.

In the face of this, four gentlemen, namely, Messrs. Clark, Cordingley, Sturmev, and Swindley, were kind enough to act as judges at our meet, although fully realising that according to this N.C.U. they ran the risk of suffering some terrible punishment.

At the last moment, however (even so late as after judging the motor-tricycle control time contest), Messrs. Sturmev and Swindley became frightened, and expressed their intention of not judging some of the competitions set down for decision.

As the Committee could not understand why these gentlemen should wish to withdraw from a portion of the duties accepted by them, they, of course, at once relieved them from any further responsibility, and the judges' work and duties were carried out by Mr. H. L. Clark (chairman of the Norwich centre of the N.C.U.) and Mr. Charles Cordingley.

My Committee would like it clearly understood that they have no ill-feeling in the matter so far as Messrs. Sturmev and Swindley are concerned, as they recognise that these gentlemen acted in perfectly good faith from their own point of view; but at the same time the Club maintains emphatically that automobilists shall not be governed by or interfered with in any way except by a properly constituted body formed from their own ranks. They feel that gentlemen acting in any capacity in relation to motor-car contests must be prepared to act entirely from an automobilist's point of view, and not throw in their lot with nor support the views of this cycling body who are desirous of taking under their control a new form of sport. There is no doubt that motor-vehicle contests are rapidly displacing cycle racing—at any rate, amongst those who wish to participate in a sport which, at the present time at any rate, is entirely confined to amateurs, and is free from that class of competitors which the N.C.U. appears to spend its life in trying to eradicate with such poor success.

Of course, the public can appreciate quite well that it is possible for a person to be a professional cyclist or runner without his becoming *ipse facto* a professional in automobilism, yachting, driving or shooting. Yours truly,  
May 10th, 1899. F. W. BAILY, Hon. Sec.

# Leaders in Mechanical Road Locomotion.

## IV.—MONSIEUR LEON SERPOLLET.

CONTINUING our series of illustrated biographical sketches of those who are entitled to be termed leaders in the revivification of the movement for providing motor-vehicles for mechanical road locomotion, we give this week a portrait and a few biographical details of Monsieur Leon Serpollet, one of the most indefatigable of the many workers in this complicated section of mechanical engineering. Mon-

sieur Serpollet is no new adherent to the automobile movement. From his youngest days the problems connected with it have exercised a charm over him that, fortunately for the industry, he has ever found it impossible to destroy. His furnaces and boilers for motor-vehicles on rails have, of course, a world-wide reputation, but although applied in the first instance to vehicles on rails, the research resulting in their production was primarily undertaken with a view of providing satisfactory boilers, etc., for vehicles travelling on the ordinary road surface. These investigations were commenced when the subject of this sketch was 18 years of age, and it was at this period that he commenced to construct in his father's workshops the first of those pieces of apparatus which have led him to become a master in the problems connected with the construction of steam motor-vehicles and the provision of a boiler which should have enormous power and yet be under perfect control.

It was not until 1888, however, that his first steam road vehicle was constructed, and in that period it may be confidently averred that no day was passed without his spending some portion of it in the endeavour to perfect his system and master the difficult problems presented. We do not seek to convey that this labour was incessant, for numerous other problems claimed his attention. He even afforded relief to himself by writing poetry; but no problems undertaken had ever such an attraction for him as mechanical road locomotion. Although his attention was withdrawn from this subject occasionally, either by claims of business or by mere force of will, yet he always returned to his first love, and grudged no labour in becoming intimately acquainted with its many phases.

Everyone who has had the pleasure of being on terms of acquaintance with Leon Serpollet will acknowledge that his temperament is an ideal one for such labours as he has undertaken. His enthusiasm for steam as a motive power is only

equalled by his enthusiasm in motor road locomotion generally. In temperament equable, persevering, and undespairing, no difficulties encountered have been sufficient to shake his determination to conquer or to dissipate his enthusiasm. Never boasting, and always open to appraise true criticism at its proper value, the results of his labours have always been advances. Those things which experience or criticism have proved to be undesirable he has willingly sacrificed, with due acknowledgments to the critic; but, no matter how severely just the criticism, he has never despaired and never lost heart or temper, applying himself with diligence to a search for some method of disarming the critics.

Those who examine the results of his labours from his earliest days to the present moment must perforce acknowledge that there has been no backward step; every change has been towards advancement, and every variation of an original conception an improvement. Monsieur Serpollet is no believer in, or worker by, "guesswork," everything he does is founded on a close study of scientific and mechanical laws; he is never hasty, but always calm and deliberate; full of energy, but never a chaser of "will-o'-the-wisps."

His researches in connection with the utilisation of the best fuels for automobile vehicles has led him in turn to adopt coal, coke, anthracite, and at last liquid fuel or petroleum. His labours to find a satisfactory burner for liquid fuel have been immense; but, as is now well known, he considers that the last two years' study have brought him to finality—for the present, at least. His burner is now silent, ensures a perfect combustion of the oils, or rather their gases, and is, moreover, under such perfect control that automatically, on the demand arising, his "fires" are increased synchronously with the provision of additional water for evaporation. He is, of course, a

rigid believer in the use of super-heated steam for automobile vehicles, and no one could discuss this matter with him without becoming convinced of the truth of his arguments and of the immense and exact knowledge which he brought to bear in discovering a satisfactory means of generating, controlling and utilising it.

By his steadiness of application, by the thoroughness of his work, and by his intimate knowledge of the intricacies involved, Monsieur Leon Serpollet has the right of being placed amongst the pioneers in the automobile movement. It was to him that the first licence was granted for driving an automobile through the streets of Paris; this was in 1888. Apart, then, from his labours, he has a right to be included in the illustrious group containing Gottlieb Daimler, Emile



MONSIEUR LEON SERPOLLET.



Léonard, Count de Dion, and Armand Peugeot, whose works have so considerably contributed to the success of the horseless vehicle of the present day.

His peregrinations through the Paris streets in 1888, and his subsequent journeys with his friend Monsieur Archdeacon from Paris to Lyons and Lille in his then certainly roughly-constructed and crude vehicles, are a matter of history. But in the light of present improvements such journeys must be regarded as being mere "promenades," and from confidential information afforded us, which we are at present unable to publish, we are convinced that the Leon Serpollet vehicles to be exhibited at the forthcoming Exhibition in Paris will demonstrate most fully that all the difficulties previously encountered in constructing a small steam pleasure carriage have been overcome, and that they will mark a new advance in the solution of the problems connected with automobile locomotion.

As we have stated, Monsieur Serpollet holds that for the present at least his researches are finished. His recent improvements have brought his vehicles to a point where success is certain and assured, and we tender our best wishes (which we know will be re-echoed by all automobilists) to Monsieur Leon Serpollet, and his financial supporter, Mr. Gardner, who have each in their respective spheres rendered it possible for an automobilist to possess a thoroughly satisfactory steam motor-vehicle.

## MOTOR-CARS ON THE CONTINENT.

### The Paris-Bordeaux Race.

THE route taken for this race, in which it is anticipated that several English riders will take part, is via Paris, Versailles, Chartres, Cheateaudun, Vendome, Tours, Châtellerault, Poitiers, Ruffec, Angoulême, Barbezieux and Bordeaux. The total distance is 565 kilometres. As already announced, an exhibition of the vehicles taking part in this and the two other events down for decision at this period will take place in the Quinconces Square.

### The Turin Race.

THE Turin-Pignerol-Turin contests were run off in most glorious weather. Of the huge number of entries no less than forty-eight signed the control book and faced the starter. The results were as follows: Class 1—Two-seated carriages: 1st, Gras, in 1 h. 59 m. 20 s.; 2nd, Chauchard, 2 h. 2 m. 37 s. Class 2—Four-seated carriages: 1st, Gondouin, 2 h. 26 m. 12 s.; 2nd, Clerissy; 3rd, Le Tainturier. Class 3—Motor-tricycles: 1st, Bugatti, in 1 h. 39 m. 7 s. Several competitors had to give up owing to accidents, but these were not of a very serious character. The exhibition which followed the contest was well attended, and appeared to create very considerable interest.

### Motor-Vehicles in the Haute-Loire District.

THE Compagnie Lyonnaise, which devotes itself entirely to providing public motor-vehicle services, has received the consent of the authorities to set up steam vehicle services on the following routes, namely: From Puy to Fay-le-Froid, from Puy to Monastier, from Puy to Saugues, and from Puy to Langogne. We are also informed that additional routes are now under consideration as follows: From Mendez to Langogne (Lozère), from Mendes to Florac (Lozère), from Florac-Sainte-Cécile in connection with the P.L.M. Railway, and from Tay-Le Cheylard (Ardèche). The Company is a very energetic one, and in addition to establishing the services above mentioned it is proposed to undertake others in adjoining districts so soon as the necessary vehicles can be procured. The Scotte road train is employed in all the Company's services, and as the districts in the sections selected are very poorly provided with means of inter-communication, those who are in a position to judge hold that the services will be well patronised and become commercially successful.

### The Paris Automobile Betting Luncheon.

THE Parisian automobilist is always on the look-out for new means of providing that excitement upon which the French appear to thrive so well. The latest institution is the Betting Breakfast or Luncheon. At this the members assemble, and as the spirit moves them make more or less rash bets. In the past, dirigible balloons have been matched to alight on the terrace of the club house of the Automobile Club. Various other apparently ridiculous challenges have been laid down, and have found ready acceptors, in the majority of cases the stakes taking the form of champagne luncheons. Last week further progress was made in these somewhat braggart and foolish schemes. A Monsieur Noel bet that the kilomètre record of Count de Chasseloup-Laubat (38½ seconds) will be beaten before the end of the present year by a carriage actuated by a petroleum-spirit motor. The bet was accepted by Monsieur Thévin, who apparently does not possess so great a faith in the coming capabilities of petroleum motor-vehicles as the proposer of the bet. Another of these series of events was that Monsieur Santos-Dumont contended that in the dirigible balloon contest the smallest balloon will travel farther than the largest ones. Monsieur Monnier accepted the bet, holding a contrary opinion.

### The Races at the Parc des Princes.

THIS race, which was held on Sunday week last, embraced a contest for motor-cycles over a distance of 20 kilometres. This contest, although open to motor-bicycles and motor-tricycles, was, as a fact, restricted almost entirely to motor-tricycles, only one Bollée voiturette being entered. At the start, Giraud on his Bollée gained 50 metres start, but by dint of pedalling the tricycles were enabled to pass it very soon, and the voiturette was left 100 metres behind the other competitors. The Bollée, unluckily, made a violent lurch at a sharp turn and was thus put out of the race, the steering device being strained. Then the tricycles only remained on the track. Rivière, who drove a motor-tricycle fitted with a twin-cylinder engine, was at first rather slow in starting, and ultimately nearly suffered a spill. The contest was thus reduced to a match between Vasseur and Beconnais, who from the beginning followed each other very closely. Beconnais tried again and again to pass, but Vasseur resisted, and the two runners finished as they started. During that time Rivière, who had started again, passed Girardot and reached the third position. The results were as follows:—First, Vasseur, in 21 min.; second, Beconnais, a wheel's length behind; third, Rivière, 1½ wheel behind; fourth, Girardot, 2½ wheels behind. The one hour contest with self-propelled cycles proved once more the insufficiency of the power fitted to the petroleum tandems, their working being far too irregular for trials of this kind. Out of a dozen tandems only three or four worked well, the others having frequent breakdowns and making a deafening noise. After the meeting, M. René de Knyff with a four-seated carriage, and Giraud with a two-seated one, went down on the track and drove for about ten minutes. It is quite certain that if the track were wider, one could organise carriage contests thereon. At any rate this trial shows the possibility of an automobilodrome, but unless the speed was unnecessarily high we should not care to drive a motor-carriage on a banked track.

### Rallie-Papiers of the "Vie au Grand Air."

OUR contemporary, the *Vie au Grand Air* has organised for decision on May 21st an automobile paper-chase competition open to the members of the A.C.F., T.C.F., and to the subscribers and guests of our contemporary. There will be three classes; A, carriages; B, motor-cycles; and C, carriages driven by a lady. The course will be about thirty kilometres.

**Draguignan Race.**

ON May 21st the Draguignan, Traves, les Arcs, Vidauban, Lorgues, Draguignan race will take place. Two classes are comprised in the contest—carriages and motor-cycles (under 200 kilos.). An obligatory display will be held on May 22nd on the boulevard Bernard-Trans.

**Motocyclettes Criterium.**

OUR contemporary, *Le Vélo*, is organizing, under this heading, for July 11th next a 100-kilometres contest, restricted to motor-bicycles weighing under 50 kilos. in driving order. The voiturette contest inaugurated by the same paper for vehicles of the small carriage type weighing under 300 kilos. will be run on June 6th.

**The Tour de France.**

OUR contemporary, *Le Matin*, has just published the route to be followed in the competition which it has organized. It is as follows: First day, July 16th—Paris, Fère-Champenoise, Saint-Dizier, Toul, Nancy, about 300 kilometres; start from Champigny at 8 a.m. Second day, July 17th—Nancy, Langres, Gray, Dôle, Lons-le-Saunier, Bourg, Amberieu, Culoz, Aix-les-Bains, about 450 kilometres; start from Nancy at 5 a.m. Third day, July 18th—Rest. Fourth day, July 19th—Aix-les-Bains, Chambéry, Grenoble, Romans, Tournon, St. Etienne, Roanne, La Palisse, Vichy, about 400 kilometres; start from Aix-les-Bains at 5 a.m. Fifth day, July 20th—Rest. Sixth day, July 21st—Vichy, Clermont-Ferrand, Ussel, Tulle, Brive, Périgueux, about 300 kilometres; start from Vichy at 6 a.m. Seventh day, July 22nd—Périgueux, Ruffec, Bressuire, Nantes, about 350 kilometres; start from Périgueux at 6 a.m. Eighth day, July 23rd—Nantes, Angers, Le Mans, Alençon, Argentan, Falaise, Caen, Cabourg, about 350 kilometres; start from Nantes at 6 a.m. Ninth day, July 24th—Cabourg, Lisieux, Evreux, Saint-Germain, about 200 kilometres; start from Cabourg at 10 a.m. The whole distance is about 2,350 kilometres, and twenty-four Departments are passed through in the tour. None of the roads that we have mapped out, says *Le Matin*, except the part included between Lisieux and Saint-Germain, have yet been the scene of automobile contests. Nancy in the east, Clermont-Ferrand in the middle, Nantes in the west of France, are important centres interesting to visit, and at which the contestants will be joyfully received. In a few days the itinerary in all its details will be published, and the exact topography. Some of the roads announced are very well known, and there are veritable race-tracks on some of them on which the highest speeds can be realised without any danger. The greater part of the western itinerary, all the distance from Périgueux to Paris, is, we are told, also over very fine roads.

**LONDON ELECTRICAL CAB COMPANY.**

MR. JUSTICE BYRNE had before him an application in the matter of this Company for relief under the Companies Act of 1898 in respect of certain fully paid-up shares. The vendors of the patent rights under which the Company worked agreed to sell the patents, to be paid in cash or shares. The vendors had received a certain amount in cash from two issues of shares, and in 1898 they agreed to take the balance (some £24,000) in fully paid shares. These were allotted, but no sufficient contract had been filed, and the applicants, the holders of shares, have asked that a memorandum in writing might be filed with the Registrar of Joint Stock Companies. Mr. Justice Byrne directed the filing of a memorandum in a form to be approved in chambers, and directed that on its being filed it should operate as a sufficient contract.

EIGHT hundred and thirty-two motor-car drivers have presented themselves to the Paris police for licences during the past five months. This number includes one hundred cabdrivers.

**SOME NEW WATER - CIRCULATING PUMPS FOR PETROLEUM-SPIRIT MOTOR-CARS.**

IN order to keep up a rapid circulation of cooling water to the cylinders of petroleum-spirit motors a pump of some description appears to be an absolute necessity, troublesome though some of these attachments have proved. Several new types of pumps, said to be specially suitable for application to motor-vehicles owing to their simplicity and relative small size, have recently made their appearance on the market. Among these is the "Abeille" centrifugal pump shown in Fig. 1, lately introduced by Messrs. Dalifol and Thomas, of 183 bis Faubourg Saint-Honoré, Paris. As will be seen, it comprises but few parts. On the shaft is a disc *D*, provided with projecting vanes. The shaft and disc are rotated by means of the small pulley driven by the motor, either by means of a strap or by frictional contact with the

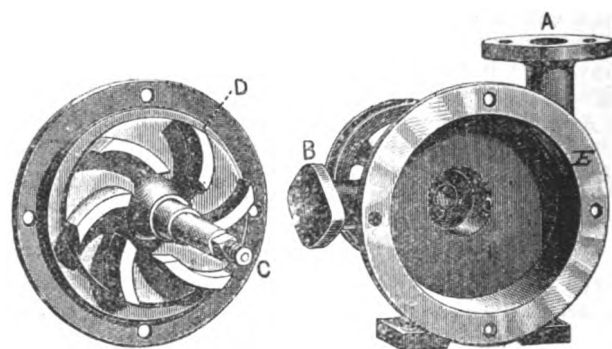


FIG. 1.—PUMPS.

fly-wheel. The principal claim made for the "Abeille" pump is the facility with which it can be taken apart without interfering with the connections of either the inlet or outlet pipes *A B*. To remove the cover *C* with the disc *D* and shaft from the body of the pump it is only necessary to unscrew four bolts.

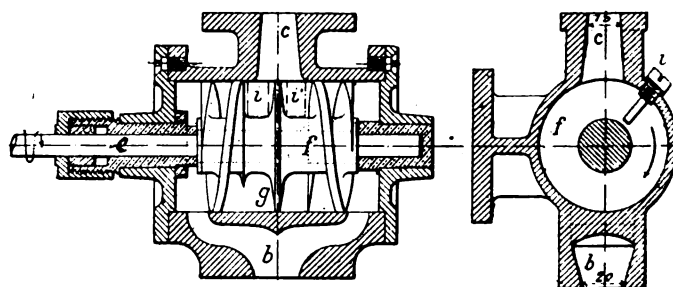


FIG. 2 AND 3.—PUMPS.

Another improved rotary pump has lately been devised by M. Julien and made by M. G. Benoit, 119 Rue St. Maur, Paris. It is illustrated herewith by the two sectional views, Figs. 2 and 3. The piston forms the essential feature of the new pump; it comprises a short screw *b*, on which the thread or direction of one half is contrary to that of the other half. The screw is mounted on the rotating shaft *e*, which runs in suitable bronze bearings. The screw is cast in one piece with a circular wall *g* which divides the cylinder into two portions, each part having communication with the admission and outlet pipes *b c*. Extending through the cylinder walls on each side of the dividing wall *g* are two special flat-faced bolts *i*, the use of which is to prevent the rotation of the water at that portion of the cylinder. When the pump is put in operation the heated water is drawn in from the walls of the cylinder of the motor, and driven towards the centre of the pump cylinder, at a pressure proportional to the speed of the rotation of the pump. When the water meets the dividing wall *g* its direction is diverted, and meeting the pieces *i* it is

caused to pass upwards through the outlet pipe *c*. The pump can also be run in the reverse direction, and employed in maintaining a supply of cold water to the water jacket of the motor. It will also, it is claimed, work equally well with heated water, even up to a temperature exceeding 100° C. At a speed of from 2,000 to 2,400 revolutions per minutes, and a difference in height of 3½ ft., a pump with a 60-mm. diameter cylinder will, it is stated, circulate from 500 to 600 litres of water per hour. The pump only weighs about 8½ lb., and by the use of aluminium in certain of the parts M. Julien hopes to reduce the weight to less than 4½ lb.

## PETROLEUM MOTOR-VEHICLES.\*

By JAMES D. ROOTS, A.M.I.M.E.

(Continued from p. 144.)



Fig. 6 is a sectional elevation of the Butler tricycle, which was made in this country, but which, from all the author can gather, was not a very successful attempt to apply a motor to a tricycle. Its inventor, however, displayed much ingenuity and perseverance in his endeavours to solve the problem of light road locomotion, and he certainly deserved to have been more successful. His patent for this motor-tricycle is No. 15,598, November 15th, 1887.

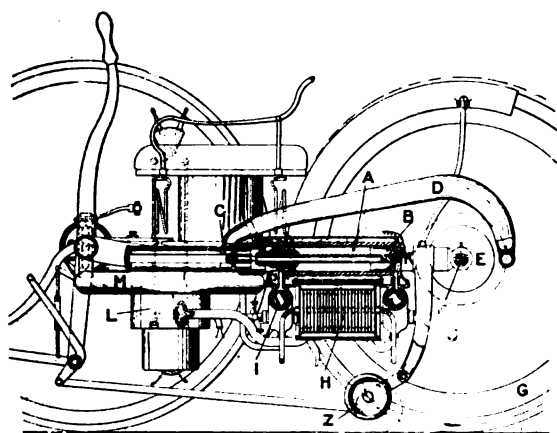


FIG. 6.

A is one of the motors, for two were fitted to the tricycle, B the piston, C a guide, D a connecting rod conveying the power directly to the crank E, attached to the axle of the rear driving wheel. The other motor was fitted and connected to a similar crank on the other side of the rear driver. The two front wheels were steerers, and were connected together in a somewhat similar way to the Ackerman steering arrangement. F is the rear driving spindle of the back wheel G. H is a chamber, packed with wire gauze to prevent back fires, in which the explosive mixture was stored under pressure, an arrangement that under certain circumstances might become dangerous. I is a rotary admission and emission valve for the front end or pump end of the cylinder A, the piston rod of which worked through a gland. In the front end of the cylinder the piston B, through the rotary valve I, drew in its charge of mixed air and petroleum spirit and delivered it under pressure through the same valve to the pressure chamber H. When the rotary valve J, which is the distributing valve for the combustion end of the cylinder, was in the correct set position, the charge under pressure flowed into the combustion end of the cylinder from the chamber H, until the piston had travelled one-fifth of its stroke. The rotary valve J was then closed, and the charge was fired by an electric spark at the terminals K. The carburettor does not appear in this view. L is a chamber in which the air to be used in the cylinder was heated by the exhaust products. M is the spirit tank, N the water tank. Z is a roller intended

to serve as a brake, and to lift the back of the tricycle from the ground to start it.

There was an explosion impulse only at every alternate stroke, and this impulse was very seriously affected as to efficiency by the fact that the charge was fired only after one-fifth of the stroke had been completed. The effect of this would be to reduce the power of the motor in comparison with the ordinary De Rochas cycle by considerably more than one-fifth. Many other losses affecting the general efficiency would follow from this arrangement, but no doubt it was essential at that time to make some considerable departure from the Otto construction, as the patent for that engine was still in force.

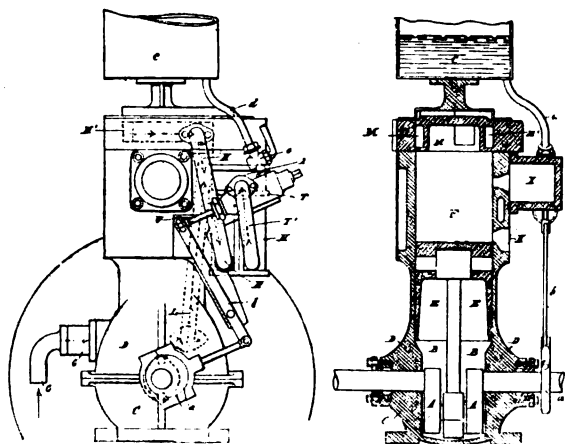
All the vehicles hitherto considered used petroleum spirit as their fuel for propelling purposes, the vapour of which, mixed with its due proportion of air, was exploded either by an electric spark or by a hot tube in the motor cylinder. Up to the year 1892 no attempt had been made, so far as the author is aware (at all events he has not found any record of any such attempt in the Patent Office), to make a petroleum motor-vehicle of any kind to work with petroleum oil instead of spirit.

In the year 1892 the author commenced work upon the problem of road locomotion, in preparation for what he then believed to be the sooner or later inevitable repeal of the restrictions upon that class of locomotion. The specification No. 23,786 of 1892 describes and illustrates the small motor-vehicle he made in that year, using petroleum oil in preference to spirit, although it is an easy matter to make a spirit motor work successfully and a very difficult matter to make an oil motor do so, for he perceived clearly that history would repeat itself in this matter, and that if the public could get an oil motor at only approximately the same price as a spirit motor there would be no longer a sale for the latter. This is, in fact, what occurred with the fixed motor or stationary engine, and what will occur in the immediate future with the vehicle motor. A certain number of benzolene spirit engines—three, the author thinks—were on the market in 1888, when Messrs. Priestman produced the first oil engine that was exhibited for sale. The author does not mean by this the first oil engine that was successfully running, for in 1886 he had an oil engine on the De Rochas cycle at work. Not very long after the introduction of the Priestman oil engine, spirit engines for stationary purposes gradually ceased to exist. There was no longer any sale for them. The public were fully aware of their danger in comparison with the safety of the oil engines, and when they could purchase the latter they refused to have the former. Moreover, the author believes that sooner or later—probably sooner—the Government will be compelled to re-impose the former restrictions, i.e., those in force before the passing of the Act, in 1896, upon the sale and storage of petroleum spirit—mineral spirit are the official words—or even make them more stringent. For as the motor-vehicle becomes more widely used, and more in the hands of the general public, accidents owing to carelessness in the use or storage of the spirit must become more and more frequent.

Figs. 7, 8, 9 and 10 illustrate the motor and motor-tricycle made by the author in 1892. Fig. 7 is a side elevation; Fig. 8 is a section; and Figs. 9 and 10 are a plan and sectional elevation of this motor-tricycle. These figures are taken from his specification No. 23,786, dated December 24th, 1892, and except for some small details they are fairly accurate. This motor is an "impulse every revolution" engine of the compression class 2 and type 4, in which the opposite face of the working piston is used as a pump to pump the air for the next charge to the combustion side of the piston. Air is drawn through the valve G to the crank chamber B during the upward stroke of the piston E, and compressed by the downward stroke of the piston in the chamber B into the tube L, the channel M, the tube N, the vaporiser H, until the piston E uncovers the exhaust port K in the wall of the cylinder F. The exhaust products of the previous combustion flow through the port K, until at or

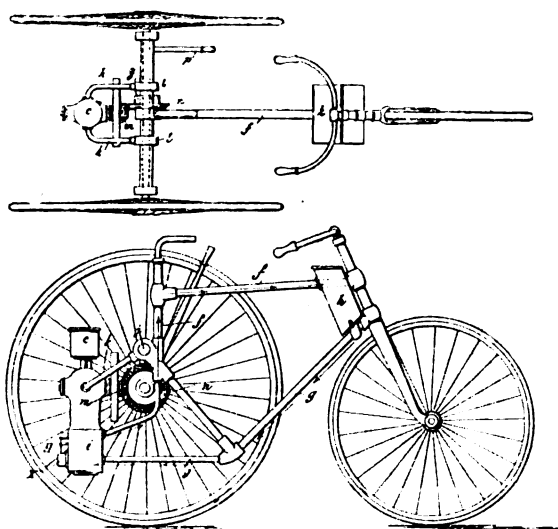
\* A paper read before the Society of Engineers, May 1st, 1899.

about the end of the stroke or dead-point. The pressure in the cylinder *F* on the inside or upper side of the valve *J* now falls below that of the lower sides of the valve, and the air mixed with vaporised oil from the feeder flows—in manner to be presently discussed—through the valve *J* into the cylinder, displacing more products of combustion until the commencement of the stroke of the piston has closed the port *K*. The new charge is then compressed by the upward stroke of the piston, and is fired by the tube kept red hot within the vaporiser. The working stroke then takes place during the downward stroke, until the exhaust port *K* is uncovered by the piston, when the series of operations just described re-commences.



FIGS. 7 AND 8.

Fig. 10 shows the method of fixing the motor to the tricycle. The power of the engine is transmitted to the driving axle of the velocipede (or it may be a bath-chair or other vehicle) by means of reducing gear consisting of a bevel pinion *M* and a large bevel wheel *N* which is so arranged upon the driving axle with the friction clutch *Z* that it may run loose upon it when it is desired to stop the machine, or when going down hill, without necessarily stopping the



FIGS. 9 AND 10.

engine; but when the power of the engine is to be communicated to the driving axle, bevel wheel *N* transfers its motion by means of the friction clutch *Z* through the balance gear to the driving axle of the machine, and is under control of the driver by the lever *P*. The usual chain and pedal motion may be added when desired. From the water tank *h* a circulation of water is maintained from the jacket of the motor by the tubular frame of the tricycle, the upper tube *f* taking the water from the jacket to the tank, while the flow to the

jacket takes place through a tube to the frame *g*. The motor is carried by means of the tube *g* and tubes *k* *h*.

It will be seen that, except for the use of a bevel for the ordinary pinion and wheel and a friction clutch, the arrangement is similar to that now in use on the De Dion tricycles. This motor was attached to a tricycle of the Coventry Machinists' make, but it was not very successful, for the motor would occasionally fire the new charge directly after it entered the cylinder and during compression, and this had the effect of reversing the tricycle and running it backwards. It was tested repeatedly for some months in Holborn, at about 2 o'clock in the morning, but as the author could not cure the motor of the liability to reverse it was taken off with the intention of changing the cycle to the De Rochas.

A small vertical motor which the author made in 1893 gave rather over 1 brake horse-power, and weighed complete only 90 lb. It worked upon the ordinary De Rochas cycle, and was constructed especially for vehicles, but was controllable by hand only and had no governor. The speed was 420 revolutions. The oil tank was fitted at the top as in the earlier tricycle motor. The crank chamber was completely enclosed and air-tight, and the crank worked in an oil bath. A few of these were sold in 1893 and 1894, some on the Continent. This motor was exhibited at the Stanley Show of 1894. The vaporiser and oil feeder were very similar to those used at present on the Roots motor. The exhaust valve was operated by skew gear as shown, the second or half-speed wheel being placed eccentrically upon its pin, in this way operating its rod, which pushed open the exhaust valve. The fault of this engine was the absence of a governor. It was intended to be controlled by hand, by simultaneously throttling the admission valve and reducing the stroke of the oil feed spindle. This was effected by a small hand lever on an eccentric pin, but it was not done sufficiently effectively to prevent the motor increasing speed unduly when not driving, and when this occurred misfires followed, making the exhaust smoky. The author was informed that one of these motors was fixed in Genoa to a tricycle, and when running and driving worked satisfactorily without smoke after it had got hot, but the absence of a governor made the motor give off a considerable amount of smoke when running free and not driving the tricycle. This motor, however, ran more satisfactorily than any other attempted oil vehicle motor the author has since seen or heard of.

In August, 1895, the author, conjointly with his partner Mr. Venables, commenced the construction of the first motor-carriage propelled by a petroleum motor made in this country. There had been small and light vehicles of the tricycle type, such as those which have been described, built before, but none, so far as the author is aware, with a carriage body of ordinary construction. Fig. 12 shows this vehicle; it was fitted with a vertical oil motor on the Roots principle of vaporisation and feeding of oil, and was of  $2\frac{3}{4}$  brake horse-power and of  $3\frac{1}{2}$  indicated horse-power. The method of steering is the cycle head and fork, with the addition of a heavy coil spring fitted inside the head, which permitted the fork spindle to slide vertically within the head. When the carriage was first tried in February of 1896, the motor had a friction clutch or drive attached to the crank shaft, so adjusted that if more resistance than the equivalent of  $2\frac{3}{4}$  brake horse-power were placed upon the clutch it would automatically slip. In practice, this slip only took place when starting, when changing speed from slow to quick, and when on the steepest hills. A chain from the friction clutch drove the outer casing of a box of gear providing two speeds, a maximum of eleven and a slow speed of four miles an hour. It was first tried with a speed of thirteen miles an hour, but the side slip or skidding of the single front steering wheel made the steering, when going at this speed on a greasy road, very erratic and even dangerous. The reduction to eleven miles an hour, together with the addition of weight over the steering wheel, completely surmounted this difficulty. The weight of the car was about 13 cwt.

About 18 gallons of water were carried in a tank beneath the floor of the car. A large copper cooling coil was placed in front of the petro-car behind the louvre slats. The water was pumped through the jacket round the coil and into the tank. The governing was effected by an inertia governor operating upon the exhaust valve and the oil feed. This was not found to be perfectly satisfactory, because the dropping of the vehicle wheel in a depression in the road or going over an obstruction would act upon the weight of the governor, throwing it out of position when not at excess speed, so that a rough road would sometimes slow down the motor. The body had ordinary plate springs to attach it to the frame, while the frame rode upon coiled springs fitted to blocks sliding in guides, in a similar way to tram-car springs.

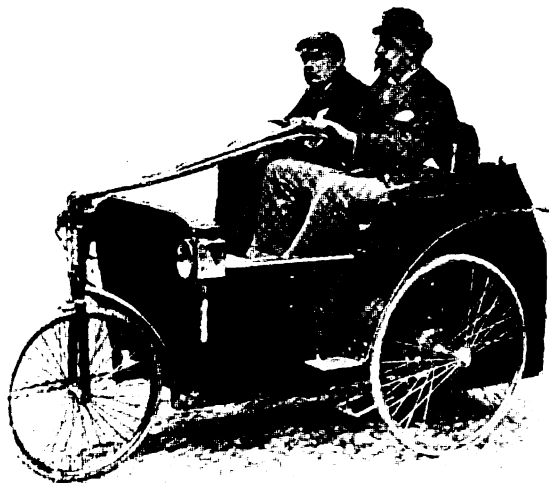


FIG. 12.

The box of gear for changing speed was not found to be very satisfactory, and early in 1896 this was taken off, and the transmission effected by belting and toothed wheels. Two pulleys were fitted to the crank-shaft and two others on a counter-shaft, the bearings of which were fitted to the same slide block moving vertically in guides which carried the ball bearings for the axle, so that the centres of the two shafts were always relatively at the same distance from each other. A large gear wheel on the axle geared always with and was driven by a small pinion on the counter-shaft. The straps

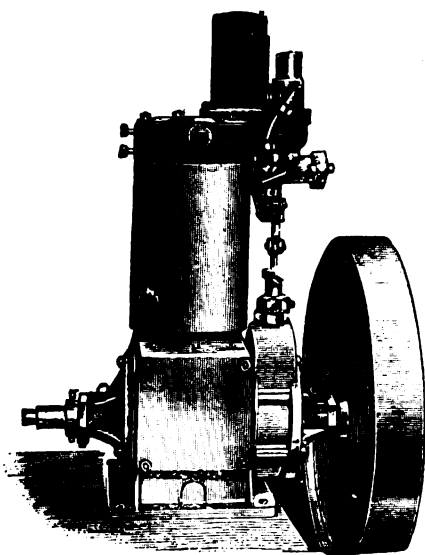


FIG. 13.

connecting the crank-shaft pulleys with the counter-shaft pulleys were both normally loose, and whichever speed it was desired to use, one of two jockey pulleys tightened the one strap and still further slackened the other.

Fig. 13 shows the motor used on this vehicle. This was a single-cylinder vertical motor of very simple construction. The cylinder was  $5\frac{1}{4}$  in. diameter and 6 in. stroke, and was tested frequently in the shop before fixing to the vehicle frame. It gave about 2.75 h.p. on the brake at 400 revolutions, and ran with great steadiness and freedom from smoke or smell. It required some months of the closest attention and labour to make it run in the same way on the car. No doubt the power was the same, but the vibration of the vehicle, and the giving of the springs, affected the accuracy of the measurement of the oil feed, and in this way prevented that perfect combustion in the motor which was obtainable when bolted to a solid foundation. The most careful attention and adjustment also were required to make the inertia governor behave in about the same way on the vehicle as when working stationary. These difficulties were, however, surmounted, and the vehicle ran very successfully for two years, and covered some thousands of miles. From the running of this carriage, the author came to the conclusion that rather less vibration would be caused by a horizontal motor than by a vertical one, which opinion was afterwards justified in his adoption of the horizontal form.

(To be continued.)

## SOME AMERICAN STEAM-DRIVEN MOTOR-VEHICLES.

By HORACE L. ARNOLD.

CAN a steam boiler and engine be so applied to a mechanically-propelled carriage for use on common roads as to produce a light, commodious, speedy, and elegant vehicle for the transportation of two or four persons?

This question the writer, who has had an intimate personal acquaintance with steam boilers and engines of high and low degree for about half a century, and who has given a large part of his time for the past three years to a consideration of the many varied and perplexing problems involved in the production of the satisfactory motor-vehicle, has always answered confidently in the negative. The bulky and heavy boiler, the constant and large supply of water, and the large, hot fire demanded by a steam engine of sufficient power to drive a motor-carriage strongly, seemed to form unfavourable and wholly unavoidable conditions of steam road wagon driving of such magnitude as to place the steam engine outside the list of possible contestants for popular favour in this service.

It was therefore with the greatest surprise that the writer examined a group of steam motor-cars recently developed in Boston and its immediate vicinity, and found them to exhibit, collectively, all the essential features of the ideal automobile.

These essential features may be specified as follows:—Light weight, small demands on the attention of the driver, total absence of noise or odour of any kind, abundant driving power, and perfect ease of management.

No single one of these Boston steam-vehicles embodies all these ideal features, but there is no apparent reason why each of them should not have all the virtues possessed by any one of them.

The four of these Boston and the vicinity steam carriages which are here illustrated and partly described were made as follows: By George E. Whitney, East Boston, who began work on steam motor-vehicles in 1885, partly built one machine, and then let the matter rest until 1895, when he began again and had his first carriage (weight 650 lb.) on the road in October, 1896, and has since built and sold several others—no two alike, and all considered highly successful; by William B. Mason, founder of the Mason Regulator Company of Milton, Mass., who began his first steam carriage in 1885, sold it when partly completed, and began the car here shown



in July, 1897. This was placed on the road October 4th, 1898: by the Stanley Brothers, the well-known and extensive manufacturers of photographic dry plates, Newton, Mass., who began the construction of the vehicle here shown July 6th, 1897, and had it on the road in October, 1897. They have nearly completed a second wagon for four passengers, and have undertaken orders for a large number of vehicles: and by A. T. Cross, the well-known pencil-case and stylographic pen manufacturer, of Providence, R.I., who began the construction of his steam carriage in October, 1897, and first ran with it on the road in March, 1898.

So far as the writer is aware, H. S. Roper, of Boston, was the first to build a steam road-carriage in or near that city. Roper began perhaps as early as 1870, or even before that time, to experiment with automobiles. He used coal for fuel and built one very successful steam car, weighing 410 lb., having a vertical tubular boiler only 10 in. diameter, coal fired, which attracted much attention and ran in some races against horses. Roper brought out many inventions, and was a very skilful and ingenious machine constructor. He began making a steam bicycle in 1895 or before, and fell dead from this machine in a friendly speed contest with the cyclist Nat Butler on the Charles River cycle track, June 1st, 1896, at the age of 72; his death was due to heart failure. As Roper fired with coal he was unable to closely regulate his steam pressure, and when he had a fire started he was forced to run his carriage or blow his steam off at the safety valve; he was also forced to stop his car and alight to mend the fire. While the Roper carriage lacked many essentials of the ideal motor-vehicle, it was light, quick, and powerful. His steam bicycle ran the mile inside of two minutes, and is said to have weighed about 186 lb.

Whitney, as a young mechanic, did some work for Roper on his motor-cycle boiler, and was very familiar with all that Roper did in the way of steam carriage construction. Whitney afterwards went into business for himself as a yacht engine constructor, and thus became an expert in light steam boiler and engine designing. Whitney and Mason were young mechanics together and intimate friends, and each owned a steam yacht, and it was quite natural that both should begin the construction of steam motor-vehicles in 1885. More serious duties claimed their attention, and the production of a complete steam carriage was long delayed by both.

The Stanley Brothers are not practically trained engineers, but have wealth, mechanical instincts of the highest type, energy, and self confidence, and established an extensive factory so soon as they fully decided upon their model carriage. Their idea is to furnish two passenger vehicles weighing 400 lb. empty, at 600 dols. each. Whitney has so far made all his wagons to order, at prices varying up to 2,000 dols. His inventions are covered by patents which are in the hands of a strong company, and the Whitney steam carriages are expected to be soon placed in commercial manufacture. Mason built his carriage, which is a model of elegance in form and finish, for his own amusement. It weighs about 425 lb., and has cost about 1,200 dols. Cross also built his steam vehicle for his own pleasure. His carriage weighs about 1,800 lb., and cost about 1,500 dols.

The writer has ridden on the Cross, Whitney, and Stanley carriages, and can speak with confidence of their performances. As the Mason car has a Stanley boiler, built by Stanley, and a Stanley burner, it will probably give about the same results on the road as the Stanley carriage, its weight being about the same. Whitney's vehicles are much heavier than the Stanley and Mason cars, and show their weight in hill climbing. The Whitney, Mason, and Stanley boilers are all practically equal, having shells 14 in. diameter, fitted with something over 300 half-inch copper tubes, each 13 in. long, very thin No. 20 B. and S. gauge. The Stanley and Mason burners use vaporised gasoline for fuel, and the fire is controlled by the Mason regulator, which is actuated by the boiler pressure, and holds it practically constant, the regulator operating on less than half a pound of boiler pressure variation.

Some of Whitney's vehicles have had the fire under the control of the Mason regulator, but that on which the writer rode did not have the regulator, and the boiler was fitted with a pop safety valve, which frequently operated. The Stanley boiler, designed by Stanley, is extremely strong, testing to 1,000 lb. hydraulic pressure. Stanley and Mason carry steam to about 130 lb., and their safety valves are set at 150 lb., being prevented by the regulator from ever operating. If the regulator should fail, then the safety valve would of course become useful.

(To be continued.)

## MOTOR-CAR ACCIDENT NEAR LANCASTER.

AN accident, alleged to be due to the negligence of a drunken driver of a motor-car, took place on the Lancaster and Kendal highway at Slyne, three miles from Lancaster, on Sunday evening. The driver, James Robinson, belonging to Leeds, in the employ of the Lancaster and Morecambe Motor-Car Company, was brought upon Tuesday on a warrant before the Lancaster County Magistrates and charged with having been drunk whilst in charge of the motor-car. Superintendent Cocker stated that on Sunday evening the prisoner was in charge of a car containing eight young Lancaster men, which was returning after an outing from Carnforth. On passing through Slyne village it was noticed that the car was travelling at a furious speed, and that the driver was drunk. The car went down Slyne Brow at the rate of from eighteen to twenty miles an hour, and there is a dangerous turn at the bottom of the hill. In the opposite direction, Mr. W. Jackson, mace-bearer to the Lancaster Corporation, was walking with his wife and three children, the youngest, an infant, being pushed in a basinette by Mrs. Jackson. The motor-car came suddenly around the corner and ran on to the footpath, colliding with the basinette, which was smashed to pieces. The baby was knocked over its mother's head a distance of four yards. The child was severely cut about the face, and Mrs. Jackson was bruised about the shoulder and arm, and suffered from shock. Both were conveyed home and medically attended. The motor-car was brought into Lancaster by another driver, and information given to the police, who arrested the prisoner at the railway station on Monday. Evidence having been given, the prisoner was remanded until Saturday, bail being allowed in the prisoner's own recognisances of £25 and one surety of £25.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

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## COMMENTS.

**A**S the time for the opening of the great International Exhibition at the Agricultural Hall, Islington, on July 3rd next approaches, so it becomes more and more certain that the success prophesied for it will be fully reached and even surpassed in some measure. Practically the whole of the space on the ground floor has been allotted already, and there remains only a few small scattered spaces, which are all under consideration by various firms, and are certain to be finally allotted. In the galleries the allotting of spaces is also well forward, and new applications continue to be received daily. Practically the whole of the British manufacturers of motor-vehicles have secured space, and several interesting novelties in the form of new vehicles and new motors will be exhibited.

Foreign firms, especially French houses, will also be well represented, although the unfortunate clashing of the French Automobile Exhibition has prevented the attendance of some firms who originally intended to have their vehicles on exhibition in this country.

### Our Commercial Efficiency Tests.

THE series of commercial efficiency trials to be carried out in connection with the Agricultural Hall Exhibition is being received with great favour. Entries are coming in daily in every class, and there appears every probability that the whole of the fourteen classes will be well represented, whilst the 15th division for the longest "non-stop" run on one charge has received a very large number of entries. It is undoubted that the public are becoming tired of mere motor-car "parades." They look upon these gatherings simply as a means of enthusiasts meeting to display their vehicles before the critical eyes of their fellow-enthusiasts. The public as a body learns little or nothing from such a gathering; they may be interesting to the enthusiasts who take part, but such displays do little to educate the public up to the fact that motor-vehicles are not fads but furnish practical means of carrying passengers or transporting goods at rates far below those ruling for similar services by horse-drawn vehicles. It is for this reason that our "commercial efficiency trials" have been projected. We hope by these trials to demonstrate in a manner appealing to all commercial men that motor-vehicles will accomplish tasks day by day, without repairs or breakdowns, that are utterly beyond the capacities of horse-drawn vehicles.

### The Speed of Motor-Cars.

UNLESS some of the most enthusiastic automobilists are extremely careful their present practice of proceeding at high rates of speed through towns and villages will so bring automobilism in disrepute that further laws restricting

their rate of progression will become inevitable. We are not amongst those who hold the opinion that the rates of speed at present allowed are sufficiently high under every circumstance, but as the Legislature lays down a restriction on the speed we do hold that such speeds should not be exceeded. Notwithstanding the fact that the Automobile Club make public announcements that they deprecate drivers proceeding at greater speeds than those within the legal limits, fairly loud whispers have lately been heard that these limits have been far exceeded on several occasions on the Club's tours, and that on more than one occasion actual racing, with all its concomitants of bent heads to avoid wind pressure, has been carried out between several of the cars. The desire for greater and greater speed is the natural result of taking part in motor-vehicle touring; this has been proved in the past in France, and English automobilists are now passing through a similar feverish state. We have lately been assured by several makers that their recent customers are all demanding vehicles capable of progressing at much higher speeds than those formerly demanded. For the advantage of all concerned it would be better to considerably moderate these speeds until the Legislature is induced to enlarge the present limits of speed; even then, however, those automobilists who have the welfare of the industry at heart would do well to reduce their speed to the lowest convenient limit when passing through closely inhabited districts.

### A Loss to English Automobilism.

AT the present moment there are far too few gentlemen in England connected with automobilism either as a business or as a pleasure that the loss of one of their number, even temporarily, can be looked upon with equanimity. English automobilists will therefore regret to hear that one of the most respected of their body is leaving England for some time, let us hope with a view to his ultimate and not too long delayed return. Mr. C. J. M. Instone, in his official capacity as secretary of the Daimler Motor Co., has secured the respect of all who have been brought into contact with him on business matters; his strict commercial integrity and invariable courtesy and politeness transformed the transacting of even a disagreeable business matter into a pleasurable undertaking. In his private capacity, as an enthusiast in automobilism, his pleasant personality endeared him to all who had the privilege of his acquaintance; his knowledge and experience were always at the service of those less experienced or in a difficulty, and if a breakdown occurred Mr. Instone was always ready to sacrifice his own pleasures and comforts in the endeavour to help forward a brother-automobilist. For reasons into which there is no occasion to enter, Mr. Instone has thought it best to resign his official position in the undertaking of the Daimler Motor Co., and has determined to spend some time in France amongst the best motor-car manufacturers in order to increase his already extensive technical knowledge. Let us hope that his return may not be unduly delayed; but whenever it may occur he is, we are convinced, assured of a ready welcome from the large body of English automobilists who value his acquaintance and esteem his friendship.

**Clean Cities.**

THE *Engineering Magazine*, one of leading technical journals published in the United States, views automobiles from the point of view of the sanitary efficiency arising from their use. In a recent issue our contemporary remarks:—"The development of the automobile, accompanied with the increasing use of asphalt paving, is leading to serious discussion of the possibility of maintaining clean streets in great cities by preventing the accumulation of dirt rather than by removing it after it has been permitted to collect. By far the larger part of the dirt which fouls the streets of a city, creating a frequent nuisance, and impairing the health of the residents, is due to the presence of the horse. It might be an interesting experiment to forbid all horses for a given time upon certain asphalted streets, permitting only automobiles and bicycles, in order to observe the length of time which might safely be permitted to elapse before cleaning. It is not at all improbable that the time may come when horses and other animals will be forbidden in the streets as rigidly as they are now barred from public and private gardens; all the transportation in cities being accomplished mechanically and the horse being relegated to the country, to the great advantage of both man and beast. The clean city could doubtless thus be secured, not by cleaning it, but by preventing it from ever becoming dirty."

**A New Utilisation of a Motor-Car.**

THE constant increase in the number of mechanically-propelled vehicles in the streets of the French capital have suggested new uses to which they can be put, both of the tragic and felicitous order. We read, for instance, that an attempt at suicide has just been recorded, the rashly-disposed person throwing himself under the wheels of one of these vehicles driven at full speed along a little-frequented road. The result of this attempt, however, was absolutely the contrary to what might have been anticipated, since the would-be suicide received not the slightest injury, whereas the unfortunate occupant of the car, which was upset, was thrown a considerable distance and severely injured. It appears that when the author of the accident picked himself up, in presence of one or two bystanders, he expressed savagely his annoyance at having failed to kill himself, and even greater annoyance at being arrested on a charge of attempting to cause the death of the gentleman in the motor-car.

**Restrictions of Speeds of Motor-Vehicles.**

THE Eastern District Committee of the County Council, meeting at Falkirk on the 11th inst., decided to consider their powers with a view to the regulation of the speeds of motor-vehicles in their district. A member of the council stated that it was a matter for surprise to him that there had been no serious accidents in the district from this cause. He stated that whenever the cars came to a declivity they ran down as if they were tobogganning, and it really became a serious matter both to pedestrians and people driving on the country roads. Several members substantiated Mr. Hunter's statements, and pressed for an immediate inquiry into the committee's powers in the matter in order that the likelihood of the occurrence of accidents should be avoided by the issuing of restrictive regulations. At Whitechurch (Reading) the Rural District Council have decided to recommend the regulating of the speed of motor-cars through their district to eight miles per hour. Is this the result of the Automobile Club's visit to this district on its Easter tour? At Basingstoke, on the other hand, the proposal to restrict the speed of cars to eight miles per hour was received with ridicule and ultimately rejected, one member of the council remarking that restricting them to eight miles per hour was nonsense, and would result in their extinction! Bravo, Basingstoke!

**Motor-Car Accident.**

AN extraordinary motor-car accident happened at Egham Hill about 5.20 on Friday evening, by which Dr. William Playfair, the eminent obstetric physician, of 38 Grosvenor Street, W., was injured. The car was a four-wheel dog-cart, driven by a Benz motor, and was being taken for a trial trip to Dr. Playfair's country house at Winchfield, with a view to ultimate purchase. The doctor was in front with the driver, and his daughter and his niece, Miss Lucy Playfair, daughter of Lord Playfair, sat behind. When part way up Egham Hill, and just opposite the residence of Dr. Beresford, a local practitioner, the driver found it necessary to change to the lower gear, but upon doing so from some cause the mechanism failed to act, and the car commenced to run back. The light brake was first applied, but, proving inadequate for the gradient, recourse was promptly had to the more powerful one. This stopped the back wheels so suddenly that the front part of the car reared straight up, and shot all the passengers into the road. Fortunately, the driver was little the worse for his spill. The ladies sustained no harm beyond a bruise or two, and were able to lift the car and drag Dr. Playfair and the driver from under it. The doctor received such a hurt to his back that it gave him great pain to be moved. He was carried into Dr. Beresford's surgery, where he was attended to by the assistant, Mr. Sherwen. It appearing, from a cursory examination, that no bones were broken, a rubber-tired cab was procured, and the patient, with Mr. Sherwen accompanying, was conveyed to his own home. The motor-car was but very little damaged. It was ascertained that Dr. Playfair's injuries were not serious, and he expects to be all right in a few days.

**Motor-Cycle Racing at the Crystal Palace.**

THE Crystal Palace Company have promoted a series of motor-cycle races on the track for decision on Whit-Monday. The programme includes a 20-miles scratch race for those riding machines capable of running a mile under two minutes; a 10-miles scratch race for those riding machines outside the mile in two minutes average; a 1-mile handicap for the riders of machines of the first-mentioned class; and a similar event for those riding machines of the lower speed. Gold, silver, and bronze medals will be awarded for each event. The Crystal Palace Company, recognising that the Motor-Car Club is the only body officially controlling motor racing on the track, is running the meeting under the Club's Racing Rules, have entrusted the handicapping to the Handicapping Committee of the Club, and are employing the Club's official timekeepers. We are informed that the entries are numerous in each event, and that it is confidently expected that the records created at the Motor-Car Club's meet on the 6th inst. will be broken. The employment of the Club's official timekeepers at these meetings is, of course, necessary, as the Club refuses to recognise records unless claimed by its official timekeepers and made at meetings run under the Club's rules.

**The Motor-Car Club's Summer Runs.**

THE Motor-Car Club's week-end summer runs commence, we understand, on June 3rd. We are informed that programmes have been drawn up, so that those participating can take part on the Saturday only, or can continue their tour with those enthusiasts who prefer to extend their journey over Sunday. We understand that thirty cars will take part in the first run. The Club is also promoting a motor-vehicle paper-chase. This event is not intended as a road race, as the Club does not countenance such performances, but is simply designed to take the competitors over an unknown and not previously determined course. The trail will be laid by a gentleman whose knowledge of main roads and their numerous diverging by-roads is particularly extensive, and we understand that medals will be given to

those competitors who traverse the whole course without over-shooting any turn therein.

#### The Automobile Club's Tour.

FROM information received from Mr. Johnson, the secretary, we understand that the Whitsuntide tour promoted by the Automobile Club is likely to be one of the most successful of the Club's many excursions at holiday periods. It is to

be hoped that the participants will be favoured with better weather than was the case with the lately-held tour to Frensham, and also that greater success will attend it. In relation to this tour we are informed that, with the exception of Mr. S. F. Edge on his car and Mr. Capel on his De Dion tricycle, no vehicle succeeded in completing the out-and-home journey. Certainly the conditions of weather and roads were execrable, but this should not account for the large number of vehicles failing to complete the journey. We understand that those taking part in the Whitsuntide tour are as follows: Mr. Alfred Bird and Mr. Roger W. Wallace, Q.C. (Chairman); Mr. Frederick R. Simms (Vice-Chairman), Mr. Bryan Donkin, Mr. Hankinson and Mr. E. Lefebure; Mr. F. H. Butler and Miss Butler; Earl Russell; Mr. Estcourt and Mrs. Estcourt; Mr. Michael and Mrs. Michael; Mr. Lyons Sampson and Mrs. Lyons Sampson; Mr. S. Beevor and Mrs. Beevor; Mr. R. W. Buttemer and Mrs. Buttemer; Mr. H. H. Sturmeay and friends; Mr. J. A. Holder and Mr. R. B. Bird; Mr. John R. Hargreaves, J.P., and Mrs. Hargreaves; Mr. W. P. C. Wills and Mrs. Wills; Mr. William Hurst; Mr. Robert E. Phillips; Mr. Campbell Muir and friend; Mr. Staplee Firth, Mrs. Staplee Firth, Mr. Andrew W. Barr, Mr. A. C. Poole, Mr. H. F. Julian, Mr. C. Johnson (Secretary), Mr. Montagu Pilcher, Mr. G. H. Warne and Mr. Worby Beaumont; Mr. and Mrs. C. Cordingley and Miss Pursehouse; Mr. Mayhew and friends; Mr. J. A. Gretton and friends; and Mr. Capel.

#### The N.C.U. and Motor Racing on the Track.

THE fight between the Motor-Car Club and the N.C.U. in regard to the desire of the latter to control or license riders in motor-cycle or motor-car racing, has resulted in the N.C.U. retiring from the untenable position

which it first assumed. Motor-carists generally had no wish to interfere with the N.C.U. in its control of cycle races when the riders were *paced* by motor-vehicles, as this was simply utilising the employment of mechanical power in order to get as much as possible out of the muscular developments of riders of ordinary cycles. But the Motor-Car Club was the first in the field to protect the large, growing body of motorists from the overpowering kindness of the N.C.U. in endeavouring to control the sport of motor-racing on the track, or in carrying out time tests. It is by its endeavours, and by plainly showing that it would submit to no interference from the N.C.U., that the latter body has receded from its former position. In its work of seeking to restrain the N.C.U., we are informed that the Motor-Car Club politely approached the Automobile Club with a request that the two bodies might work in unison, but that no satisfactory reply was received, excepting an intimation that the Automobile Club was "conferring" with the N.C.U. on the matter. Whilst the Automobile Club was "conferring," the Motor-Car Club was "conquering," and by its action brought about some amelioration of the conditions which the N.C.U. wrongfully sought to impose. There is no doubt that this was appreciated by the Automobile Club, for we have received from the secretary the following communication, with a request for an allusion to it in our columns:—

#### THE AUTOMOBILE CLUB AND MOTOR RACING.

Considerable correspondence has recently appeared in cycling and automobile journals as to a proposal by the National Cyclists' Union to control motor racing.

The committee of the Automobile Club, after a conference with the representatives of the National Cyclists' Union, took this matter

into careful consideration, and arrived at the decision that as the mechanical element is undoubtedly the most important factor in the propulsion of motor-driven vehicles, the use of muscular power in races or time tests of every type of motor-vehicle cannot bring the vehicle within the definition of a cycle. It was thereupon resolved that the Automobile Club of Great Britain and Ireland, with which is incorporated the Self-propelled Traffic Association, being the only independent authority in this country recognised by public officials and the Continental Automobile Clubs, constitutes itself as the recognised authority to regulate and control all automobile races, competitions and time trials in Great Britain and Ireland. In accordance with this decision a letter has been addressed by the Automobile Club to the National Cyclists' Union stating that, in accordance with the suggestion of the representatives of the National Cyclists' Union at the conference held at the Automobile Club on March 16th, the Committee of the Club have decided that the Club should take upon itself the responsibility of regulating and controlling motor races, competitions, and time trials. The Automobile Club will now proceed to prepare rules affecting motor racing, and they invite all those interested in this matter to submit by letter addressed to the Secretary at the Automobile Club, 4 Whitehall Court, London, S.W., suggestions for the consideration of the Committee.

We are, as is well known, quite in accord with the general aims of the Automobile Club, and recognise that some head authority is necessary to look after the interests of the automobilists of the kingdom. We regret that we cannot support, however, the position which the Automobile Club has sought to take up in regard to the control of motor racing. It assumes that it is the only independent authority in the country, but this is most certainly not the case. Apart from the Motor-Car Club, there is a large body of automobilists who are not members of the Automobile Club, and the Club's endeavour to constitute itself the *sole* authority, without appeal, is an assumption of authority which it does not possess. On looking over the list of members of the Automobile Club we cannot find that it includes more than two gentlemen who are track racers, and on examining the names of those constituting its committee we fail to find more than a similar number who are in truth properly qualified to frame rules for track racing. The position of the Automobile Club is untenable, and we are sure that the large body of track-racing automobilists beyond its membership will not consent to be bound by any rules which the Club may frame on its own initiative. If the Club desires to partake of the work in controlling motor-cycle racing, it must consent to work with other bodies. In this connection we may mention that the Motor-Car Club has already formulated its rules for governing this class of sport, and several races have already been run under these rules, and champion performances recorded. If the Automobile Club desires to assist in controlling this sport, as it has a perfect right to do, its better course would be to form a Motor-Car Racing Union with those bodies and persons who are not amongst its members. It is only by such a course that satisfaction can ultimately be given to all concerned. Another point in the Automobile Club's circular shows how weak is the Club's position in this matter. After announcing that the Committee has decided to draw up rules, it proceeds to intimate that this body will be glad to receive suggestions for these rules *from those interested*. This confession and acknowledgment that the Club desires to receive the help of outside persons emphasizes the untenability of the Club's assumption that it can control all automobilists in the kingdom.

AN electric cab company has been formed in Toronto by Geo. A. Cox, H. H. Fudger, A. E. Ames, and others, which will build horseless carriages in the shops of the Canada General Electric Company, Peterborough, Ont., under the Fischer patents.

IN connection with their extensive dairy farm at Worsley, near Manchester, the trustees of the Duke of Bridgewater have commenced a service of motor-cars for the distribution of their milk in Manchester and the surrounding districts. The motive power is petroleum spirit, and the experiment is proving highly successful.

## London's Electrical Cabs.



FIG 1.—GENERAL VIEW OF THE COMPANY'S VEHICLES PARADING IN STREETS ADJOINING DEPÔT.

ALL Englishmen concerned in the motor industry are willing to concede to France the premier position in the revivification of the self-propelled vehicle; but, at the same time, it is frequently overlooked that in regard to vehicles propelled by means of electric current taken from storage batteries the credit for the first vehicles commercially successful is properly due to England. Both France and America soon afterwards produced electrically-propelled vehicles, but these did not reach ultimate success until some time after many of England's capitalists had recognised the probable success of electrical vehicles for "hackney" services. In America their utility for this purpose was recognised soon after England had led the way; and the productions of the brains of native inventors, Messrs. Morris and Salom, were made use of to demonstrate the fact. In no other country, however, have the electrical vehicles of native invention been used as commercial hackney carriages. In France the inventions of Englishmen are used, as is also the case in Germany; the vehicle of one French inventor has, however, been granted a licence to ply for hire as a hackney vehicle, but these cabriolets of Monsieur Jeantaud are, we believe, only two in number. In Berlin, as in Paris, the Bersey and Brougham English inventions are used, whilst the Oppermann system is also employed in the German capital. London was the first in the field in regard to motor-vehicles plying for public hire, and to England's capital is due the credit of first utilising an industry commercially, which, although much more advanced in France, had hitherto been restricted to providing carriages for private owners.

The London Electric Cab Company, Ltd., was the pioneer concern in providing the public with motor-cabs. Many prophecies were made that the Company's operations would not result in a financial success, and many recent observations in the press would lead the public to believe that the Company's vehicles had been withdrawn from the streets because they were both imperfect and were operated at a heavy monetary loss. As a matter of fact, however, the success of the Company is assured, as it was from the first, given good management and reasonable utilisation of acquired knowledge. The difficulties of inaugurating a service of public

vehicles were many, and we are afraid were not sufficiently appreciated either by those responsible for the early working of the Company nor by those critics who expected that an entirely new departure could at once be brought to a stage of earning profits, when, as a matter of fact, those guiding the new undertaking were practically working in the dark and without the illumination to be gained from the light of other persons' previous experiences. The undertaking was new, the difficulties encountered and to be overcome were new, and the whole of the servants employed in the carrying on of the work were entirely new to the work. Experience was impossible; there existed no field in which experience could be gained. Therefore, although the Company's first year's work was conducted at a loss, it is not surprising that this was the case, and moreover its possible success was discounted from the fact that it was unable to use a sufficient number of vehicles to reduce the standing or establishment charges to a reasonable limit *per capita* owing to the impossibility of securing them.

The Company was inaugurated on "Motor-Car Day," November, 1896, but it was not until August, 1897, that it was able to place a finished vehicle on the streets. Difficulties were experienced in obtaining deliveries from the coach-builders, who on their parts had an entirely new type of vehicle to design, which had to withstand strains and shocks practically beyond any experience gained in designing other types of vehicles. Battery makers were unable to give immediate delivery of cells capable of giving the output and possessing the necessary length of life, and the makers and patentees of the motors were unable to deliver them in sufficient quantities. Wheel makers were unable at first to produce a wheel with sufficient strength, whilst tire makers, notwithstanding their specious arguments, were utterly unable to produce a tire having a reasonable life even though it had but a low efficiency.

On August 19th, 1897, Mr. W. H. Preece, C.B., F.R.S., presided at the gathering of 5,000 persons which collected to see the sending out of the first fourteen vehicles. Within two months twenty vehicles were on the streets, and a little later thirty were plying for hire. No sooner were the



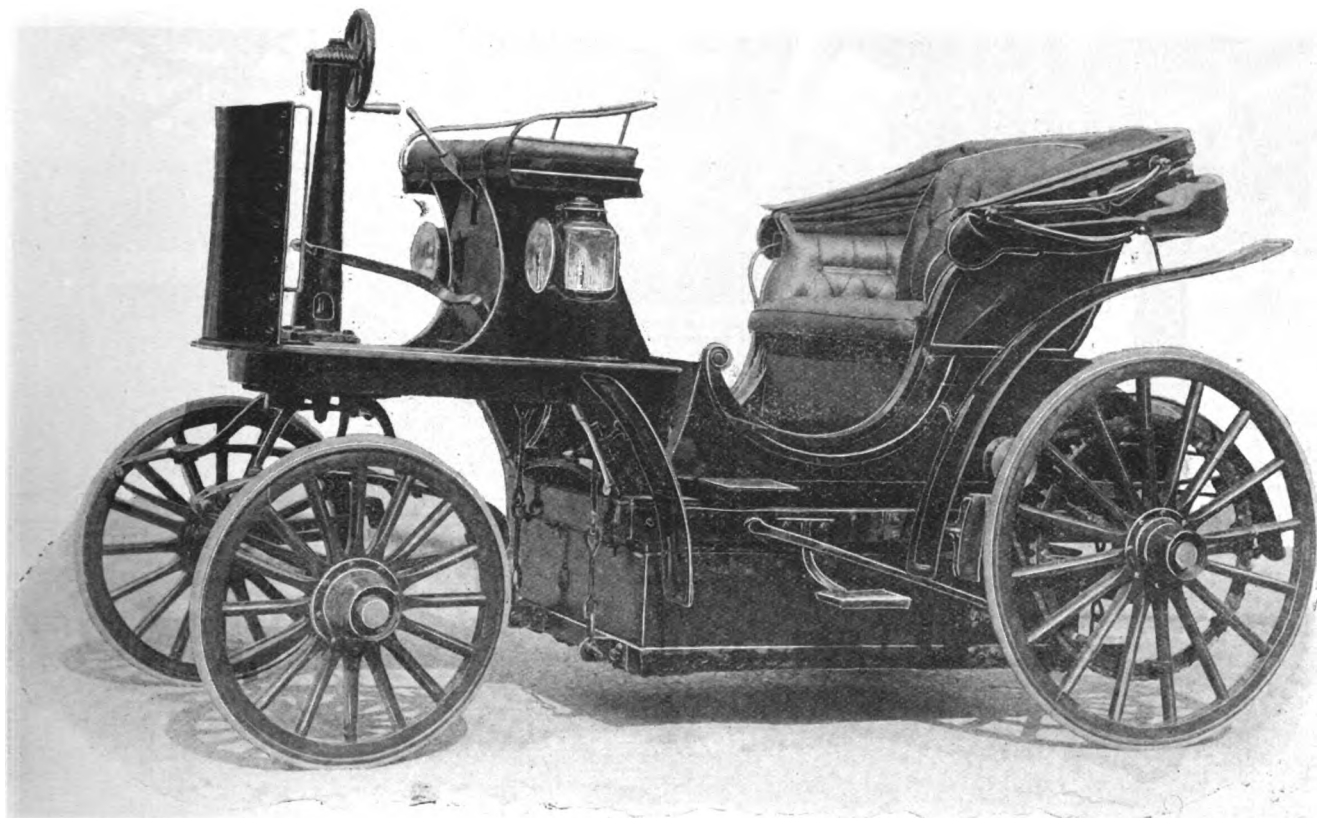


FIG. 2.—THE LONDON ELECTRICAL CAB COMPANY'S NEW VICTORIA FOR PRIVATE HIRING.

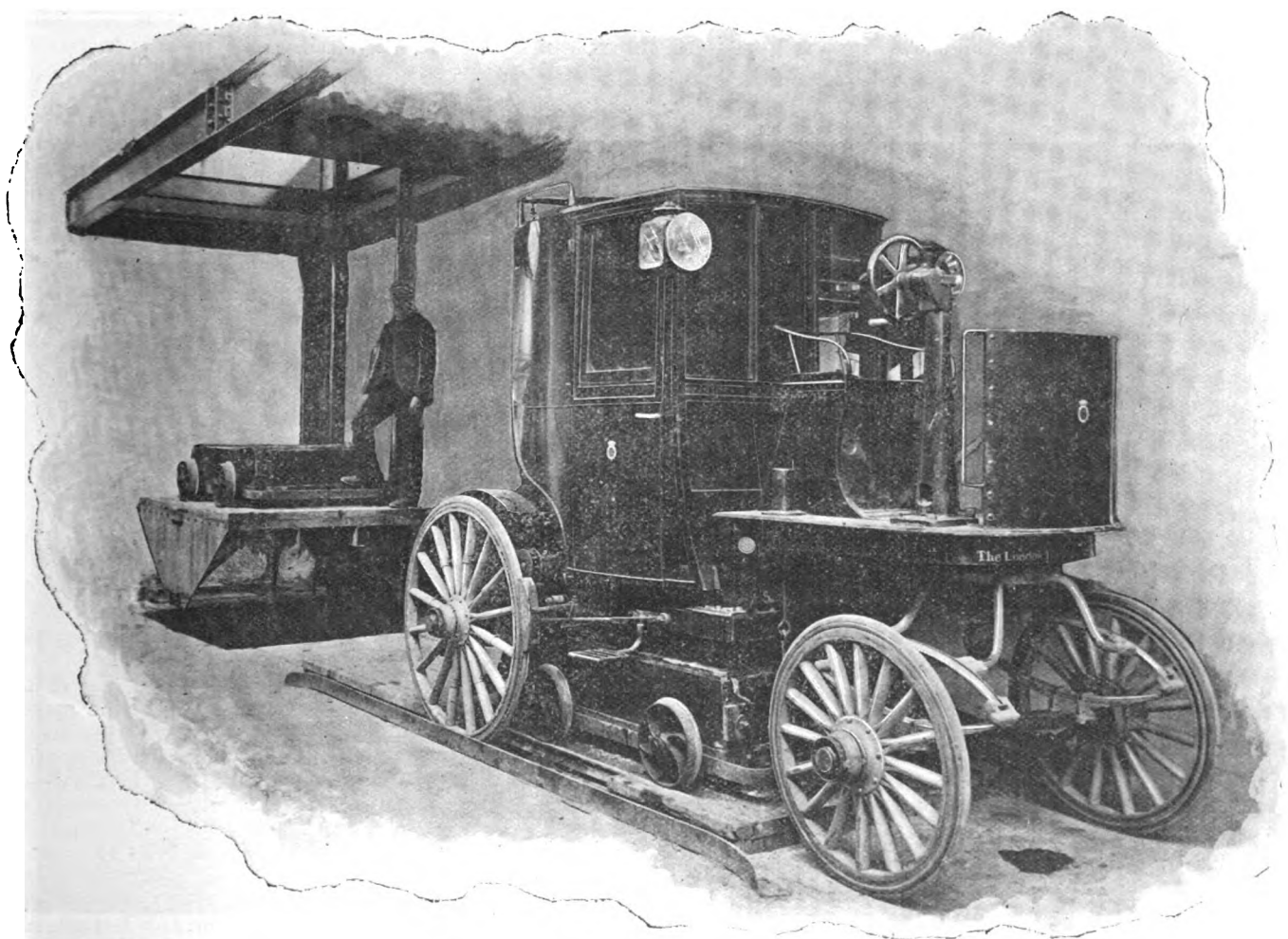


FIG. 3.—CHANGING A CAB'S BATTERIES AT THE DEPOT OF THE LONDON ELECTRIC CAB CO.

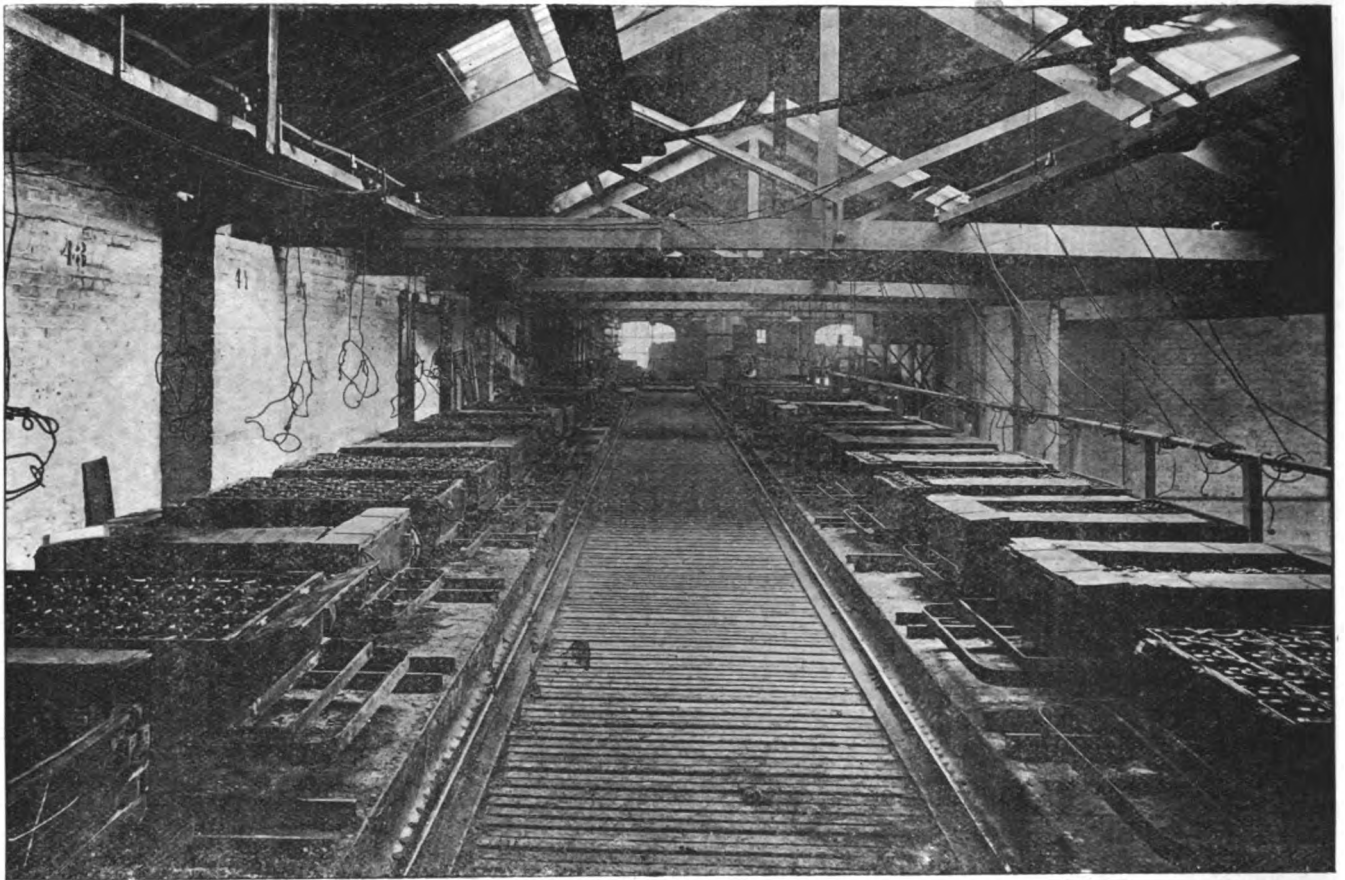


FIG. 4.—ONE OF THE LONDON ELECTRICAL CAB CO.'S BATTERY CHARGING GALLERIES.

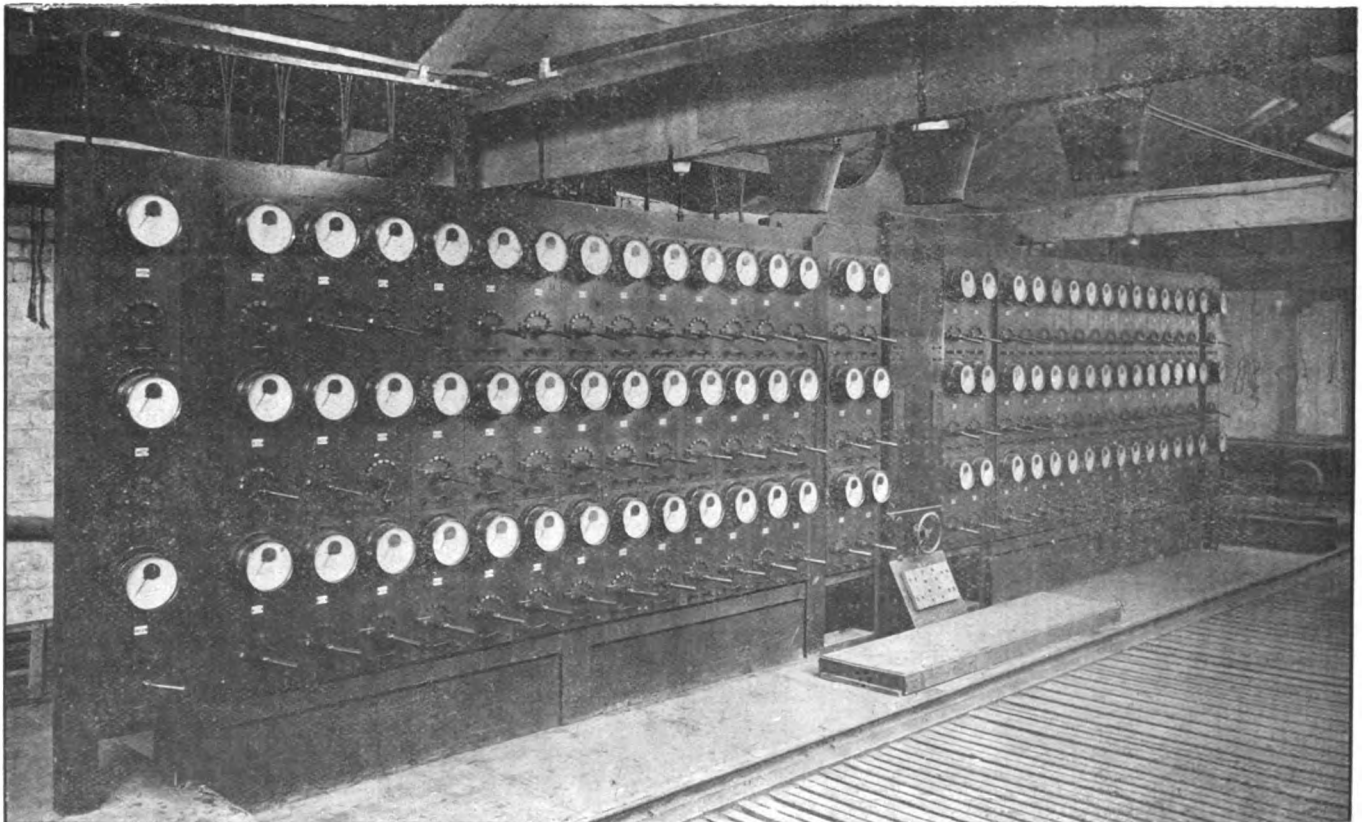


FIG. 5.—CONTROL SWITCHBOARD IN THE LONDON ELECTRICAL CAB CO.'S CHARGING GALLERY.

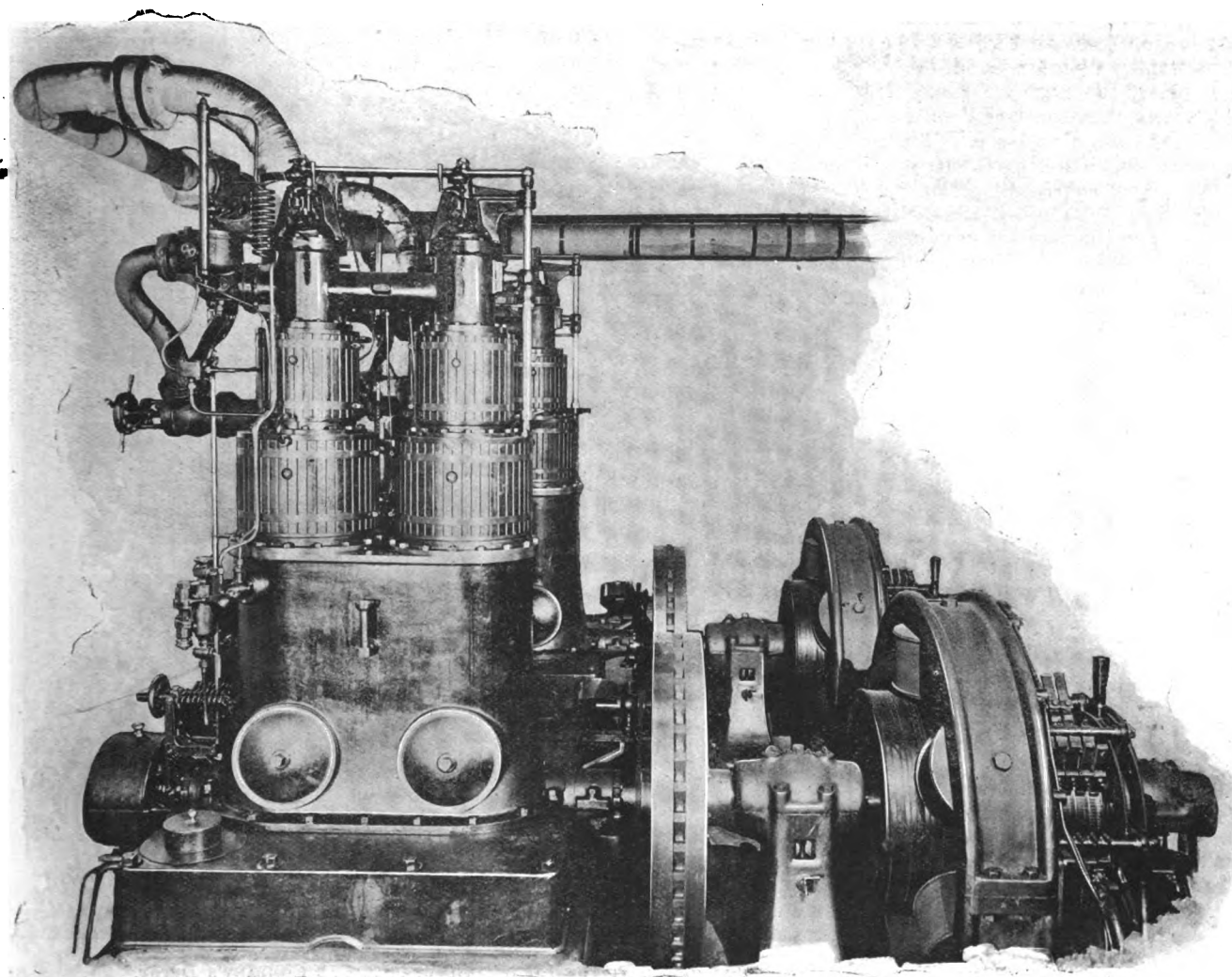


FIG. 6.—A GLIMPSE OF THE LONDON ELECTRICAL CO.'S GENERATING MACHINERY.

cabs on the streets and in constant hard work than difficulties and unexpected flaws commenced to be developed. Perhaps the greatest difficulties arose from the tires. Almost every description of tire was tried and all were found wanting. Pneumatics were of no use owing to the weight they had to carry and the heat consequently generated, which impoverished the rubber on the inside of the tire. Solid tires of several makes and mixtures of various materials were tried one after the other, but with no satisfactory results until recently. The driving chains connecting the road wheels to the power shafts gave trouble owing to their pinions becoming clogged with dust mixed with the lubricating agents employed. Wheels proved faulty, lacking ability to withstand the heavy strains, whilst the batteries, by reason of inherent defects and inadequate charging facilities, also gave considerable trouble.

The non-success of the initial efforts of the Company were, therefore, primarily due to three causes: 1st, imperfect wheels; 2nd, imperfect tires; and 3rd, imperfect batteries and means of charging the same. The original arrangements for charging the batteries were eminently unsatisfactory. The Company at first arranged to take their current from the London Electric Supply Co.'s mains as a "day load." For this purpose two sets of Thomson-Houston motor-generators were employed to transform the alternating current supplied by the Lighting Company into continuous current for charging the batteries, it being thought that the transformation of the 2,400 alternating current to low-pressure continuous current could be effected with an efficiency of about 86 per cent. The result was disastrous, as the "day load" of the Company only existed between the inconvenient hours of 2 a.m. and 10 a.m.,

consequently it was always necessary to use a large amount of current at the higher price of 4d. Even the "day load" charge of the Corporation for current was 3d. per unit, and as the motor-generators did not prove to operate at the supposed efficiency, the cost of current was increased to 4d. per unit.

Then, again, the drivers of the vehicles gave some considerable trouble. Originally they were paid a wage of £2 per week, and were supposed to pay in the whole of their takings, bonuses and prizes being offered for the highest sums paid in. This did not answer well; the drivers may have paid in all their takings, but in most cases these takings were small. Subsequently the cabs were let out to the drivers at rates per day corresponding to the Asquith rules applying to Hansom cabs, but even this did not prove quite satisfactory owing to difficulties previously mentioned in regard to giving the batteries a full charge, and, as a consequence, drivers were quick to take advantage of this known defect, and were continually returning to the yard with a tale to the effect that "their batteries were exhausted, although they had only run to the extent of (say) six shillings in fares"! Strikes, too, were frequent, and the first officials of the Company being unused to the specious wiles of the London cabman, the Company suffered financially accordingly.

Ultimately, a considerable number of these difficulties were overcome, and some experience having been gained as to the success likely to accrue under the new conditions, a bold step was decided on. This was no less than the calling in during March last of all the Company's vehicles then on the streets. Immediately this was done the daily newspapers, and also some of the technical journals, were filled with



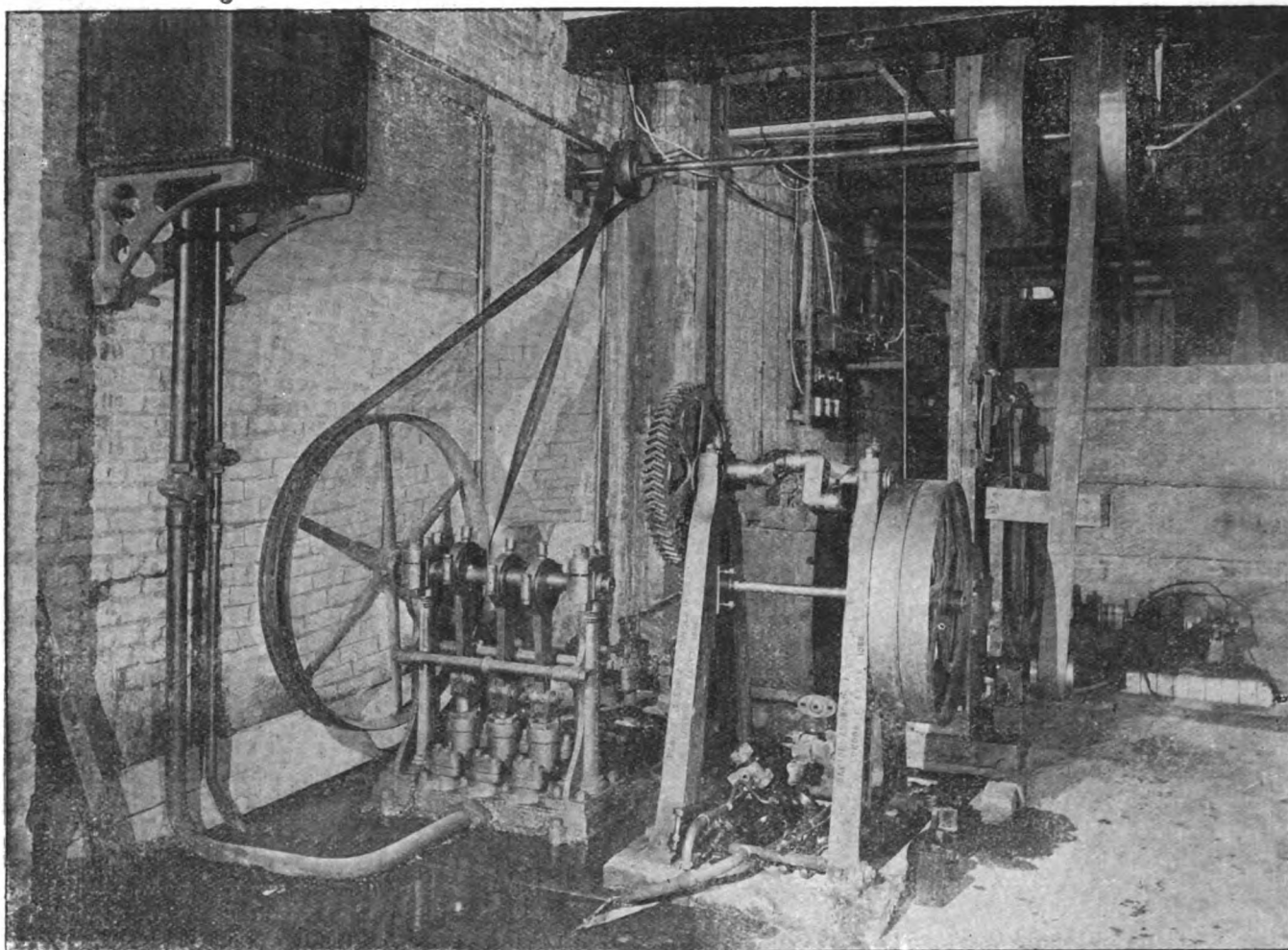


FIG. 7.—PUMPS FOR FURNISHING HYDRAULIC POWER AT THE LONDON ELECTRICAL CAB COMPANY'S DEPÔT.

paragraphs anent the withdrawal of the vehicles owing to the Company's non-success in working. It unfortunately was not recognised that it was only on the Company's becoming assured of the success of its future operations that this step was taken; it was taken solely with a view of improving the vehicles and their equipment, and so correcting defects that the public could hire a really perfect vehicle, and with a further view to "commission" fifty new vehicles, constructed on the improved principles developed by past experiences. These are now quite ready. The fifty new vehicles, together with the thirty partially reconstructed cabs will on Wednesday next parade the West End and City streets to prove that, although the Company has been quiet, it is not yet dead, nor has it been sleeping.

It is thought that at last a satisfactory tire has been secured, together with a wheel sufficiently strong to withstand the strains experience has proved to be customary. Stronger springs have also been fitted to all vehicles, and the rim brakes previously adopted re-inforced by band or drum brakes. The method of steering has also been improved, and several important general improvements effected in the cabs as a whole.

The whole of the depôt and charging-station arrangements have been completely re-modelled, extended and improved. The inefficient motor generators have been removed, and the unsatisfactory arrangement of obtaining current from the lighting authority's mains discontinued. The Company now generates its own current, a complete equipment of the highest-known efficiency having been installed. This comprises two independent sets of generators, which can be worked together if necessary; the equipment consists of two Babcock and Wilcox boilers of 300 h.p. each, and two sets of 200-h.p. Willans' engines direct-coupled to General Electric

Co.'s continuous current dynamos. These are shown in Fig. 6. In addition, a Parson's turbo-generator of 12 h.p. is used as a day plant when the large installation is not running, and this also furnishes current for lighting and shop power. The large plant is capable of charging one hundred sets of batteries at one time, and, as instance of the economy effected, the cost of current per B.T.U. is now 1d., as against 4d. under the old method of supply.

The depôt itself has been more than doubled in size. It previously afforded accommodation for fifty batteries of cells, it now has two galleries which can accommodate one hundred batteries at one time. The ground-floor space has been more than doubled, and there is now storage room for 150 vehicles. The means of transferring discharged batteries from the cabs to the charging galleries and for conveying and attaching new batteries to the vehicles are also increased twofold.

It will be remembered that the battery of cells furnishing current is carried, on links attached to compression springs, under the body of the vehicle. The method adopted in removing the discharged battery from a vehicle and replacing it with a new set is illustrated in Fig. 3 and is as follows: The cab with its discharged cells is run into a "dock," the floor of which is a hydraulic lift slightly less in width than the wheel gauge of the vehicle, and somewhat longer than the wheel base. This lift is capable of rising only the few inches which exists between the ground level and the bottom of the battery tray. A wheeled trolley is run on to the lift, and this being in a position exactly under the tray of batteries the lift is raised until the trolley comes in contact with the battery tray, and the whole battery is thus lifted until it no longer rests on the links from which it is ordinarily suspended. The link-pins are withdrawn, and the lift immediately descends to the floor level carrying the batteries on the wheeled

truck. The truck with its burden is then run on to another hydraulic lift; this conveys the batteries up to the charging floor, as is shown in the illustration, Fig. . On reaching the charging floor the truck carrying the batteries is run transversely on to another wheeled truck which travels on the rails shown in Fig. 4, depicting one of the charging floors. It is then conveyed to its proper station, the first wheeled truck travelling over the short transverse rails shown on the raised platforms on each side of Fig. 4. A full set of batteries on its truck is then placed on the gallery trolley and conveyed to the gallery lift, which descends to the ground floor with its burden. The battery on its truck is next conveyed to the "dock" lift under the cab, and this lifts it to its required height and position under the cab; the links are attached to the tray by the pins, the dock lift descends, and the vehicle is then ready for another run of thirty-two miles. Each battery consists of forty cells of the E.P.S. type with a capacity of 150 ampère hours, and carrying current at eighty volts. These batteries when fully charged have a guaranteed mileage efficiency of thirty-two miles. Each cab is provided with two sets of batteries.

The hydraulic power for operating the lifts is furnished by a set of electrically-driven pumps shown in Fig. 7. There are two sets of three-throw pumps, one set by Waygood and the other by Easton and Anderson, Ltd. They are driven by a 7-h.p. shunt-wound motor, current being furnished either by main plant or from the day plant when the former is not running. Both sets of pumps are connected up to a pressure accumulator, having a 6-in. ram with 8-ton load for maintaining pressure. One of the switch-boards for controlling the charging of the various batteries is shown in Fig. 5. It has 100 sets of switches, meters, and resistances, the charging of the whole 100 sets of batteries being controlled by one man.

A complete workshop has been fitted at the dépôt, all machine tools being electrically driven. The Company do the whole of their fitting and repair work, except heavy castings.

The cabs are equipped with  $3\frac{1}{2}$ -h.p. motors of the Johnson-Lundell type; by grouping the cells in series, and in parallel, five forward speeds and one backward speed are provided. In addition to the band and rim brakes, the use of which cuts out the current, an electric brake is also provided as an emergency brake. The series-parallel control switch and the general arrangement of the mechanical details of the vehicle are manufactured under the Bersey and Brougham patents.

When originally constituted the directors of the Company were the Hon. Evelyn Ellis, the Hon. Reginald Brougham, and Messrs. H. H. Mulliner (chairman), H. R. Paterson, and J. H. Mace, whilst Mr. Walter C. Bersey was manager. In October, 1898, Mr. Bersey resigned his position as manager, his place being taken by Mr. J. G. Statter, whilst Mr. Bersey became consulting engineer to the Company. In January of the present year, at the special invitation of the then directors, the Hon. Reginald Brougham, Capt. W. Simpson, and Messrs. G. A. King and J. H. Mace, Mr. Bersey accepted the position of chairman and managing-director, the services of Mr. Statter being dispensed with, and the whole business being worked under Mr. Bersey's personal supervision.

Of the eighty cabs which will be put in service on Wednesday next several will be kept for private hiring and will not bear the ordinary police-license plates. These are specially and luxuriously fitted as private carriages and will be hired out for the hour, day, week, or any other period desired. The remainder will be licensed vehicles and will be rented to drivers at the ordinary Asquith award rates for horse-drawn Hansom cabs. Amongst the vehicles reserved for private hiring are several Victorias. One of these is illustrated in Fig. 2. Fig. 1 gives a general view of the eighty vehicles of the Company formed up in line before starting on their parade through the London streets.

Experience has proved that with the new arrangements the cabs can be run at a profit, and the Company's officials

state that, given the possibility of securing the services of licensed cab-drivers, there is now no fear of the Company's ultimate financial success. We cordially wish these pioneers in public motor-vehicles the success which their undertaking deserves, and as the directors and their friends have personally taken up the greater part of the recently issued debentures it is quite evident that they are willing to back their beliefs in the venture by thus investing substantial sums in the undertaking. All difficulties appear to have been surmounted, and so far as human foresight and experience can provide, the success of the undertaking is assured.

## MOTOR-CARS ON THE CONTINENT.

### Public Motor-Conveyances in France.

A NEW public automobile service for the conveyance of passengers and goods has just been authorized by prefectural order between (1) Hyères and Giens, following the great communication road, No. 42, and its junctions; (2) Hyères and the seashore, following successively the great communication road, No. 42, and the ordinary parochial road, No. 11, of Hyères parish; (3) Hyères, Toulon, and Ollioules; and (4) Hyères and the following localities: La Londe, La Valette, Sainte-Marguerite, Le Peadet, La Tarède, Solliès, Pont and Cuers.

### Paris-Zurich Record.

OUR contributor, M. Dick Farman, proposes himself to establish before long the touring record from Paris to Zurich. He left Paris on Thursday, May 11th, at 8 a.m., and covered the following itinerary: 1st day—Paris, Melun, Sens, Croyes, Bar-sur-Aube, Chaumont; 2nd day—Chaumont, Langres, Vesoul, Belfort, Bâle; 3rd day—Bâle, Zurich.

### The Swiss Automobile Club.

HAVING in view the fact that the Swiss Automobile Club has only been organized six months and a half, the state of its membership shows that the institution is thoroughly prosperous. At a recent sitting of the Committee it numbered 13 honorary members, 109 active members, and 50 foreign members. The Club accepts ladies as members, but the Committee has recently decided that only the wives, mothers, sisters, daughters, or relations of the male members would be accepted.

### Marot-Gardon Cup.

THE Marot-Gardon Cup, over a course of 100 kilometres, was contested last week. The start took place at 2 o'clock exactly, fourteen competitors taking part. The outward fifty kilometres were covered by Girardot in 59 m.  $2\frac{1}{2}$  s. In the return run Girardot gave up at the eightieth kilometre. Tampier was then leading, but he was overtaken at the ninety-fifth kilometre by De Madec. The times were as follows:—First, De Madec, 2 h. 3 s. (Aster motor); second, Tampier, 2 h. 45 s.; third, Ricard, 2 h. 1 m. 31 s.; fourth, De Méaulne, 2 h. 6 m. 14 s.; fifth, Oury, 2 h. 6 m. 39 s.; sixth, Boureau, 2 h. 8 m. 25 s.; seventh, Greterin, 2 h. 16 m. 28 s.; eighth, Cormier, 2 h. 36 m.

### Marseilles Races.

ON the occasion of the races organized by L'Union Vélocipédique de Provence, automobile competitions were held on the Gardanne-St.-Maximin-Pourceux-Gardanne Road, about 73 kilometres. The results were—Motor-cars: 1st, Mèry, 2 h. 2 m. 57 s.; 2nd, Gras; 3rd, Ripert. Motor-cycles and voitures: 1st, A. Lebrun, 2 h. 2 m.; 2nd, Camoin; 3rd, R. Lebrun.



### More Accidents In France.

LAST Saturday, at about 7 a.m., M. and Madame Peignies, of Boulevard du Roule, Neuilly, were driving a motor-carriage from Corné to Angers, when M. Peignies transferred the control of the vehicle to his wife. Of course, as usually happens with inexperienced novices, the lady wished to proceed at a higher speed than was conducive to safety, and as a result the control became difficult, owing to her inexperience, while going down a gradient of 1 in 14. During the descent the carriage encountered a large stone on the road, and was immediately overturned, M. and Madame Peignies being both violently thrown out upon the rough road, and seriously injured. Madame Peignies especially is reported to be in an alarming condition. The motor-vehicle is entirely wrecked by the violence of the shock, and quite out of use.

### Draguignan Races.

THE motor-carriage races to be held at Draguignan on May 21st are expected to be very brilliant, although at the time of writing the entries are not very numerous. Up to the present date the following names have been booked: For motor-carriages, Messrs. Chauchard (of Nice V.C.), Gilbert (of the Marseilles A.C.), and Turcot-Méry; for motor-cycles, Messrs. Jouan Frères (Grasse), Muraour (Grasse), Mercadé and Engelfred (Nice).

### The Moscow- St. Petersburg Race.

A MOTOR-CAR race between Moscow and St. Petersburg is to be held in Russia from June 6th to 13th. The race will be run with a halting-place in Wichin-Wolstchok. All kinds of motor-vehicles are permitted to take part. The registering fee is 20 roubles and 5 roubles for each passenger, beside 25 roubles which will be returned if those who enter take part in the contest. The prizes consist of gold and silver medals.

### The French Kilometre Record with Petroleum Spirit Motor-Vehicles.

M. LEFEBVRE, who at Achère has beaten the record of M. Loysel, though not accomplishing the time of M. Lemaitre at Nice, requests us to point out that M. Lemaitre's times do not constitute a record, not having been officially chronometered, and the route not being quite level. M. Lefebvre is thus in possession of the records until somebody else does better. Doubtless Mons. Lemaitre will soon enter a challenge.

### "La Coupe des Motocycles."

THE contest over 100 kilometres, organized by the French Automobile Club, was run on Sunday, the 14th inst., on the road from Orléans to Vierzon. Although the race commenced at a point somewhat far from Paris it proved interesting, as thirty-five competitors, whose names are below, entered for the contest:—1, Noé Boyer (Béconnais); 2, Delaugère (Romain); 3, Et. Giraud; 4, L. Girardot; 5, V. Oury; 6, A. Darracq (Marcellin); 7, A. Darracq (Willaume); 8, Ph. Marot-Gardon; 9, Ph. Marot-Gardon (Caron); 10, Société Française des Cycles Automobiles Liberator (Gasté); 11, de Dion-Bouton (Rolland); 12, Société Commerciale d'Automobiles (H. Tart); 13, de Dion-Bouton (Teste); 14, de Dion-Bouton (Bardin); 15, de Dion-Bouton (Osmont); 16, Coutand (Renaux); 17, Coutand (Siollac); 18, L'Idole (Searle); 19, L'Idole (Vignaux); 20, L'Idole (Théodore); 21, Roguet; 22, Williams; 23, Mariot; 24, Macon; 25, Delaugère; 26, Wilfrid; 27, Echalié; 28, Vasseur; 29, Deckert; 30, Thévenet; 31, Voigt; 32, Comiot; 33, Perfecta (Géo); 34, Degrais; 35, P. Huguet. The winner holds for one year the cup which Baron de Zuylen

presented for this contest two years ago. The cup becomes the competitor's property if he wins it twice. Up to this time MM. Leon Bollée and P. Marot have each held it once. The contest was won by Béconnais on a Noé-Boyer tricycle, fitted with an Aster motor. He covered the 100 kilometres within 1 h. 46 m. 12 $\frac{3}{4}$  s., which beats all French records on road or on track. Béconnais made the 50 kilometres back within 49 m. 7 s., a wonderful average speed of about 61 kilometres per hour. The result was as follows: 1, Béconnais (Aster), 1 h. 46 m. 12 $\frac{3}{4}$  s.; 2, Osmont (De Dion), 1 h. 48 m. 42 s.; 3, Teste (De Dion), 1 h. 50 m. 38 s.; 4, Renaux (Coutand), 1 h. 51 m. 38 s.; 5, Bardin (De Dion), 1 h. 52 m. 12 s.; 6, Williams, 1 h. 54 m. 30 s.; 7, Vasseur, 1 h. 54 m. 44 s.; 8, Tart (Soc. Commerciale), 2 h. 0 m. 8 s.; 9, Romain (Delaugère), 2 h. 4 m. 10 s.; 10, Caron (Marot-Gardon), 2 h. 5 m. 40 s. It will be seen that all these racers have made an average of more than 40 kilometres per hour, which is very good travelling upon the road.

### The French Automobile Club's New Home.

THE palatial premises of the French Automobile Club are now almost completed, the extensive alterations and decorations having occupied several months. The club premises are what were formerly known as the Plessis-Bellièvre mansion, facing on to the Place de la Concorde, and situated next door to the Cercle de la Rue Royale on the one side and to the Union Artistique Club, familiarly known as the Epatant, at the corner of the Rue Boissy d'Anglais on the other. These premises were purchased for £60,000, and the work of transforming them into the new home of the Automobile Club is already well-nigh completed, although the members have been in occupation of certain suites of rooms for some time. The frontage of the mansion, a fine specimen of palatial Louis XIV. architecture, has not been altered, but the interior arrangements and fittings have been completely remodelled and brought up to date. The ordinary club rooms include offices occupied by the Syndicate of Automobile Industries, a technical library, and exhibition halls. The basement will be taken up by a workroom for repairs, to and from which vehicles will be conveyed by lifts. On the ground floor storage is provided for 200 motor-cars. The upper stories are devoted to club life, and to the social side of existence. One of the chief attractions of the Automobile Club is its dinners, followed by the evening cigar on the terrace surmounting the roof, a kind of hanging garden, whence one of the finest views in Paris is obtained. From here the visitor can view the Place de la Concorde and the Champs Elysées brilliantly illuminated, the Seine lit up with coloured lamps, and the city stretching beyond wrapped in a faint phosphorescent glow. The Automobile Club will, however, provide also, for those who find looking at scenery a little slow, amusements of another kind. The proposed theatre on the first floor is still in course of construction, but will soon be completed and opened. Besides performances, lectures will be given, and next year the Universal Automobile Congress will be held there.

THE Pope Manufacturing Co. have made arrangements for the care of their electric carriages at Narragansett Pier and Newport, R.I. A number of the summer residents in both places own Columbia electric vehicles, and accordingly arrangements were entered into with the Newport Illuminating Co. and the Narragansett Pier Electric Light and Power Co. to furnish facilities for recharging batteries.

BEFORE Mr. Justice Cozens-Hardy, in the Chancery Division on Wednesday, the petition of E. J. Morris for the winding-up of the Universal Motor-Carriage and Cycle Company was allowed to stand over to the first petition day in next sittings, counsel for the petitioner not having had an opportunity of considering the evidence filed by the Company in opposition to the petition.

## SCOTTISH NOTES.



### The Management of Public Services.

A VERY sensible letter, which is worthy of the attention of all interested either in the management or as shareholders in the numerous motor companies recently formed, from the pen of Mr. S. F. Edge appeared in *The Motor-Car Journal* of May 5th on the subject of the "Care of Public Motor-Vehicles." Mr. Edge's description of some of these cars which he recently inspected reminds me of early days of the motor-car services in Scotland. It appears that the same lack of care of the vehicles which marked the institution of this new business in the North is being repeated in the South. Mistakes, no doubt, must be looked for at the outset in an entirely new industry, but I had expected that the manufacturers, who have by this time had considerable practical experience, would have insisted above everything else that the vehicles they put out were placed in competent hands and kept under intelligent supervision. It is undoubtedly true that the inexperienced expect too much of "the motor-car." They expect the vehicle to be ready at any and all times, and by the simple turn of a handle to go on for ever, or at least as long as they require it, and it should need no attention whatever. I have always considered it a great mistake of certain makers who assure intending purchasers that their motor-cars "require little or no attention" and that the necessary knowledge of their management can be acquired in so many minutes. It would be much better for both seller and buyer were it made perfectly clear that a motor-car required a great deal of care and attention. The buyer would put himself about to understand his motor and would devote time to acquire the necessary technical knowledge of its principles, and mechanism, which alone can give him the confidence he desires and the satisfaction he expects from his machine. I would earnestly advise the directors of all concerns running or intending to run motor-vehicles to see that sufficient time is allowed for the daily cleansing and overhaul of their conveyances. If it is usually too late at night to have the cars washed and examined and there are no men on night duty, it will pay to reduce the number of daily runs to allow of this being done. It is absolutely imperative, after running all day and covering a distance of sixty, seventy, or eighty miles over uneven and often rough road-surfaces that every bolt, nut and joint should be looked to. Neglect of this may lead to accident, and certainly does lead to an extraordinarily rapid depreciation. Unless motor-vehicles are as fairly treated as, say, a railway locomotive there is bound before very long to be dissatisfaction all round and much injury done to a promising business. Motor-running companies can and do yield good profits, but this is and will only be the case where the cars receive the highest consideration. I have dwelt on this subject at some length because from my knowledge of the early experiences of those conducting this class of business in Scotland I have come to the conclusion that this is the one outstanding point which requires the most exacting attention, or the results within a year's time or less will be deplorable; those companies which are just now, as Mr. Edge puts it, "starting so gaily" will suffer severely and be tempted to give up the motor-car in disgust—the motor-car getting all the blame, of course—unless due attention is paid to the timely warning of Mr. Edge.

### Motor-Cars in Glasgow.

Two very handsome motor-carriages have during the past week or so been running in Glasgow, everywhere creating a very favourable impression both on account of their design and their quiet-running qualities. Mr. Sleigh (of Rossleigh, Ltd.), on his ivory-white Stirling-Daimler, has been a good deal in evidence in the city, and I have heard many highly favourable comments from quite

unexpected quarters. The other motor-car which attracted attention in Buchanan Street, Sauchiehall Street, and elsewhere was an elegant mail phaeton in which Mr. John Stirling was this week making his business calls in the city. This had a style and character which impressed one at once. Its design was artistic and pleasing, and there was a decidedly substantial appearance about it. A few more well-appointed cars such as those just mentioned seen on the streets of Glasgow will certainly speedily convert many who I have heard object to the motor-car because of its inartistic appearance.



### Edinburgh Post Office and Motors.

THE authorities at the Edinburgh Post Office have for some time been investigating the subject of motor traction for postal work, following the example of the officials at St. Martin's-le-Grand. The Madelvic Motor Carriage Company, Ltd., of Granton, have been awarded the contract for carrying the mails between the General Post Office and Leith. On Sunday last the service was successfully inaugurated, when the first mail van left the General Post Office for Leith at 4 p.m. and worked back within the hour, picking up bags all the way from the pillar-boxes. This is the second motor-car used by the Post Office authorities in Scotland. The first was introduced about a year ago, carrying the mails between Inverary and Ardrishaig, a distance of about thirty miles. The car used was a Daimler, built by Messrs. Stirling, of Hamilton, for the Glasgow Motor-Car Company. The van which started this week in Edinburgh is propelled by an electric motor. The chief points of interest in the construction of the vehicle is that it is built on a strong frame of steel tubes, and the motor works directly on the leading axle. To outward appearance the body of the van resembles those in use for mail purposes now, except that it is mounted on steel wheels with bicycle spokes. In front of the driver is a large case containing the accumulators. This is attached to the framework which carries the motor and front axle, and in steering the whole turns in answer to the helm. The accumulators, motor, and driving wheels take the place of the fore-carriage of the ordinary vehicle, and form, in fact, a tractor. The van can be turned round in a very short space, which makes it particularly suitable for City traffic. The body is painted Post Office red, and picked out in black and gold, the panels being emblazoned with the royal arms of Scotland and the royal monogram surmounted with crowns. A large crowd of interested citizens turned out to see the first run of this van, which I am informed is guaranteed to carry over 10 cwt. of mails. For trial purposes few routes could have been found more difficult than the long incline from Leith to Edinburgh, ending in the steep Leith Street ascent. I hope the trials will be successful, and that the Post Office may see their way to extend their motor mail services.



### The Queen's Birthday.

THIS holiday in Glasgow was fixed for Thursday last, and I learn from the motor hiring concerns in the West of Scotland that a considerable number of Glaswegians spent it on motor-cars, a noticeable feature, I am told, being that parties who tried the motor-car for the first time last year, this year booked their orders a long way ahead in order to secure a repetition of their pleasurable experience of a year ago.



### The Scottish Club.

THE committee which was appointed to consider the advisability of convening a public meeting in connection with the proposal to form a Scottish branch of the Automobile Club met on Wednesday, 10th inst., at the chambers of Messrs. Mitchell & Smith, Glasgow. From the

support which was promised, the committee felt justified in at once proceeding with the arrangements for a public meeting of autocarists and others interested in the motor-car movement in Scotland. The proposal is being enthusiastically taken up, and in the course of the next few weeks the Scottish Club will, I believe, be an accomplished fact. A circular is in course of preparation, and will be issued shortly, calling the proposed inaugural meeting.

#### A Spin on a Pennington.

LAST week I had another opportunity of sampling the new Pennington motor, and from the way the small single-cylinder machine pulled with three heavy men aboard I am made to wonder what the "twin-motor" will accomplish. It travelled on the level at certainly fifteen miles an hour, and one hill ascended would be about 1 in 15, which was mounted half-way on the high gear. I was more than ever impressed with the unique points in this machine, and so soon as large numbers get into use they are sure to be very popular. They are light, simple and handy, and are sold at a reasonable price.

#### A Forth Bridge Char-a-Bancs.

THE motor service between Edinburgh and the famous Forth Bridge is, I learn, to be augmented this summer, the Madelvic Motor-Carriage Co., Ltd., promising a large electric char-a-bancs. The route last year was served by the Edinburgh Autocar Co., who ran their motor-brakes with considerable success, receiving the support of a large number of tourists and others.

#### Aberdeen to London and back.

AN interesting account of this long trip accomplished by Mr. Wm. Jackson and Mrs. Jackson, of Thorngrove, Aberdeen, on a Peugeot motor-phæton appears in the *Aberdeen Journal*. "The party have now returned to Aberdeen," says the journal referred to, "after a most enjoyable and unique three weeks' trip. The travellers were most fortunate in the matter of weather, and were not subjected to a single shower of rain until the final stage of the journey between Stonehaven and the Granite City last Tuesday afternoon. The up-journey was accomplished by the east route, and the principal cities and towns through which the motor-phæton passed were Edinburgh, Newcastle, York, Gainsborough, and Huntingdon. The homeward journey by the west route was through Oxford, Birmingham, Manchester, Windermere, Dumfries, Glasgow, Perth, and Aberdeen. The chief reason for undertaking the journey was a desire on the part of Mr. Jackson to test the capabilities of the carriage upon a sustained and prolonged trial, and he now states that he firmly believes that mechanically-propelled vehicles are bound to come more and more into use. Nothing occurred to the carriage beyond some slight inconvenience consequent upon the novel mode of travelling. What did give a little trouble was the impurity of the oil used for promoting the motive power obtained in the course of the journey, and Mr. Jackson states that any one attempting a long run on a motor should see that the oil is drained through a very fine wire mesh or cloth before being put into the tank. Beyond this drawback and two punctures to the tires sustained—one just outside Manchester and another at Denny—no mishaps worth mentioning occurred. No more severe test of the capabilities of the motor could be conceived than that to which it was put on the mountainous roads from Kendal to Windermere, and on to Carlisle. The actual number of hours occurred in running to London was forty-six, and the homeward journey was accomplished in about the same time. The net quantity of motor-spirit consumed was seventy-two gallons, which at one shilling per gallon would amount to £3 12s., or, counting the four adult

passengers, 18s. a head for the journey to London and back to Aberdeen. This in itself is a record, and we do not suppose that this long journey has ever been done at so low a figure, except, perhaps, on a bicycle. Little trouble was experienced with horses. Those engaged in drawing carts or vans took no notice of the strange carriage, but Mr. Jackson states that those in charge of motor-cars would always require to be careful when passing high-spirited horses; but even in that case he affirms if coachmen would only keep their eyes on their own charges instead of on the motor-carriage, little trouble would be experienced. The motor makes a slight noise unusual on the highway, and pedestrians thirty or forty yards in front can easily hear it approaching. Mr. Jackson states that he has ridden and driven horses in India and Ceylon as well as in this country, but declares that the pleasure of driving a nice pair is as nothing compared with the exhilarating enjoyment of driving a motor-car. Horses, he points out, become tired and weary, and this has a depressing effect on the driver, but the motor-car never wearies. On and on it goes, as if some unseen spirit were at its heels. Then it runs quietly into the hotel yard, and needs neither refreshment nor attendance. Five minutes is all that is required to prepare it for a fresh journey. Amidst the teeming traffic of London and Manchester the phæton was piloted with ease. At times it crawled along behind a donkey cart or ran quietly alongside a horse. At a policeman's signal it would draw up at once, or it would enter a doorway where there was only one inch space room on each side between the posts. Of course, the motor takes fright at nothing, and stands quietly at doors when the driver is within. In fact, the motor seems to say, 'Take care of me and I will do everything you want of me.' All along the route the party met with cordial and hearty receptions, and when they arrived at Aberdeen they looked as if they were sorry that the first journey to London and back to Aberdeen was over." This journey is, of course, no more remarkable than many others carried out by private owners of cars, but it demonstrates that the demand for "long trips" is on the increase.

"BROWN HEATHER."

## CORRESPONDENCE.

### THE CONTROL OF THE BENZ CAR ON HILLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will you kindly insert the following query in your next issue?

In driving a No. 2 Benz "Ideal" up a steep gradient, let it be presumed that it became necessary to stop. I understand the method is to stop with the low-speed band on. To do that, of course, the engine must stop. Wanted to know the next mode of procedure. I do not see how engine is to be started again with the band on the fast pulley and the car on an uphill gradient, the driver being alone in the car. An answer to this from some users of Benz cars of this type will oblige an intending purchaser.

London, S.E.,

May 15th, 1899.

Yours faithfully,

R. E. L.

### THE EFFECT OF "JARRING" ON RIDERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have no doubt but that the troubles experienced by Mr. J. E. Tuke on this score have also been felt by other motor-tricycle riders. To my mind the build of the machine is an important factor in the matter of comfort, and whilst some types of tricycles are very comfortable to ride, others are the reverse.

I have been recently trying one of the new multispiral saddles made by Messrs. Brampton, and I must say it is the most comfortable saddle I have ever ridden on for motor work. I would most certainly recommend Mr. Tuke to get

one of these, as I am quite sure it is very much better than any other saddle at present on the market.

I would point out, however, that the finest saddle in the world will not overcome the discomfort attendant on riding a motor-tricycle fast over bumpy roads. My method of riding is to go as cautiously as possible over bad roads, both from a point of comfort and also in consideration of my machine.

Again, I do not know whether Mr. Tuke is in the habit of riding with one foot down and the other foot up, but if he instead rides with his feet equally balanced each way he will find a considerable difference in road vibration.

London, E.C.,  
May 15th, 1899.

Yours truly,  
CHAS. JARROTT.

## SOME AMERICAN STEAM-DRIVEN MOTOR-VEHICLES.

By HORACE L. ARNOLD.

(Continued from p. 160.)

THE Cross steam motor-car is shown in Figs. 1 and 2, general views, and a detail view, Fig. 3, plainly exhibits the Cross engines. The principal particulars of the Cross carriage follow. The fuel used is kerosene, not gasoline. Kerosene is safe, and is always and everywhere obtainable, and in these two points shows advantages over gasoline, although so far very few accidents have resulted from the use of gasoline in motor-vehicles. The weight of the Cross car is about 1,800 lb. The tanks carry fuel for a day's run, and water for one and a half hours. This car is fitted with a

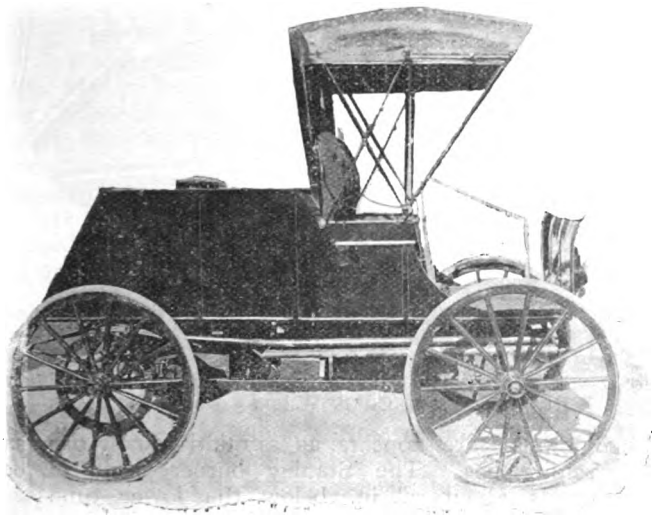


FIG. 1.—SIDE VIEW OF CROSS STEAM CARRIAGE.

surface condenser consisting of 200 feet of "spiral" galvanized iron conductor pipe,  $1\frac{1}{2}$  in. diameter, No. 26 B. & S. gauge, in thickness, arranged in return bends under the carriage body. This condenser saves about one-half of the water used, and has the great advantage of wholly silencing the exhaust and also preventing any visible discharge of steam into the atmosphere. The boiler is of the "Shipman" type, consisting of a vertical water leg, having horizontal "porcupine" tubes, closed at one end and screwed into the water leg, or back, at the other end. The total weight of this Cross boiler and casing is about 450 lb. The burners used were designed by Cross, and the oil admission is governed by the steam pressure. These burners make an audible roaring noise, not, however, so great as to be very offensive. This car has a high rectangular smoke stack, carried up immediately behind the hood, and shown in the side view, Fig. 1, and rear view, Fig. 3; the combustion is not perfect, and a "kerosene smell" is plainly perceptible to the passengers when the wind is from the rear. The regulation of steam pressure is excellent. The engines are a pair of reversing oscillators, having radial valve faces,

and reversing by means of a D-valve, which changes the live steam and exhaust passages. The valve motion is much distorted in order to obtain a cut off at three-quarter stroke the forward motion. This makes the engines very strong when reversed, as the steam follows full stroke. The cylinders are  $2\frac{1}{2}$  in. bore and the stroke is  $3\frac{1}{4}$  in., the same as in the case of the Stanley engines, although Cross had this



FIG. 2.—FRONT VIEW OF CROSS STEAM CARRIAGE.

first information of the Stanley carriage from the writer. The engines are coupled to a  $90^\circ$  double-cranked shaft, which is belted to a divided counter-shaft by four belts  $1\frac{1}{2}$  in. wide, two belts to each division of the counter-shaft. The counter-shafts carry vulcanized fibre pinions twenty-eight teeth, six pitch, which mesh with bronze internal gears of 100 teeth, bolted to the insides of the wooden-spoked driving wheels. The belt pulleys on the engine-shaft are  $\frac{1}{4}$  in. diameter, driving 8 in. pulleys on the counter-shafts. This makes the total

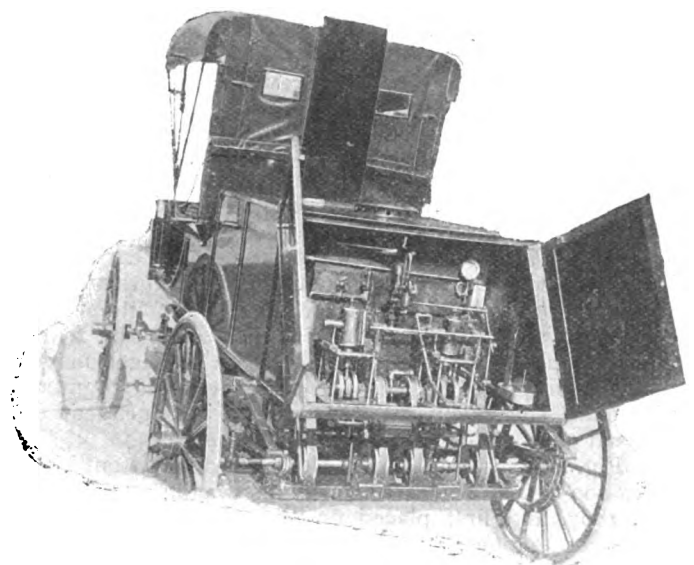


FIG. 3.—CROSS STEAM CARRIAGE, SHOWING ENGINES.

speed reduction from the engine-shaft to the drivers  $7\frac{1}{2}$ . The wheels have wooden spokes and rims, and metallic hubs with plain axle bearings. The tires are solid rubber, by the American Tire Co.,  $1\frac{1}{8}$  in. The tires cost 100 dols. for the four wheels, which are all 38 in. diameter. The gauge is 60 in. and the wheel base is very long, 78 in.

It will be observed that there is no compensating gear used in this wagon; in spite of this the steering appears easy, and the wagon responds very promptly to any motion of the steering lever.

The engines, with their gearing down to the counter shaft, weigh 100 lbs., making the total weight of the motor about 550 lbs. Both engines and gearing are open to light road dust. The best speed is about ten miles per hour. The boiler holds about ten gallons of water and the water tank about twelve gallons of water, which is good for fifteen miles run, and the fuel cost is about two cents per mile. Weight for weight all of these steam carriages use almost nearly the same fuel per mile. The Stanley car will run twenty-five miles on one gallon of gasoline at seven cents, and it weighs 400 lbs., or 700 lbs., say, with two passengers up, while the Cross car weighs, say, 2,100 lbs., or three times as much with two passengers up. The Cross car has all plain bearings while the Stanley vehicle has all ball bearings, even the engine crank-shaft and the connecting rods being so fitted in Stanley's vehicle. The Cross car is of very peculiar outline, as shown in Figs. 1 and 2, which is, from some cause or other, very alarming to horses, while the Stanley and Whitney carriages do not seem to attract the notice of horses in any disturbing degree.



FIG. 4.—STANLEY STEAM CARRIAGE.

The great weight of the Cross car is due to the engine and boiler, which must, of course, be supported by a framework which can carry them safely, and the 2,100 lb. total weight is too much to be placed on ordinary pneumatic tires.

The machinery of the Cross car is all carried on the body of the carriage, which is supported on three full elliptic springs, up to the engines; the engines and counter-shaft are carried on short coiled springs supported on the rear axle. This arrangement gives the boiler a vertical movement independent of the engines, and also gives the counter-shaft pinions a small vertical rise and fall independent of the internal gears carried by the driving wheels.

Fig. 4 shows the Stanley Brothers, of Newton, Mass., in their 400-lbs. steam carriage. This wagon was begun July 6th, 1897, and first placed on the road in October, 1897. The first engines in this wagon were a pair of inclined cylinders by the Mason Regulator Co., 2½-in. bore, and having 3½ in. stroke, link motion; then three more pairs of engines were supplied for this wagon by the Mason Regulator Co., which were over weight according to the Stanley idea, and all four of the Mason engines were laid aside, and the Stanley car is now driven by a pair of vertical engines, 2½ in. bore, with 3½ in. stroke, weighing only 19 lbs., built by J. W. Penny & Son, Mechanics' Falls, Maine. The Stanleys are not engineers, and hence depended

on others for the practical details of their engines. They fixed the weight of the vehicle at 400 lbs., and the pair of cylinders' dimensions at 2½ in. bore by 3½ in. stroke. Mason is a strong advocate of piston valves, while the Stanleys have a leaning towards slide valves, and Mason also believes that a motor-carriage should have a backing motion, while the Stanleys did not think the reversing function essential. The engines now in the Stanley wagon are vertical, of plain marine type, eccentric valve motion, with cut off at five-eighths stroke, non-reversing, and having ball bearings on the crank pins and crank shaft bearings, the pump being driven by a link and beam from one cross head, and having a stroke one-seventh of the piston stroke. There was some trouble with the pump valves at the engine speed, but this has been wholly overcome. Stanley took the Whitney boiler proportions, shell 14 in. diameter, with 306 half-inch copper flues 13 in. long, thickness No. 20 B. & S. gauge. This boiler is gasoline-fired by means of a burner invented by the Stanleys, which gives an absolutely perfect noiseless combustion, the up-take discharge not having any odour whatever, and being wholly invisible. The fire is also invisible, appearing through the fire-box peep-hole as a wavering bluish haze when burning hard.

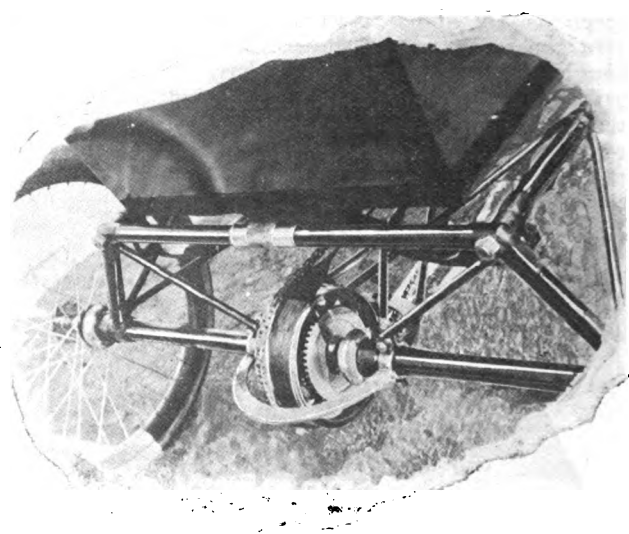


FIG. 6.—STANLEY STEAM CARRIAGE. VIEW OF REAR AXLE, SHOWING REAR OF FRAME, CHAIN WHEEL, AND BRAKE DOWN.

When low the fire appears as a multitude of very small blue semi-globes. The Stanley burner is 1¼ in. deep, and stands about 3¾ in. below the lower tube sheet, and the smoke bonnet on top of the boiler is about 2½ in. high, thus making the total boiler height inside of 20 in.; hence it is very easily placed under the carriage seat. The gasoline fuel is led from the fuel tank where it is carried under 20 or 25-lbs. air pressure through a vapourising pipe, and thence the vapour goes through a passage which may be closed by the Mason regulator-valve to the burner. A by-pass of extremely limited cross-section leads around the regulator valve and keeps the fire alight. So soon as the regulator valve acts to reduce the fire it also opens a large area of cold air entrance to the fire box, which has the effect of instantly checking the steam production. All this makes the action of the Stanley burner exceedingly prompt, and keeps the steam almost exactly at the regulator pressure in the boiler, no matter whether the carriage is labouring uphill or coasting down-hill. The pump delivery is about constant; the regulator is set at about 150 lbs. and the safety valve at 160 lbs. and never blows off; and as Stanley uses no cylinder drainage cocks the boiler feed is always about the same for, say, each ten miles run, and hence the whole regulation of the fire and water are thus automatically taken care of. The Stanley boiler is supposed to carry 8 in. of water above the tube sheet, leaving 5 in. of steam space,



but an inch or two either way in the water level makes no difference, the boiler acting perfectly down to  $1\frac{1}{2}$  in. of water over the lower sheet. Thus the driver of the Stanley car has nothing to do except to steer and handle the throttle valve. A glass gauge seen on the outside of the wagon body (Fig. 4) shows at a glance where the water level is.

The Stanley power transmission consists of a hard sprocket of twelve teeth on the engine-shaft, and a thirty-tooth sprocket on the compensating gear box on the rear axle, as shown in Fig. 6. The chain has  $\frac{3}{8}$ -in. width blocks, hard, and is one of the Baldwin separable type, with hard pins instead of rivets.

The Stanley frame consists of a well-braced girder at each end, coupled underneath by two lattice braces of  $\frac{3}{8}$ -in. round iron fastened at the crossing, while they are connected on top by two composite top bars, having steel tube ends joined by intermediate wooden staves of the same diameter as the tubes, extending between the diagonal bracing of these top bars, as quite clearly shown in the figure of this wagon and of the Mason wagon, which has the same frame precisely. The wooden staves are introduced to give twisting flexibility to the frame, the wheel axles being rigidly supported on the frame, with no direct provision for accommodating the wheels to an uneven road surface, except that of twisting the frame as specified. This makes a cheap and light frame, which is perfectly safe so long as the wooden staves maintain their integrity. For good road surfaces this frame leaves nothing to be desired. The Whitney frame, however, goes far beyond this, and provides in the most perfect manner for accommodating the wheels to road surface inequalities.

The Stanley wagon body is supported by two half-elliptic springs hung by suspension links to screw clips adjustable on the top frame bars. The chain adjustment is obtained by a right and left threaded screw strut, jointed at one end to the yoke of the rear axle support which surrounds the compensating gear, and at the other end to the lower part of the engine frame, in about the plane of the crank shaft. This permits the rise and fall of the engine and small chain sprocket without material change of chain length, and relieves the pneumatic tires of all weight not carried on springs, which is of great importance.

(To be continued.)

LAST week a handsome motor-car was taken to the Yarmouth Town Hall, for inspection by the members of the Watch Committee, preparatory to granting it a licence. It is the property of Mr. W. Miller, and the production of the Motor Manufacturing Company, of London and Coventry. It is intended for pleasure traffic during the summer, and the carriage portion of the vehicle is arranged with cross seats similar to the horse charrs-a-bancs.

THE British Steam Traction Syndicate, Ltd., was registered on May 9th by Hyland & Atkins, 81 Cannon Street, E.C., with a capital of £12,000 in £1 shares. The Company is formed to acquire any inventions relating to the generation, distribution, storage, or application of steam, and the utilisation of steam for traction purposes; to enter into an agreement with William S. Sargeant, and to manufacture, sell, let on hire, and deal in motors, cycles, and vehicles of all kinds.

It would appear that as far as the capital of the kingdom is concerned, Anerley will have the honour of starting the first public motor-car services in its suburbs. Anerley Hill is a well known gradient—so bad, indeed, that tramways are not permitted, and horse-drawn omnibuses are unable to accomplish the ascent. We understand that a Lifu type of steam-omnibus will shortly be placed upon the road, starting from Croydon Road and finishing its journey at Central Hill. The whole of this heavy gradient will thus be possible of being travelled over in a public vehicle for the first time. If this service is successful others will be started at Gipsy Hill, this district presenting similar difficulties.

## THE COSMOPOLITAN CYCLE AND MOTOR WORKS, LTD.



A WINDING-UP order having recently been made against this Company the statutory meetings of creditors and shareholders were held on May 11th at the Board of Trade Offices, Carey Street, Lincoln's Inn Fields. Mr. Winearls, Assistant Official Receiver, presided.

The Chairman stated that the Company was an English Company which carried on a cycle business in France. It was registered on September 20th, 1897, with a nominal capital of £2,000, which was increased in the following December to £60,000. The object of the Company, according to the memorandum of association, was to establish the business of mechanical, electrical, and general engineers, and to acquire by purchase, lease, or otherwise any present or future business in Great Britain, France, Belgium, or any other country authorised by the memorandum. No statement of affairs had been submitted, but the Official Receiver was informed that the only creditors in this country were debenture-holders. The minute book and trading books were in France, and the Official Receiver had obtained possession of the share and debenture registers only. On January 25th, 1898, an agreement was entered into between Mr. Albert Hoster, of St. Nicolas D'Abermont, Seine-Inférieure (who was the vendor), and the Company, whereby the Company agreed to acquire a lease of works, plant, and machinery at St. Nicolas D'Abermont, with all stock and the benefit of all contracts as from October 1st, 1897, and also a cycle business which had been carried on at St. Cloud. The vendor was unable to transfer the latter business, and the agreement was modified, the consideration being reduced from £55,000 to £35,500, payable as to £500 in cash, £5,000 in debentures, and £30,000 in fully-paid shares. The only prospectus issued was dated February, 1898, and it invited subscriptions for £3,900 debentures for the purpose of providing working capital to enable the directors to secure the expansion of the business. On March 30th debentures were issued as follows:—£5,000 to the vendor; £1,070 was subscribed by the shareholders in the Anglo-French Pneumatic Compensation Cycle Company; and £930 was subscribed by the public in cash. The Company went to allotment on April 14th, 1898, when twenty-one shares only were subscribed for. The total share issue amounted to £30,028. No valuation appeared to have been made of the property acquired by the Company. Mr. C. Robson, a director, stated that the property was freehold and belonged to Mr. Hoster, but was subject to heavy mortgages. The business was created by Mr. Hoster, but the Official Receiver was unable to ascertain how long it had been in existence, or whether any accounts of the previous trading were prepared. Mr. Robson stated that he was assured by Mr. Hoster that the business was improving, and that large orders for cycles could be readily obtained. The Company was promoted by Mr. Robson, in conjunction with Mr. Hoster. It appeared that Mr. Robson was one of the promoters of the Anglo-French Pneumatic Compensation Cycle Company, to which the public subscribed about £7,000. That Company proved unsuccessful, and Mr. Robson stated that he was anxious to find a way of representing the sum mentioned in some new company, so that the subscribers should not lose their money. Knowing of the premises occupied by Mr. Hoster, and that he was desirous of turning his business into a company, he entered into negotiations for the sale of the property to the Company, Mr. Hoster consenting to the allotment to the subscribers of the Anglo-French Company of a number of the fully-paid shares agreed to be issued to him, sufficient to give those subscribers an equal holding in the new Company, without any further liability. All the board meetings were held in France, although the registered office of the Company was at 52 Queen Victoria Street, the address of Mr. Robson. In September last proceedings were commenced against the Company in France by French creditors, and under a bankruptcy *fiat* then made a liquidator was appointed, and it was understood that he had sold the assets and surrendered the lease. Although no particulars of the sale had been received, the Official Receiver was informed that a few hundred pounds only had been realized. Mr. Robson had been asked to give particulars with reference to the dealings of the Company in France and the position of its affairs there, but he stated that he was unable to do so. No formal report had been received from the French liquidator, but the Official Receiver had received a letter to the effect that he had placed the papers before the Public Prosecutor at Dieppe with a view to the commencement of certain proceedings against Mr. Hoster. He (the chairman) was unable at present to specify the nature of those proceedings. The French liquidator contended that the debenture-holders had no priority over the French creditors, and it was impossible to state whether their claims had been admitted.

Mr. Robson said he was one of the heaviest losers through the failure of the Company, and he should certainly do his best to obtain some return for the debenture-holders.

The Chairman said there appeared to be no assets to liquidate, but the matter was one which would require investigation.

The shareholders decided to leave the matter in the hands of the Official Receiver, as liquidator, and the meeting of creditors was adjourned *pro forma* for a week.



## "OMNIBUS AND MOTOR-CAR."



IN the Queen's Bench Division on Friday, the 12th inst., before Mr. Justice Day and a special jury, an action was brought by the Automobile Association, Limited, against the London General Omnibus Company Limited, for damages in respect of injury alleged to have been done by

the negligence of the defendants' servants in driving one of their omnibuses on to a frame of a motor-car of the plaintiffs. From the statement of Counsel for the plaintiffs it appeared that on November 27th last the plaintiffs were clearing some of their exhibits from the Stanley Show at the Agricultural Hall. The plaintiffs engaged a van for the haulage of the carriage frame and motor mechanism to Notting Hill, and it was fastened to the tail of the van by a rope, which was attached to a shaft in the front portion of the motor-car frame. According to the plaintiffs the space between the tail of the van and the front of the car was only about eighteen inches. It was said that the horse and van were proceeding at a slow walking pace, and as the "Angel" at Islington was passed an omnibus of the defendants was driven between the van and the car frame, the horses becoming entangled, and the hind legs of one of the horses became entangled in the frame of the car. The defendants denied that their omnibus was going at a rapid rate, and alleged that the space between the tail of the van and the car was from five yards upwards, and that the driver of the omnibus thought the two vehicles were distinct, that he was going in between them, and that there was room sufficient for at least two omnibuses. It was only when the horses' feet became entangled in the rope, which the defendant said was slack, that the driver became aware the two vehicles were fastened together.

Mr. W. H. Stevenson appeared for the plaintiffs, and Mr. Arthur Powell for the defendants.

After a good deal of evidence had been given Mr. Justice Day, summed up, and the jury returned a verdict for the plaintiffs. The defendants did not contest the amount of £40 which the plaintiffs said the repairs to their car would cost, and judgment was therefore given for that sum, with costs.

### THE BELFAST MOTOR-CAR INCIDENT.

AN appeal was brought by James Gillespie in the Recorder's Court at Belfast against the decision of the magistrates in imposing on him a sentence of one month's imprisonment for having been drunk in charge of a motor-car in Belfast on February 25th last.

Mr. W. M. M'Grath (instructed by Mr. W. Harper) represented the appellant.

Mr. J. Carr said the prosecution had been brought under the 12th section of the Act of '72, which provided that any person guilty of riotous or disorderly conduct and in charge of any carriage was liable to a penalty of 40s., or a month's imprisonment.

Mr. M'Grath said the facts of the case were not disputed, and the object of bringing the appeal was to ask his Honour to reduce the sentence of imprisonment to one of a fine. He thought he would be able to show that there were special circumstances in the case which justified him in making such an application.

Constable Stafford was called by Mr. Carr, and gave evidence as to having, on the date in question, observed Gillespie in a leading thoroughfare of the city under the influence of drink, and in charge of a motor-car. The car knocked down witness and several persons as it was running wildly about the street. Witness, after some difficulty, succeeded in climbing into the car and applied the brake. The car did not stop, but commenced to "scream." (Laughter.)

Mr. Carr: It was well you didn't blow something up. (Renewed laughter.)

Witness, continuing, said he ultimately stopped the car, and placed the driver under arrest. He (witness) had been laid up for a fortnight as the result of the injuries he sustained on the occasion.

Constable Dermott corroborated the evidence of the previous witness. He had also been knocked down by the motor-car on the date mentioned.

Mr. M'Grath said the defendant pleaded guilty, but he had certain circumstances to advance for the purpose of inducing his Honour to change the sentence. The defendant was in the employment of the Northern Counties Railway Company, and on the occasion had unfortunately got some drink. He was a married man, and, in addition to his wife and four young children, his mother was dependent upon him. If he was sent to gaol for a month he would lose his employment, and the helpless women and children would accordingly suffer. Up to the present time he had been a quiet, sober man, and had borne a good character, and had never got into any trouble of such a nature.

Evidence having been given to this effect by Gillespie, his wife, and mother,

His Honour changed the sentence to a fine of 40s., remarking that the constables, who put their lives in jeopardy in endeavouring to stop the motor-car, deserved the greatest possible credit, for by risking their own lives they saved the lives of a great many others.

Mr. Carr said that but for the promptness of the constable who got into the car some lives might have been lost.

District-Inspector M'Ardle said he would have much pleasure in bringing the conduct of the constables under notice.

### PROSECUTION FOR "FURIOUS DRIVING."

BERNARD FRANCIS, of 406 Brixton Road, S.W., was summoned, before Mr. Lushington, for unlawfully driving a light locomotive—to wit, a motor-carriage—at a greater speed than was reasonable and proper, having regard to the traffic on the highway. Police-Constable 107 AR stated that at 5.30 on the evening of the 3rd inst. he was on patrol duty on the Embankment. He saw the defendant driving westwards in a light motor-

car at the rate of twelve or fourteen miles an hour. He called upon him to stop, but he took no notice. The witness, therefore, galloped after him, and succeeded in stopping him near Hungerford Bridge. There was a great deal of traffic on the Embankment at the time, and the defendant passed all the cabs and carriages on the road. Some of the foot passengers who attempted to cross the road narrowly escaped being knocked down. Mr. Lushington said that according to the regulations the driver of a motor-car ought not to go at a greater rate than was reasonable and proper, having regard to the amount of traffic on the highway. According to the constable there was a great deal of traffic on the highway in question at the time referred to in the summons, and he (Mr. Lushington) did not think he was going at a reasonable rate. Defendant was liable to a fine of £10, but on this occasion he would only have to pay £2 and costs.

### THE MOTOR-CAR ACCIDENT NEAR LANCASTER.

At the Lancaster County Police Court on Saturday last, James Robinson, formerly of Leeds, driver of a motor-car, was charged with being drunk in charge of a motor-car at Slynne, near Lancaster, and also with driving the car above a reasonable and proper speed. The defendant surrendered to his bail, and the evidence showed that he drove the motor-car down Slynne Hill at a reckless speed, the car going from side to side, and at the bottom of the hill, where there is a bend, it got on the footpath. At that point Mr. Jackson, the Town Hall keeper at Lancaster, and his wife and family were walking along, Mrs. Jackson wheeling a mail cart in which was a two-year-old baby. The motor-car crashed against the mail-cart, smashing it to pieces, throwing the child out a distance of four or five yards, and knocking Mrs. Jackson down. The latter was unconscious for some time, and was bruised about the face and shoulder, and subsequently had to be medically attended for shock to the system. The child was also hurt, its nose being burst, and the skin taken off its forehead and nose. It was said that the car came down the hill at from eighteen to twenty miles an hour, and one witness said it seemed to fly down. The defence was that the occurrence was an accident, and that the car was only running at the registered speed of six miles an hour, which was probably increased to eight down the hill. The Chairman said defendant might have caused the death of three people. He was fined £10 and costs, or a month, for furious driving; and sent to prison for a month for being drunk.

THE Isle of Man will celebrate Motor-Car Day in July next, for, on the promulgation of the Motor-Car Act from the Tynwald Hill on that day, the use of a motor-car in the island will be legalised.

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.



### The Mors-Pennington Match.

WE are glad to announce that the series of challenges and acceptances in regard to the Pennington and Mors vehicles have at last reached a stage that promises immediate advance being made towards the tests being

carried out. Both parties to the contests have agreed to act on the suggestions made by us in our issue of the 12th inst., Messrs. Pennington and Baines having nominated Mr. John Stirling, of Hamilton, N.B., and Mr. C. G. Wridgway to act as representatives on their behalf, and the Automobile Association, Ltd., similarly nominating Mr. W. Worby Beaumont and Mr. S. F. Edge as their representatives. We have communicated with these gentlemen, and they will shortly meet in London to proceed with the preliminary arrangements. At their first meeting they will jointly nominate a fifth gentleman to act as chairman and referee, and he will himself nominate another judge, so that one judge and one representative of each of the contestants can attend both at the starting and finishing points. The challenge, as accepted, comprises the condition of each car ascending the gradient, starting ten miles south of Shapfell, twenty-five times, and descending at a speed not greater than that of the ascent. The judging of the contests will rest on the best average times made in ascending, the times of the descents not being a judging point in the matter. No doubt the committee of nominees will formulate penalties to become operative in the event of the descents being made at speeds greater than the ascents. The total distance to be covered amounts to 500 miles, the 250 miles of climbing, of course, being the competitive test. The Pennington car is to be a two-seated vehicle (the riders being seated side by side) furnished with a two-cylinder Pennington engine, whilst the Mors car is to be of the ordinary dog-cart type, designed for four persons, but carrying only two. The latter will, of course, be a far heavier vehicle than the former, whilst on the other hand its four-cylinder engine is much more powerful. Both cars are provided with pneumatic tires, and both are driven by belts. In both vehicles the carriage bodies are constructed to run much closer to the ground than is ordinarily the case with English-built cars. In each case the explosive gases are fired by electricity, and the manufacturers lay claim to be able to gain very high efficiency with a very small consumption of cooling water. The Mors car is fitted with a carburettor, whilst the Pennington has no carburettor as ordinarily understood, but is fitted with the inventor's patented device for securing perfect admixture, and at the same time heating the charge to almost firing point before admitting it to the cylinder. The Mors car depends on a cool mixture, the Pennington on a hot—and consequently perfectly dry—charge. The Mors is the production of one of the highest firms of electrical engineers and instrument makers in France, whilst the Pennington car is of British construction, although its inventor is an American. It is undoubted that the carrying out of the contest will be watched with considerable interest, and whichever car proves the victor it will be quite certain that it will have won on its merits.

### Motor-Cars in Porto Rico.

ACCORDING to report, Porto Rico is shortly to have a motor-vehicle service. This up-to-date scheme is, of course, due to the new possessors, the United States. It is said that Mr. T. Watson, of San Juan, is now negotiating with constructors in the United States with a view to provide a steam motor-vehicle service between San Juan and Ponce, the route being over the old Spanish military road, and about seventy-eight miles in length. At present the mails and passengers are conveyed between these points by horse-drawn vehicles, and the time taken in transit is about sixteen hours. The steam motor-vehicles are expected to complete the journey in eight hours. According to reports in the American technical journals the vehicles will be fitted with 10-h.p. engines, and will carry six passengers and two attendants. The cars will, it is said, weigh 3,000 lbs. and be fitted with rubber tires. They are calculated to cost £625, which includes the import duty of £40. The service is to be maintained by ten vehicles, the first to be delivered at the end of July.

### Carbonic Acid Gas for Motor-Vehicles.

RENEWED attempts are being made in the United States to propel motor-vehicles by the aid of carbonic acid gas. Hitherto all attempts to solve the problems involved have proved unsuccessful, but some experimenters have now claimed that they have successfully solved all difficulties. The carbon-dioxide is admitted to the engines under the full vapour tension of the liquid under normal temperature, the gas being heated to a high temperature before being admitted to the cylinders of the engines. One company is reported to have secured a factory at Kingston, N.Y., in which locality several very extensive cement factories are operated. The reputed cause for the selection of this centre as a site for the factory is that arrangements have been made with these cement companies for the gathering and storing of the carbon-dioxide generated during the burning of the cement. It will need considerable and extensive experiments to convince us that the project is likely to be successful. It has been the dream of many engineers to successfully operate carbon-dioxide engines, but hitherto the difficulties encountered have been insurmountable—at any rate, from a commercial standpoint.

### The Use of Motor-Cars as "Feeders" for Railways.

SEVERAL of the railway companies in the United States are becoming converts to automobile vehicles for connecting up their systems to various points that, although sufficiently important to warrant some expenditure, are not yet sufficiently so as to recoup the expenditure necessary to connect them to the main system by ordinary railway permanent way. The New England Co. and the Erie Co. have already developed some considerable amount of suburban traffic by means of motor-vehicles, and the Vandalia Co. is amongst the latest converts to the new vehicles. This Company is now establishing motor-vehicle services between Terre Haute, Indiana, and Harmony, a distance of nineteen

miles; between Brazil and Centrepoint, and between Indianapolis and Plainfield. So far as we know, the Great Western Railway Co. is the only railway company in England who make use of motor-vehicles for this purpose. Some long time ago, we believe in 1897, this Company established a service between Cirencester and Fairford. The difference in policy between the railway companies of Great Britain and those of the United States is perhaps demonstrated by examples offered at Newport Pagnel and Bedford. These places, with a wretched train communication, had to establish their own motor-vehicle services, which are, we believe, proving very successful. It would have been more profitable to the railway companies, however, if they had seized the opportunity and kept the carrying and passenger trade in their own hands. A similarly bad example of the British railway companies' policy is to be found in connection with the conveniences of inter-communication between Canterbury and Herne Bay. Here, too, private enterprise has been allowed to fill the gap that might with advantage have been filled by the London, Chatham, and Dover Railway.

#### Wheels for Motor-Cars.

OUR valued American contemporary, the *Horseless Age*, contains in its issue of the 10th inst. a letter from Messrs. J. M. Quinby & Co., a leading firm of carriage builders at Newark, New Jersey, stating that this firm has received a communication from "one of the leading builders of motor-vehicles in London" requesting the American firm to give their views for and against the use of artillery wheels in the construction of automobiles. There are practically extremely few builders of motor-vehicles in London, although several firms, of course, are making bodies for attaching to the frame and other parts produced by the real constructors of the motive parts of the vehicles. It is rather difficult to understand why our English constructors of motor-vehicles should require information as to the pros and cons of employing artillery wheels for automobiles, and it is even more strange that they should seek information from an American firm of carriage builders who presumably have no experience in constructing automobile vehicles. In every country where motor-vehicles have been constructed trouble has always resulted in respect to the wheels. If power is transmitted through the road-wheels themselves every experience points to the necessity of employing road-wheels of the artillery wagon type. If the chain sprockets are not attached to the road-wheels but are fixed to the axles there does not seem the necessity for employing this heavy type of wheel; this is also the case, generally, when the motor is geared by spur-gearing direct to the axles, but even in this case some constructors have found it advisable to use the artillery wheel. For our own part we incline to suspension wheels for some types of vehicles, but on the other hand we acknowledge that they have not been generally successful. There is no doubt that the tire question and the wheel question are the two most important debatable points in motor-vehicle construction. The type of vehicle, its designed load, its speed, and its projected duty all have influences on these matters apart entirely from the point of view of mechanical efficiency.

#### An American Long-Distance Trip.

MR. WINTON, one of the pioneers in petroleum-spirit motor-vehicles in the United States, has announced his intention of shortly starting out on a long trip from Cleveland, Ohio, where his factories are located, to New York, a distance of 800 miles. Given that the construction of the vehicle and its motor is good, there is, of course, no very great difficulty in such a task, but when Mr. Winton declares, as he is reported to have done, that he will accomplish the journey in four days, English as well as French automobilists will "sort of smile." Two hundred

miles per day for four successive days is a "tall order," and unless Mr. Winton drives at least fifteen hours per day, he will not succeed in his self-imposed task, even when the higher speeds permitted in the United States are taken into consideration. The main roads of the United States are not of the best possible construction, and we think he will find it a sufficiently difficult task to do the journey in six days.

#### The Further Success of Motor-Vehicle Services.

THE Newport Pagnel and Bedford motor-car services are proving a great success, whilst the Bedford and Kempston service is phenomenally so. In one day 387 passengers were conveyed by this service, the distance of the trip being about 2½ miles, and the fare 2d. per journey. Some estimate can be formed from these figures as to whether the car is financially successful, the cost of fuel being a known quantity. In regard to the further development of public motor-vehicles, Bournemouth is one of the latest recruits, the Canford Cliffs service forming a connecting link between the centre of the town and one of its outskirts; whilst at another Hampshire town the other day we were struck with the possibilities of the success of a motor-vehicle service. The district around Southsea is perfectly level, and although there exists a service of wretchedly-horsed trams to some of the adjoining districts, there is plenty of room for good motor-vehicle services. Even if such services were run only between the Pier Head and Cosham they would prove successful. There is always a large floating population in the town and district, and in the summer months the holiday traffic is stupendous.

#### The American Boom in Motor-Vehicles.

THE boom in motor-vehicles in the United States is reaching the usual stage of enthusiasm which our American cousins generally adopt in regard to new things. The daily newspapers are full of more or less garbled and inaccurate statements as to the possibilities of the use of motor-vehicles in the streets of cities and the roads of country districts. Amongst these exaggerations are statements that from 1,000 to 3,000 motor-vehicles are to be put in service for public use within three months in various districts. Whilst giving the United States engineers every credit for smartness in turning out work, those who know anything of the industry of course recognise that such promises are impossible of fulfilment. Notwithstanding this, however, it is an indisputable fact that the citizens of the United States are becoming as wildly enthusiastic devotees of the "new industry" as are our equally volatile neighbours across the Channel. They are bitten by the same fever that attacks all those who experience the exhilaration produced by motoring, but whilst the "Britisher" takes the disease more phlegmatically, the "Yankees" are quite as "light-headed" as the "Froggie." Apart from the daily newspapers, those who watch the spread of the movement in the United States can form some opinion of its genuineness by the fact that all the technical journals of the American Continent are devoting considerable space to discussing the problems involved and to reviewing and commenting upon the works and inventions of the inhabitants of foreign countries. The *Electrical World* is one of the firmest supporters of the movement, and we have had occasion in previous issues to allude to the broad-minded spirit in which this journal has taken up the subject. Recent issues of our contemporary have contained the first of a series of articles on American electro-mobiles written by Mr. Thomas B. Booth. In analysing the constructing of the Pope vehicles, the author remarks that in the batteries used the positive plates are of Planté formation, while the negatives have the active material assembled in masses. The positive plate is strong mechanically, and its Planté formation permits of a high rate of discharge. Its capacity is 3.5 ampère hours per pound of complete cell at a discharge rate of 1.2 ampères per pound,

or about '91 horse-power hour per 100 lbs. This, the author thinks, may be perhaps taken at the present time as the limit beyond which increased capacity must involve a decreased life, although improvement in capacity per pound without sacrifice of durability is being effected at a more rapid rate than was thought possible two years ago. He points out that several pasted cells have lately been developed which have yielded much higher capacities for a given weight, but that with this, short life and early renewals are inevitable. Mr. Booth gives an instance of one cell that has been boomed, having a starting capacity of seven ampère hours per pound, but if a capacity curve be plotted for every successive discharge of this cell, a straight line is obtained which touches zero at about the twenty-fifth or thirtieth discharge. There are, at the present moment, several types of cells of such a character which are being boomed in this country. In the present state of things no more foolish course can be taken than to sacrifice durability and long life for the gain of a high efficiency for a few discharges. Abnormal capacity is only gained by abnormal wear and tear, and it is better to face the difficulty of carrying the heavier weight than the much more unsatisfactory one of finding batteries useless after a run of two or three hundred miles.

#### Military Motor-Vehicles in the Austrian Army.

FOLLOWING the lead of its continental neighbours, Austria is falling into line with regard to the employing of motor-vehicles for army purposes, more especially for the conveyance of stores and camp necessities. Accord-

ing to a military expert, these vehicles "dispense with the need of horses, which can now scarcely be obtained in sufficiently large numbers; they abolish the necessity of conveying fodder for many thousands of horses; they travel five times as rapidly over the most difficult ground, and they are never exhausted. Their use will vastly facilitate the rapid manœuvring of large bodies of troops." All these advantages are perfectly well known to any one who has any experience with automobilism, but when it is gravely announced by the Vienna correspondent of the *Morning Post* that these new military automobile wagons "will carry ten tons, and have a speed of fifteen miles per hour" we begin to have serious doubts as to the correctness of our contemporary's information. A wagon to carry ten tons at fifteen miles per hour over even ordinary roads is, we think, a much too difficult problem for its satisfactory solution at the present moment. Such a load would require the vehicle to be much too unwieldy for any ordinary manœuvring, and the necessary body space to carry such a load would prove, we are afraid, an absolute stumbling block. Even if this difficulty be overcome, to give such a vehicle a speed of fifteen miles per hour would necessitate the employment of such powerful engines that the problem of finding sufficient room for the accommodation of fuel and water would prove almost unsurmountable. To carry a load of ten tons the vehicle itself could not weigh, with its engines, boilers, fuel and water, much less than eight tons, and to move this load at fifteen miles per hour on ordinary roads and over ordinary bridges would, we think, bring about the rebellion of all those responsible for the maintenance of roads and bridges.

#### Results of Inexperience.

ON Wednesday last, says the *Morning Advertiser*, "Shortly after one o'clock, an extraordinary sight was witnessed in Farringdon Road, outside the Memorial Hall, when seven motor-cabs were laid up for repairs. All of them

belonged to the Electrical Cab Company, Limited. The first went wrong in Fleet Street, where it collided with a trap, in consequence of which a wheel was damaged, and the tire was taken off, and it was taken to Farringdon Road for repairs. Almost immediately afterwards two others were proceeding down Ludgate Hill, both with fares, when the

front one ran into the back of an omnibus. The splashboard of the cab was smashed, and the two lady fares were much shaken. Before the cabdriver behind could realise that his colleague was in trouble he had run into the back of the first cab, sustaining the similar damage of smashing the front board. A gentleman who had been travelling in this cab jumped out, and, shouting that he would have £500 damages for it, rushed up Ludgate Hill towards St. Paul's Churchyard amidst the laughter of the crowd. These cabs were promptly removed into Farringdon Road, and a message was sent to headquarters to send on a repairing car at once. Whilst they were awaiting the arrival of this car, another electric cab, coming from the direction of Farringdon Road Station, collided with a coach running to Epsom, with the result that it had its panel badly broken. By this time a huge crowd had gathered to watch the curious sight. The amusement was added to by the arrival of three more cabs, the drivers of which complained of having sustained damages of various kinds. Eventually some of the cabs were repaired and started again, but two of them had to go back to the yard." This was undoubtedly an unfortunate series of *contretemps*; in no instance was the accident due to the construction or equipment of the vehicles themselves, but in every case to the inexperience and carelessness of the drivers. Mr. Bersey, the Company's managing director, had no light task in finding and training some fifty or sixty extra drivers in the short time at his disposal, and although some fault might be found for sending out the vehicles in the charge of insufficiently trained drivers, yet it is not fair to place the blame on the vehicles themselves.

#### A Warning to Users, Purchasers, and Sellers of Motor-Tricycles.

THE British Motor Co. has issued a timely warning to those many users, purchasers, and sellers of motor-tricycles fitted with De Dion motors who have not purchased them from licencees of the Company, or who have imported them from the French makers. It cannot be too widely known that all De Dion motors and tricycles *must* bear a licence plate, otherwise a licence penalty fee of £5 is demandable by the British Motor Co. By an arrangement with De Dion and Bouton these French makers are able to sell vehicles and motors in England, but before exporting them must affix a licence plate, which frees them from any further liability for royalty fees in England. Considerable numbers of these engines and vehicles have, however, in the past been imported into this country without licence plates. Automobilists are warned not to purchase these without demanding the payment of a licence fee of £5 from the seller or making him obtain a licence plate before accepting delivery. Sellers also would do well to cease handling these unlicensed machines, as otherwise they will become liable to actions for damages, as will also the users, unless the licence is obtained from the British Motor Co. In the present issue the Company controlling these patents gives illustrations of the two licence plates in their advertisements. The larger one is issued in England and the smaller in France.

#### The New Brighton Motor-Vehicle Service.

THE Wallasey District Council has refused in the past to grant the promoters of the New Brighton motor-vehicle service the necessary licence enabling them to ply for hire. It has now receded from its position, however, and on the 19th inst. the Health Committee of the Council granted licences to Mr. W. Miller-Metcalf, of Bold Street, Liverpool, who is the moving spirit in the syndicate, to run a service of motor-cars to and from various points in the Wirral peninsula. The scope of the movement is a wide one, and in all eight vehicles will be required to carry on the various services contemplated, which will practically cover the whole of the district between Chester and New Brighton to Hoylake and West Kirby. A start was made with one car on Monday with a Seacombe-



New Brighton service, and the other seven cars will be placed at work as soon as they are delivered. Four will ultimately be employed on the New Brighton-Seacombe route. The service will in many respects be a long way ahead of anything that has been attempted in either this district or on the Liverpool side of the Mersey, the vehicles being luxuriously fitted up, and built with an eye to the comfort of passengers in transit, as well as with a view to performing the journey more speedily. When the whole of the vehicles are to hand, other services to West Kirby and Hoylake, to Chester, and to other Dee-side resorts will be started, and these also cannot fail to hit the popular taste.

**Paignton's  
Motor-Vehicle  
Service.**

THE inhabitants of Paignton and Torquay are after all to have a motor-vehicle service, Mr. T. Adams, of the Torbay Engineering Works, Paignton, having put on the road an excellent "Lifu" steam drag with a 25-h.p. engine and carrying twenty-three passengers. Mr. Adams and a party of friends journeyed to Southampton to fetch the car, which had been sent there from the "Lifu" works at East Cowes. The car left Southampton at 6 p.m. on Saturday, arriving at Bournemouth at 9.15. Bournemouth was left at 9 a.m. on Sunday, and after a ride of ninety miles through the charming country, Honiton was reached near midnight. The route taken was the coast line as far as was practicable. On account of the late time of arrival, great difficulty was found in securing lodgings for the night, and some of the party had to put up with sleeping in arm chairs. The car arrived at Exeter the next day in time for early luncheon at the Bude Hotel, where the company was joined by half a dozen others who had journeyed from Paignton to Exeter by train for the purpose of riding home in the car. The arrival and departure of the car created much interest, as was also the case at Paignton, where a large crowd assembled in the Avenue to witness the arrival.

**Canadian Electrical  
Vehicles.**

THE Canadian Motor Syndicate, pioneers of the movement in Canada, has within the past month established works in Toronto, Ont., and it is said the company is already crowded with orders for motettes, delivery vans and carriages. The motette seems to have caught the popular fancy. Several improvements, notably in frame and wheels, have lately been introduced in its construction, making it stronger, and provision has been made to carry either a 30-mile or 50-mile equipment—the boxes of cells being instantly removable from the side. With this construction it is claimed that it will be possible, by use of a duplicate battery, to keep a car out constantly, making a total of 100 miles per day.

**The Riker Electric  
Vehicles.**

At the Electrical Exhibition held in the Madison Square Gardens, New York, there was a good display of automobiles, the well-known Riker Electric Motor Co. making a particularly good show of electric Victorias, phaetons and traps of excellent finish and pleasing appearance. These vehicles are handled in this country by Messrs. Shippey & Co., of King Street, Cheapside, E.C., who are, we understand, granting licences to various manufacturers, including the Mackenzie Carriage Works Co., of Kennington who have a large number in course of manufacture.

THE electric cabs, which for a brief season disappeared from the London streets, are on the scenes again. The eighty cabs and private electric broughams which are now launched are a great improvement on the last batch, and, as announced in our columns last week, arrangements have been made for letting out private electrical carriages for any period.

## MOTOR-TRICYCLE RACES AT THE CRYSTAL PALACE.



THE series of motor-tricycle races at the Crystal Palace on Whit Monday were seriously marred by the extremely inclement weather. The track was a wash with rain, and although nearly all those who had entered for the various events put in an appearance, many were debarred from starting owing to the state of the weather. Those taking part in the races were drenched to the skin, and their faces were covered with mud thrown up from the track by the front wheels of their vehicles. Under the circumstances, it was not to be anticipated that the records created on May 6th on the same track would be beaten, and as a matter of fact all the times were considerably slower. The meeting was held under Motor-Car Club rules, and the handicaps were framed by the Handicapping Committee of the Club. Mr. F. F. Wellington was judge, two of the official timekeepers of the Motor-Car Club (Mr. F. T. Bidlake and Mr. F. W. Baily) taking the times. The programme included four items:—A mile handicap and a ten-mile scratch race for low-g geared motor-cycles taking more than two minutes per mile, and a one-mile handicap and twenty-miles scratch race for machines covering the mile in under two minutes. In the ten-miles scratch race for slow machines eleven entries had been received, but only five competitors faced the starter. The winner turned up in Charles Jarrott, whose time was 21 m. 43½ s., J. Buck being second, and Stocks third. The winner was forty seconds in front of Buck, whilst Stocks was a bad third. It was the general opinion that Buck should have won this race. He, however, very foolishly let a fresh supply of petrol into his tank so that it was practically flooding the carburettor, and as a consequence he lost ground at the finish and allowed Jarrott to get to the winning post first. Evidently, too, Buck requires more experience in controlling his mixture valve.

In the mile handicap for slow vehicles Jarrott was placed at scratch, whilst the limit man was given 320 yards start. Neither of these started, however, and only three riders faced the starter out of ten entries, viz.: J. Buck 75 yards, J. W. Stocks 120 yards and A. Hoffman 100 yards start. This race, although run in very slow time, was an interesting one, the winner turning up in J. Buck, whose time was 2 m. 12½ s., followed at five yards interval by A. Hoffman, with J. W. Stocks third and close up. In the mile handicap for fast machines six entries were received while five faced the starter. The only absentee was the Hon. C. S. Rolls who had returned especially from the Automobile Club's Whitsun tour in order to take part in this and two other events. He was prevented from doing so by reason of the non-arrival of his machine. S. F. Edge was scratch in this race, Percy Richardson being the limit man. The winner was C. G. Wridgway (20 yards), Stocks being second and Jarrott third. The winner won by three lengths in 1 m. 52 s. An amusing feature of this contest was that Stocks, riding hard, was striving all he knew to pass Wridgway on the fourth lap; as the race was for a mile (three laps) his disgust on being informed of the futility of his endeavours can be imagined. Richardson was unfortunately placed for starting, his mark bringing him right on the middle of the banking, down which he slid sideways twice before starting, owing to the greasy surface of the track. In the last event, twenty miles scratch race for fast vehicles, six entries were received, and five started, Richardson being the absentee. Wridgway ultimately won in 35 m. 27½ s., Jarrott being second half a lap behind and Stocks third. Jarrott could not get his machine to work quickly enough, and lost a whole lap in the first mile or so. This he could not recover, but in the last four laps he picked up rather more than half a lap, and had the race been for another mile, several good judges held that he would have beaten Wridgway for premier position.

## A New Type of Car.

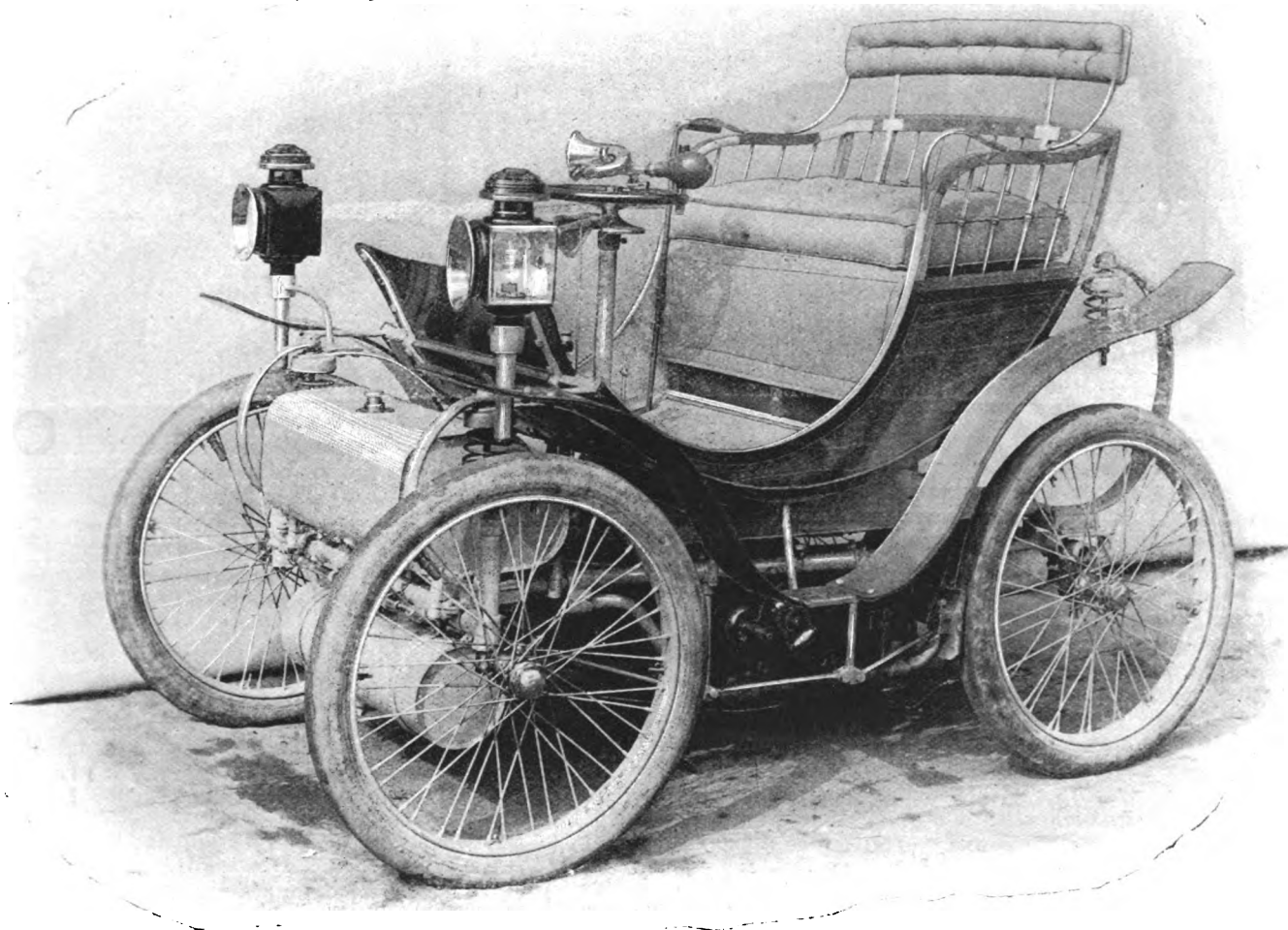


FIG. 1.—THE MOTOR MANUFACTURING COMPANY'S NEW LIGHT TWO-SEATED CAR.—THREE-QUARTER FRONT VIEW.

ON the occasion of a recent visit to Coventry, we were afforded the opportunity of visiting in detail the works of the Motor Manufacturing Co., Ltd., at the Motor Mills, and by the courtesy of Mr. George Iden, the manager, to examine several new types of vehicles now going through the works. We found the works quite full of orders; indeed, we were informed that scarcity of labour in one or two departments was seriously interfering with the output of the large amount of work which the Company has in hand, not only for private customers, but for large syndicates running public motor-vehicle services, as well as for cycle agents and manufacturers who are becoming interested in increasing numbers in the construction of motor-tricycles, and therefore desire to purchase the necessary motors. The Motor Manufacturing Co., Ltd., is, we believe, the only firm in England making the De Dion type of engines for motor-tricycles, and Mr. Iden pointed out to us several lots of engines which were being tested ready for delivery to well-known firms, in addition to other lots in course of being finished for attaching to the Company's own motor-tricycles.

In regard to the new types of vehicles now completing at the works, we found no less than three quite distinct and separate classes in progress. All of them are being fitted with two-cylinder horizontal motors, but in each case the transmission mechanism is arranged on different principles, calculated to furnish the best results in regard to the required duties and class of vehicle, and the horse-power also varies with each type.

We give in Figs. 1 and 2 a three-quarter front view and side view of a type of car which has long been in request in England. It is a light two-seated car of British manufacture and design, far in advance of anything of the sort we have yet seen at the price, and, so far as we could judge from a run of about twenty miles, thoroughly capable of giving satisfaction both in regard to speed and travel and hill-climbing ability.

The weight of the car is well under 10 cwt., even when the tanks are filled with petrol and carrying fifteen gallons of water for cooling purposes. It is fitted with three forward speeds and two reverse speeds, whilst two independent brakes are provided, one consisting of the splendid new form of Lehut band brake, for which the Company are sole agents in Great Britain, and the other of a shoe brake on the tires. The latter is practically never used, as the Lehut brake is so powerful that no further brake is actually required, excepting for the purpose of conforming to the requirements of the Act of Parliament and for furnishing a stand-by in the very improbable case of the Lehut brake breaking down or failing.

The whole of the manipulating gear is placed in the steering pillar shown in front of the driving seat. The steering is controlled by a hand-wheel, and is effected by links attached to the vertical axles of the front wheel. Under the steering wheel is a quadrant, in the notches of which the speed-controlling lever works. This quadrant bears five notches corresponding with the three forward speeds and two backward speeds, the "dead" for stationary position of the

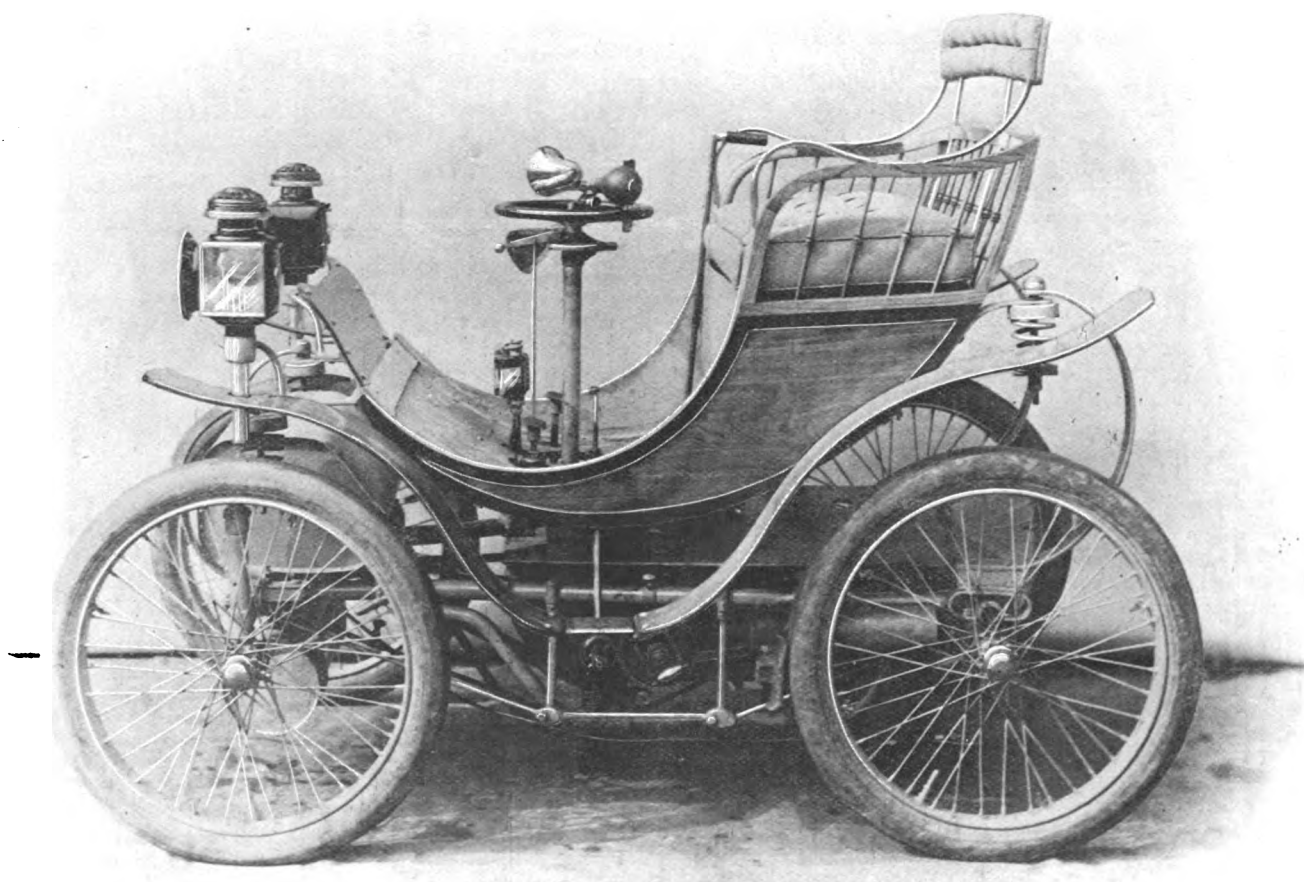


FIG 2.—THE MOTOR MANUFACTURING COMPANY'S NEW LIGHT TWO-SEATED CAR.—SIDE VIEW.

lever being the same as for the first backward speed. In front of this quadrant is a small vertical quadrant bearing an arm actuating a rod which controls the accelerating or retarding gear controlling the speed of the engine. On the footboard are two pedals, one controlling the friction clutch conveying the power from the engine to the transmission gear, and the other actuating the Lehut band brake. In front of the steering pillar is fitted the sight-feed lubricator of the ordinary enclosed box type, and behind the steering pillar is a small vertical rod which controls the reversing of the travel of the car. The car cannot be reversed until this rod is pushed in a downward direction, and as the "dead" or "stationary" position of the speed-control lever corresponds with the first (low) speed of the backing motion, it follows that so soon as this rod is lowered the car is caused to travel backwards; immediately on the rod being raised the backing motion ceases, and the speed lever remaining in the "dead" position the car is at once stationary.

The car body is entirely separate from the frame, carrying the motor and mechanism, and although in the illustration the body is shown as being swung on the single suspension principle, in future vehicles Mr. Iden's double suspension system will be adopted, thus giving the maximum of ease and comfort.

The whole of the motor and mechanical parts are carried under the frame, and although this causes the car to have rather a cumbersome appearance, yet this is much more than counterbalanced by the fact that this position not only secures greater stability and thus very considerably minimises the

possibility of the car turning over, but also provides other advantages which will be quite easily appreciated by practical motorists. The whole of the mechanism is covered by the flat board, shown in the engraving, under the car body. This is removable by unscrewing one nut, the whole of the engine being then opened up for inspection.

The motor is of  $4\frac{1}{2}$  brake horse-power and of the horizontal two-cylinder type; incandescent tube ignition is employed, the lamps, and consequently the explosion chamber of the engine, being placed at the rearward end of the vehicle frame. Power is transmitted through a friction clutch to spur gearing, the latter being carried in a lubricating chamber. The changing of speed, and consequent engaging and disengaging of the sets of spur gearing is effected by means of a rack and pinion device actuated by the speed control lever working in the quadrant on the steering pillar as previously described.

The cooling water is carried in the larger of the two tanks shown in front of the vehicle, whilst the petrol is contained in the lower, cylindrical, tank. In future vehicles this latter tank will be placed behind the water tank, there being plenty of room for it in this position, as can be seen from an examination of the side view of the car.

The car is also made with a  $3\frac{1}{2}$ -b.h.p. single cylinder engine, but this is not recommended, and as the  $4\frac{1}{2}$ -b.h.p. vehicle, even when furnished with pneumatic tires, can be purchased for somewhere about £180, there would appear to be no necessity for effecting the saving of having the always unsatisfactory single-cylinder engine.

The wheels are of the suspension type with tangent spokes, and although the frame in the vehicle illustrated is constructed of tubes, it has been decided to employ angle steel in the future.

We congratulate the Company on their latest production, and have no doubt that it will receive that support which its merits deserve from those requiring light two-seated cars at a moderate price, furnished with full power, and able to travel at good speeds, whilst also being capable of surmounting heavy gradients.

We must leave the descriptions of two other interesting cars that we saw until another occasion.

## CORRESPONDENCE.

### WHAT SHALL WE CALL OUR MOTOR-CARS?

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As the above question is continually cropping up, and many suggestions have appeared of late in the leading technical journals catering for the new motor-car industry, it is evidently a matter which should be fully ventilated, especially as the "automobile" industry in the future cannot fail to become as important as our railways, tramways, and omnibus organizations have become of late years, both from an industrial and financial point of view. It therefore behoves all of us who are engaged as pioneers in the development and success of "self-propelled road vehicular traffic" to have a solid base to build up the industry upon. We should therefore as a body fix upon suitable names and descriptions of the various types of vehicles used and methods of working them, with a view to educate and properly initiate the public as to the merits of the different systems being introduced, and by this means leave the public to judge for themselves as to the type and system of vehicle best suited to their special requirements.

Self-propelled road vehicles have undoubtedly come to stay, and the demand for this class of vehicle is on the increase. The various types and systems being introduced for both pleasure and business purposes clearly show this. The propulsion of these vehicles is effected by the aid of electricity, oil, petroleum-spirit, steam or compressed air. Hence my object in making a few suggestions at this juncture with a view to formulate a plan and decision relative to the matters in question.

Personally, as is well known, I am a staunch believer in electric propulsion for more reasons than one; but as oil, steam and compressed air all have spheres of usefulness, I say by all means "let them all come," and thus give every system of self-propelled road vehicles a fair trial. The one which proves itself the simplest to handle, the most economical in working, the safest to drive, and best suited to the tastes of the million, whether the power be electric, petroleum, steam or air, is the one which will carry the flag of fortune in front of it by securing the lion's share of the motor-car industry. I must confess I was never particularly struck with the early names given by some pioneer workers to their vehicles, such as horseless cars, auto-cars, motor-cars, mo-cars, or as the French call them, "automobiles," for the simple reason they do not disclose the class of power used. Therefore, some eighteen months back when introducing the "Riker electric" system of American motor-cars into England, in order to distinguish this system, my firm decided to call the Riker cars, "self-propelled electric vehicles." The press caught on to this title quickly, it being described as something new and distinct to other systems described, and although the title is a fairly good one and has become moderately popular, I begin to think it is too long, and can therefore be improved upon, especially as there are now four competitive systems in the market. With a view to clearly distinguish one system from the other, and in order to educate the public as to the merits and working of the four separate methods of propulsion, I would suggest, subject to the approval of the

trade and the Automobile Club, that the different systems should be described thus:—For electrical self-propelled vehicles of all kinds I would suggest, as a *distinct class*, that they simply be called "electro-mobiles." For oil motor-cars of all descriptions I would suggest the name of "petro-mobiles." Steam-driven vehicles should be called "steam-mobiles," and for compressed air methods of propulsion I would suggest "airomobiles." As a distinctive name for any special class or type of vehicle it would be easy to add a prefix specially distinctive, such as "electro-mobile cabs," or perhaps better still, for shortness sake, call it an "electro-cab," "electro-victoria," "electro-phæton," "electro-brougham," "electro-dogcart," or "electro-van," as the case may be. The same would apply to oil-motor systems, as "petro-cabs," "petro-carriages," "petro-vans," etc. Whereas for steam systems, and for shortness sake, the words "steam-wagon," "steam-buses," "steam-car," "lorrey," or "dray" could be used, and so on according to type of vehicle used. Then, if such titles were decided upon, all the public would have to ask, "What system of propulsion is this?" The answer would be "electro," "petro," "steam," or "airo," and by this means complications would be prevented, time and money saved in giving long and exhaustive descriptions of each one's systems as now. All three-wheeled vehicles, I would suggest, should be described as a distinctive class as "motorettes," thus: "electro-motorette," "petro-motorette."

Instead of the word "driving" as now used for horse-driven vehicles, I think the distinctive word "moting," like yachting, biking, coaching, hunting, boating, etc., would suffice, and soon become to be well understood by the public, and thus convey the mode of travelling employed. For instance, one would say "gone out for a trip," or "electro-moting to Brighton," or "petro-moting to Birmingham or Edinburgh." The word "moting" would be a suitable and applicable one for all methods of road vehicular travelling.

Now as to drivers: Instead of coachman I would suggest "motor-carist" or "motor-man," and for gentlemen drivers "automobilists." One could say, for instance, "Captain Brown has got a good motor-carist or motor-man, who steers remarkably well"; or one would say in speaking of a gentleman driver, "Lord So-and-So is a splendid automobilist—just see how he handles the brakes and controllers when 'moting' down to Brighton in his electro-coach."

For housing mechanical vehicles, the word "stabling" is too horsey. "Docking," used by some motor-carists, is absurd, as it reminds one of tail-clipping. I would suggest the place be called the "motorage"; and if this distinctive name is decided upon, country roadside hotel proprietors would soon be found hanging out the usual signs, such as "Good motorage accommodation," and perhaps in the course of time the following additional sign might appear, "Electricity supplied *while you dine, at 2d. per B.T. unit.*" Petro-mobilists would find the signs "Benzine and Petro Stores, first turning to the right," or the left, as the case may be. Noticeboards lettered "Experienced mechanics kept for repairs," in addition to those just mentioned, would also doubtless soon be seen in those provincial districts where hotel proprietors lay themselves out for the accommodation of road travellers at moderate charges. If hotel proprietors would take up this matter the sooner would the whole country receive the benefit of the money which will be expended by supporters of country trips, which tend to advance the new and healthful "automobile industry."

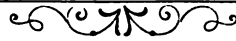
I must apologise for taking up so much of your valuable space, but as the question is one of interest just now I trust you will find room to record my views upon these matters, and thus oblige

13 & 14 King Street, Yours faithfully,  
Cheapside, London, E.C. ARTHUR SHIPPEY.

THE Atlantic Electric Vehicle Co., with principal office at Camden, N.J., has been incorporated to manufacture motor vehicles of all kinds. The capital is £20,000.



# In the Heart of England.



From a Photograph by

Warland Andrews, Abingdon.

THE AUTOMOBILE CLUB'S WHITSUN TOUR.—THE PARTY AT CROWN AND THISTLE HOTEL, ABINGDON.

## The Start from the Club-House.

IN cold and gloomy weather the initial assemblage of those participating in the Whitsuntide tour of the Automobile Club took place at Whitehall Court on Friday morning last. Some fifteen vehicles were ranged in row, while several other owners with their cars were on the ground to see the start. Amongst those present was Mr. Harmsworth on his new Panhard, Mr. Roger Wallace, Q.C., Mr. Worby Beaumont, Mr. Roger Fuller, etc. The start was made punctually at 10.30 for the next meeting place, High Wycombe (31 miles), where lunch was served.

## The Route for the Trip.

THE route has already been given, but we may again mention that Friday's run was to High Wycombe (31 miles) for lunch; to Abingdon (31½ miles) for dinner. Saturday: To Stratford-on-Avon (45 miles) to lunch; Leamington (10½ miles) to dinner. Sunday: Alcester, via Redditch (31½ miles) for lunch; Leamington (18 miles) for dinner. Monday: Birmingham (35½ miles) for lunch; Leamington (26 miles) for dinner. Tuesday: Aylesbury (52¼ miles) for lunch; and returning to London (42 miles).

## The Weather on the Journey.

The weather throughout the five days' tour of 323¾ miles was of the most disagreeable description, the sun scarcely shining the whole time. The rain commenced at High Wycombe and continued without intermission all the way to Abingdon. Next morning opened with heavy showers, which continued more or less during the whole day. Sunday opened dull, and the beautiful views from the Ridgway were obscured. The rain again commenced about mid-day, and continued fiercely for the remainder of the day. Whit Monday opened dull, and continued so till after lunch; then came a deluge lasting some hours. On Tuesday morning the sun shone at first, but soon great black clouds hung over our car till Uxbridge was reached, the rain drenching the riders through and through. At Uxbridge, peculiarly enough, not a drop of rain had fallen, while some of the cars on the journey between Leamington and Aylesbury escaped from the rain.

## The Scenery and the Roads.

The route chosen was an extremely rough though a very beautiful one. The roads were heavy after the rain and the hills were numerous and stiff. The country passed through was a revelation to most of those living in the South, and the general opinion was that the present tour was through the loveliest country the Club had yet visited. Extraordinary trouble must have been taken by Mr. Alfred Bird (with the aid of Mr. Johnson) to map out such a lovely ride, the journey being mostly through country lanes and pretty villages, and exposing for the first time to many of us the innate charms of the heart of England.

## Our Itinerary and Guide Book.

That which Mr. C. Johnson, the popular secretary of the Automobile Club does, he does well, and in the present instance he is again to be congratulated upon the new departure in the shape of the itinerary—which is of pocket-book size and form. Perhaps a better title than itinerary would be to call the booklet a *vade mecum*, for it contained everything in the shape of information that was required, and although the route was mostly through country lanes, and unknown to us, yet the instructions were so precise that we travelled the whole distance without having to make enquiries.

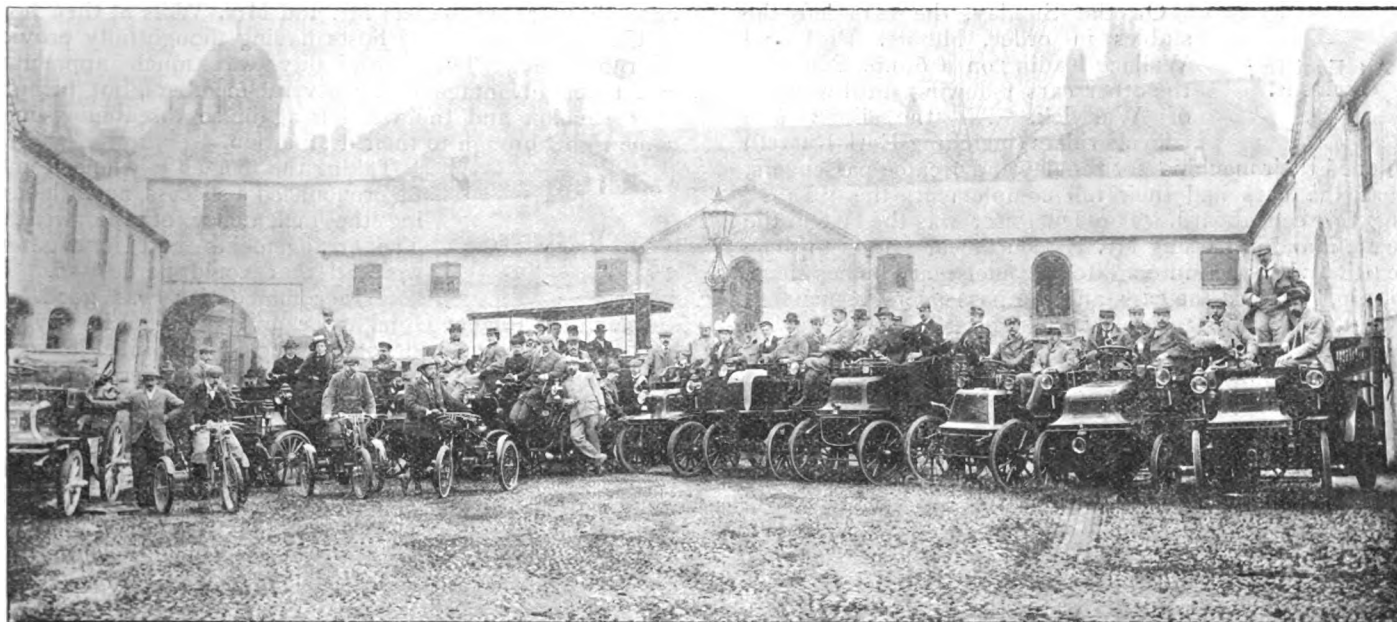
## Names of the Participants.

Among those who took part in the tour were:—Panhard, 6 h.p.: Mr. Alfred Bird and Mr. Roger W. Wallace, Q.C.—Cannstatt Daimler: Mr. Frederick R. Simms, Mr. Bryan Donkin, Mr. Hankinson, Mr. E. Lefebure.—Benz 5-h.p. Dog-cart: Mr. F. H. Butler.—Benz Ideal: Earl Russell.—Daimler: Mr. Estcourt and Mrs. Estcourt, Mr. Michael and Mrs. Michael.—Beeston tricycle: Capt. H. R. Langrishe.—Benz Ideal: Mr. S. Beevor and Mrs. Beevor.—De Dion tricycle: Mr. F. W. H. Hutchinson.—8-h.p. Daimler: Mr. J. A. Holder and Mr. R. B. Bird.—8-h.p. Daimler: Mr. John R. Hargreaves, J.P., and Mrs. Hargreaves.—Benz Ideal: Mr. W. P. C. Wills and Mrs. Wills.—De Dion tricycles: Mr. Robert E. Phillips and Dr. Acworth.—Panhard, 6 h.p.: Hon. C. S. Rolls.—Lynx dog-cart: Mr.



H. E. Zacharias and Mrs. Zacharias.—Hercules car: M. Ducroiset and party.—Peugeot: Mr. A. W. Armstrong and Mrs. Armstrong.—Daimler: Mr. Campbell Muir and friend.—Mors: Mr. Mark Mayhew.—Iveagh phaeton: Mr. C. Cordingley, Mrs. Cordingley, and Miss Pursehouse.—Iveagh phaeton: Mr. Gretton and friend.—Lifu steam wagonette: Mr. Staplee Firth and Mrs. Staplee Firth, Mr. Andrew W. Barr, Mr. A. C. Poole, Mr. H. F. Julian, Mr. C. Johnson (Secretary), E. Shrapnell Smith, Mr. H. H. Sturmey, Mr. Louis D'Egville, Mr. H. J. Swindley, etc.—Other Club vehicles: Mr. A. H. D. Altree, Mr. Montagu

to the fourth, and in fact preferred the first, speed most of the time. At last, on returning from Mr. Bird's residence at Moseley, an ignition tube burst "some miles from anywhere." Of course, being prepared with a second one matters. were soon right again—but, alas! this burst also. A six-mile walk and an eleven-mile drive from Henley-in-Arden landed us back at Leamington shortly after midnight. At Woodstock Mr. Roger Fuller had to spend between four and five hours on his valves, the spindles of the induction and exhaust valves having been bent. Later, misfortune again overcame that gentleman, the countershaft snapping. Four-



From a Photograph by

THE AUTOMOBILE CLUB'S WHITSUN TOUR.—THE PARTY AT THE REGENT HOTEL, LEAMINGTON.

E. E. Lippiatt, Leamington.



From a Photograph by

THE AUTOMOBILE CLUB'S WHITSUN TOUR.—ANOTHER VIEW OF THE PARTY AT THE REGENT HOTEL, LEAMINGTON.

E. E. Lippiatt, Leamington.

Pilcher, Mr. G. H. Warne, Mr. Worby Beaumont.—Daimler: Mr. and Mrs. Roger Fuller. Several other cars took part in short runs on the various days.

With a fleet of five-and-twenty cars, many of them travelling over three hundred miles, incidents and accidents were sure to occur. Our own car gave us trouble from the start, and after a halt of ninety minutes in a stable at

#### "Incidents" on the Road.

Hillingdon, matters improved somewhat; but the car objected

teen miles' travelling, driving backwards, landed the machine at Coventry. The Daimler Co. lent another machine, but a tire came off in the "water splash" at Kenilworth, and Mr. Fuller abandoned motor-caring for the time being.

#### More Incidents.

Mr. J. Hargreave's twin-Daimler came to grief at Leamington through the scoring of one of his bearings, and the car had to be sent to Coventry, while Mr. Sturmey's Land's End to John O'Groats machine came into Woodstock without a tire

on one of the wheels and another one very nearly off. The tire had come off and fallen in the road, not having been missed. Fortunately Mr. Estcourt's car was behind and picked up the tire. Then the strange spectacle was seen of Mr. Michael hawking round a tire, enquiring if any one had lost it! The owner was found in the morning. Mr. Gretton also shed one of his tires, while Mr. and Mrs. Armstrong pluckily persevered with their Peugeot. Mr. Beevor's chains gave him a lot of trouble, leaving the sprocket with appalling frequency; while Mr. Butler also suffered, but to a minor extent, from the same cause.

#### An Exciting Incident.

On the Sunday, the cars left the stables in order, Messrs. Bird and Wallace leading on a 6-h.p. Panhard, the other cars following until well out of Warwick. All the Benz and tricycle riders (including Earl Russell) abandoned their machines for the day and became passengers, so that the cars had their full complement, the "Lifu" having thirteen aboard. The Ducroiset was the last in the procession, and in passing Mr. Estcourt's car got on to some soft earth and slipped into a ditch about twenty inches deep. "Pip, pip," stopped the cars, and the passengers dismounted and went to the assistance of Mr. Ducroiset. Fortunately no one was injured. The combined strength of the whole party got the vehicle into the road again, and it then started running as merrily as ever. At Alcester there was rather a large addition to the number of machines, Mr. Du Cros being present with a 6-h.p. Panhard, Mr. Lanchester and party of friends (five in all) on a Mors, Mr. Critchley on the new light Daimler car, two Frenchmen on a powerful fast car by Audibert, Lavirotte & Co., several motor tricycles, etc.

#### The Behaviour of the Cars.

With regard to the various cars, many travelled very well and gave but little trouble to the drivers. The first word of praise must be given to the Liquid Fuel Co.'s wagonette, "The Lifu," which travelled the whole route, sometimes having as many as fourteen passengers on board. The pace was evenly maintained throughout on the level, and uphill, the extra power so often desired being always forthcoming, enabling the car to mount the inclines at a good speed. There was not one single stoppage for adjustment, and the car was in the charge of a single attendant, who kept the wagonette "spick and span" as regards cleanliness, so that standing in the stable yard it looked always a "thing of beauty." The Ducroiset also travelled the whole route at a steady and good pace, usually (with the exception of Mr. Rolls' vehicle) coming in an easy first at the various stopping places. There is no doubt a great future for the Ducroiset car in this country, owing to its strength and reliability.

#### Hospitable Club Members.

In visiting Kenilworth, which had to be reached through a "water splash" in flood, much fun was caused, a crowd collecting to watch the motors. For this, in at least one instance, they were well drenched for their pains. The "splash" is at the foot of a rather steep hill, and the "Lifu" came down and went through at full tilt. The stream was divided into two, and the concussion was so great that it sent the water over the house tops. It also put out the burners of the "Lifu." Other cars went through at full speed and drenched their passengers. We travelled gently through on our first speed. In our *vade mecum* was a "star," and in reference thereto a short paragraph stating that Mr. J. Broughton Dugdale (a member) invited members to visit Wroxall Abbey, between five and six miles from Warwick, on the Birmingham Road. Following the tracks, which, as all motor-carists know, are supposed to be infallible, we turned in at the lodge gates, facing which were a pair of "stocks," and drew up in front of the lovely residence of Mr. Dugdale, where that hospitality was extended which gentlemen know so well how to appreciate. The electric installation, duplicate in everything,

at Wroxall Abbey is one of the finest we have ever seen in a private house. Mr. Dugdale is an enthusiastic motor-carist and joined the party for the remainder of the day. After lunch, members had sincere pleasure in visiting Mr. Alfred Bird's house, his interest and work in connection with the Club being much appreciated. A long stay was made here, the rain coming down in a deluge; but those present were loth to leave, the welcome being so warm and hearty. The rain having given over on our entering the Uxbridge Road, and being saturated, we had made up our minds to stop to get rid of some of our damp clothes. We were, therefore, agreeably pleased to meet Mr. and Mrs. Wills at their house at Uxbridge, these kind hosts having thoughtfully provided afternoon tea. Their hospitality was much appreciated and taken advantage of by several members, but being so near London and the weather again so threatening many came right through to their destination.

#### Etceteras.

Taking the tour as a whole it must be pronounced a success, notwithstanding the inclemency of the weather. The arrangements and management were all that could be desired. The hotel accommodation was good, and although the Regent Hotel at Leamington is not in any way modern, yet the quietude of its precincts did much to soothe after the rush of the day's work was over. There is no doubt on these tours a lot of excitement and rush, and plenty of work for passengers and drivers. The distances that had to be travelled were great, but in no instance excessive, although we rather take exception to those who "clipped" off corners, and thus saved some miles, as we think when there is a "mapped out" route it should be followed, unless there is a breakdown. A word of praise is due to the police throughout the length of the way travelled. They were most courteous, and were only too anxious to assist and preserve a passage through the crowds which sometimes assembled, and their presence at awkward corners was quite invaluable. The tall iron standards in the Warwickshire country lanes also struck us as an improvement over the old and almost always illegible milestones.

## SCOTTISH NOTES.

#### More Motor-Pacing.

At the Northern Cycling Club's meeting at Glasgow on May 13th a more impressive performance was made by the mechanical "pacers" than on the occasion of the Glasgow merchants' opening meeting at Celtic Park last month. The track was dry and therefore safe, with the result that the "motors" could be let out and a display of their speed qualities given. Some fast work was accomplished when A. D. M'Farlane made an attempt on the ten-mile record.

#### The Stirling-Leyland 'Bus.

THE Stirling-Leyland steam omnibus which I described on May 12th has this week been running further trials at Hamilton, after having received the finishing touches in the "paint shops." The steady, even-running of the 'bus presents a very pleasing contrast to the jerky, irregular motion of horse-drawn omnibuses, and I experienced a sense of comfort in it which I assuredly never before did in an omnibus of any description. The vehicle is well suspended on elastic steel springs and the seats are furnished with easy spring cushions. The 'bus, in spite of its dimensions, has a light appearance, and in no way resembles the heavy, cumbrous-looking motor-brakes and omnibuses which I have seen on the Continent. The total weight of the vehicle is, I understand, about two tons. I think the makers are to be congratulated on the result of their efforts to produce a thoroughly reliable and comfortable 'bus.

**Motor Makers' "Outing."**

THE annual "outing" of the employés of Stirling's Motor-Carriages, Ltd., of Hamilton, is, I understand, fixed to take place to-morrow, May 27th. The whole party, which will number about 150, will be conveyed

from Hamilton in motor-carriages, and the procession of vehicles will pass through the City of Glasgow about 10 a.m. Through the kindness of Mr. Stirling I hope to take part in the excursion, and next week will give a description of the vehicles taking part, with photographs taken *en route*.

**The Glasgow Holiday.**

A MORE miserable day than Thursday of last week, when the denizens of Glasgow were supposed to make merry on account of the Royal "Birthday," is hardly conceivable. From a very early hour heavy, close-falling rain continued

almost without cessation until evening, making enjoyment out of doors altogether impossible. In spite of it all, however, I observed some half-dozen motor-car loadfuls of holiday-makers on the road. One or two of the vehicles were covered, which of course made the outing to some at least tolerable. The expression on the faces of the passengers in the open cars, however, was scarcely what could be described as "pleasant." It would be well, I think, in view of the repetition of such a day as Thursday, if motor-hiring concerns would provide their cars with tops, which could, of course, be made portable. It would certainly reduce the hesitancy on the part of excursionists to book their seats forward if they were assured that, whether the weather was propitious or otherwise, their trip could be accomplished with comparative comfort.

**The Scottish Cycle Trade and Motors.**

ENTERPRISING cycle agents everywhere are keeping a sharp look-out in order to miss no suitable opportunity of attaching themselves to the motor industry, and nowhere is the "look-out" keener than among the Scottish

agents. It has doubtless taken them some time to realise that it was possible to associate the new business with the old; but with the days of declining profits on cycles, the need of a new and vigorous allied industry has been pressed home with considerable force. The fact that well-known cycling enthusiasts, such as C. G. Wridgway, S. F. Edge, A. J. Wilson, J. W. Stocks, etc., had taken to the motor came at first as a shock, but it now appears to them quite a natural thing and what was to be expected; and many agents are making active preparations to meet the growing demand for motor-vehicles of various types. I would here offer one word of advice to cycle agents and others who may be contemplating taking up the motor trade, and it is this: You must be prepared by patient work to acquire a knowledge of the new business. A cycle is a comparatively simple piece of mechanism, easy enough to master. A motor-car of whatever type is a different matter; it is an engine as well as a cycle or carriage, as the case may be, and the engine, cycle, or carriage is not all. The engine will generate the power necessary to propel a vehicle, but a means of applying the power so generated is required, and this means the introduction of some form of transmission gear. One, therefore, at the outset has to make up his mind to master the more or less complicated mechanisms in addition to the ordinary details of a cycle and carriage. I do not wish it to be understood that this is a very serious thing to accomplish. I have, indeed, been surprised to see the success which some very unmechanical owners have with their motor-cars. What I wish to emphasise is that you must not expect, on getting delivery of a motor-car or motor-cycle from the makers, you will have immediate success in its management. You may have frequent disappointments until you have mastered the principles on which it is built and the methods of its construction, and you must make up your mind that there is a good deal to learn.

**Petrol Supply in Scotland.**

FOR the convenience of the increasing number of motorists in Scotland, or who may visit Scotland this summer, I append a list of the places where supplies of petrol may be procured.

The names with an asterisk are also repairers:—

|             |  |
|-------------|--|
| Glasgow.    | Peter Lee, 7 High Street.                          |
| *Hamilton.  | Stirling's Motor Carriages, Ltd., Campbell Street. |
| *Edinburgh. | Edinburgh Autocar Co., Abbeyhill.                  |
| *Do.        | Rossleigh Cycle and Motor Co., Ltd., York Place.   |
| Perth.      | A. S. McArthur, 30 Prince's Street.                |
| Dundee.     | Dundee and District Tramway Co., Lochee Depôt.     |
| *Aberdeen.  | Harpers' Motor Co., 33 Bridge Street.              |

"BROWN HEATHER."

**MOTOR-CARS ON THE CONTINENT.**

THE date of the fiacre competition approaches. Indeed, it is on the 2nd proximo that the tests of the vehicles are designed to commence. Two firms have already entered seven vehicles: Compagnie Internationale

de Transports Automobiles—(1) one cab, (2) one victoria, (3) one coupé, (4) one delivery carriage; Jeantaud—(5) one cab, (6) one coupé, (7) one mylord. This competition is open to (A) carriages for rural passenger services; (B) delivery carriages capable of conveying at least 500 kilos. of load; (C) delivery carriages capable of conveying at least 50 kilos. of useful load and driven by a single person.

**An Automobile Paper-Chase at Brussels.**

THE Belgian Motor-Car Club is organizing for decision during the early days of the month of June an automobile paper-chase, for which they expect a great number of entries. This form of sport is increasing on the Continent.

Good track layers furnish a fund of amusement by the intricacies of the courses outlined.

**Automobile Paper-Chase.**

THE *Vie au Grand Air* organized an automobile paper-chase, which was to be run off on May 21st, but owing to various circumstances it has been postponed until June 4th. The regulations are: (1.) The paper-chase contest is open to all the members of the Automobile Club de France, of the Rowing Club, and to the subscribers and guests of the *Vie au Grand Air*. (2.) There will be three classes with special prizes: (A) carriages, (B) motor-cycles, (C) carriages steered by a lady. (3.) The start will commence on Sunday, June 4th, at two o'clock exactly in the afternoon, at Fontainebleau. (4.) The course will be about 50 kilometres. (5.) Two control stations will be established on the run, and these will be indicated by green flags. At each of these stations the contestant will have to deliver one of the two tickets that are furnished him at the start. (6.) The carriage drivers of each class will have to bear distinctive coloured armlets. (7.) The finishing point will be indicated by a red flag. (8.) Any contestant starting before the starter's signal will be disqualified; for this purpose two observers will stand at 500 metres from the starting point. (9.) This paper-chase contest is under the presidency of M. le Caron de Zuylen; MM. A. Rignelle and de Morlhon will be the general observers. (10.) A *dejeuner* will be held at noon. (11.) The tracks will be indicated by pieces of red cardboard and bands of red paper stuck to the trees or walls (right-hand side). (12.) The entries will be closed on May 31st at midnight. (13.) The entries will be received at the *Vie au Grand Air*.

They must be accompanied with an entry fee of 3 francs, giving right to receive the *V.G.A.* during three months; the subscribers to the *V.G.A.* are free from the entry fee.

### The Contest for Amateur Chauffeurs

THIS contest was run off from Chaton to Beauvais and back, but has not carried off all the success expected. Out of thirty-five chauffeurs who entered only nine started, these being M.M. Gordon, Degré, de Neufelize, Werdeuseller, Champossin, Roge, Tampier, Chain and Lambert. The others were discouraged by the rain and the state of the roads. A great number of them, however, attended at the finishing point. Of the nine starters only Degré finished the course, but even he only succeeded after having changed his machine during the run, and as this was forbidden by the regulations the contest was abortive. All the other contestants were retarded by motor or tire accidents, so that no one machine successfully negotiated the course.

### Motor-Tricycle Records.

AT the Parc des Princes Vélodrome, Béconnais recently tried to beat the hour record on the track. He covered 10 kilometres in 10 min. 9½ s. (previous record, Béconnais, 10 m. 33 s.); 20 kilometres in 20 m. 29½ s. (previous record, Vigneaux, 21 m. 3 s.); 30 kilometres in 31 m. 7 s. (previous record, Vigneaux, 31 m. 14½ s.). The rain that had been falling for some time obliged the rider to give up the trial.

### Automobilism in the Herault Department.

THE motor-cycle race and automobile battle of flowers organized by the Société d'Agriculture de l'Herault on the occasion of its centenary promise to be carried out under the most brilliant auspices. The majority of the chauffeurs of the surrounding districts have already notified their desire to take part to the fête committee, and we learn that many are preparing gorgeous decorations for their vehicles.

### Tourcoing-Bethune Race.

THE Union Vélocipédique Tourquennoise has fixed July 3rd next as the date of its annual race, which includes an international motor-cycle class.

### Antwerp.

THE races organized by the Automobile Club of Antwerp on the occasion of the Cycle and Automobile Salon were run off attended by a numerous crowd both at the point of departure and on the road. The motor-cycle contest secured five starters and that of the carriages eight. The results are as follows:—

Carriages (45 kil.): 1, Baron de Crawhez, 1 h. 16 m. 26 s.; 2, Grégoire (of Brussels), 1 h. 35 m. 54 s.; 3, Daubrevey (of Brussels), 1 h. 47 m. 50 sec.; 4, Jos de Crawhez, 1 h. 49 m. 1 s.; 5, Tserclaes, 2 h. 22 m. 30 s.

Motor-cycles (75 kil.): 1, René Kuhling, 2 h. 20 m. 57 s.; 2, Rivierre, 2 h. 22 m. 23 s.; 3, Deroeck, 2 h. 59 m. 55 s.

After the race the prizes were distributed at the Salon du Cycle under the presidency of M. Ponthoz Van der Straeten, the President of the Automobile Club Belge. In the evening a banquet was held at the Hotel de Londres.

### A Belgian Challenge.

THE success that until now has attended the Belgian chauffeur, P. de Crawhez, has led him to throw down a challenge that is plucky but which is not by any means certain of fulfilment. The winner of the Brussels-Spa contest has offered to stake one hundred louis (£80) that he will cover the distance Brussels-Paris and back in

twenty-four hours' time. If he finds an acceptor, the attempt will take place in the early days of June, when the days are long and the break of day is early. M. de Crawhez has selected his route through the North of France; he has full confidence in his ability to successfully make the journey in the time, and has even promised that should he not succeed at the first attempt, he will try again until success attends his efforts. To be successful the Belgian chauffeur would have to keep up an average speed of thirty-four kilometres per hour during the whole twenty-four hours. This leaves very little margin for tire accidents, obtaining spirit supplies, and the like.

### The Paris-Zurich Record.

OUR Paris representative, M. Dick Farman, whom we previously announced was endeavouring to cut down the record between Paris and Zurich, has effected the 430 kilometres without any impediment, reaching the halting-places he had proposed every day.

### The Berlin Electrical Omnibuses.

A TRIAL of a new electrical omnibus has been carried out in Berlin. The course, about two miles in length, was from Reichstag Hall to the Charlottenburg, and the run occupied 25 minutes. The omnibus is driven by two motors, which work by means of cog-wheel gear on the hind wheels. The carriage, which is built like a tram-car, has twelve seats and standing room for six persons at the back. The front part is reserved for the sole use of the driver. The accumulators are fixed under the seat, and have a capacity sufficient for 20 kilometres. The carriage is steered by a lever, and is provided with a mechanical brake and an electric brake. The electric brake brings the carriage to a standstill in 1.5 metres space when going at full speed. The weight of the carriage is 3,500 kilograms. Its cost is about 15,000 marks.

### Paris-Bordeaux Race.

THE great Paris-Bordeaux race, which was over a distance of 565 kilometres, has been covered by Charron, the winner, within 11 h. 43 m. 20 s. In Bordeaux a large number of Parisian chauffeurs watched anxiously the signal of the first car's arrival. Out of seventy-four entrants, sixty-five took part in the contest. At 3 h. 15 m. 20 s. o'clock Charron (with a 12-h.p. car from Panhard & Levassor) arrived first in 11 h. 43 m. 20 s. M. René de Knyff came second at 3 h. 22 m. o'clock, having covered the distance within 11 h. 50 m. with a 12-h.p. car from Panhard & Levassor. Two accidents have been reported. One spectator at the corner of the Rue Chautiers at Versailles fell dead through fright at the terrible speed at which Charron had turned round the corner. At St. Cloud M. Lemaitre, the Nice champion, ran into the rear of the carriage of M. Gilles Hourgieres. M. Lemaitre's engineer was thrown over ten metres from the violence of the shock, and, of course, very seriously injured. Mons. Lemaitre was so painfully impressed by the accident that he preferred to give up the race. At the time of going to press the motor-cycle results had not reached us.

A RACE for motor cycles is to be included in the Harrogate Camp programme.

It is reported that the American rights of the Krieger electrical cab and other vehicles have been secured by the New York Autotruck Co.

THE New Coventry Cross Cycle Co., a reconstruction of the Coventry Cross Co., has taken powers to deal in and manufacture light motor-vehicles.



## PETROLEUM MOTOR-VEHICLES.\*

By JAMES D. ROOTS, M.I.M.E.

(Continued from p. 159.)



FIG. 14 is a section of this vertical oil motor. *A* is the cylinder, *B* piston, *C* crank, *D* balance weights, *E* taper on shaft to enable taper brasses to take up slack, *F* small toothed wheel, *G* toothed wheel having twice the number of teeth of wheel *F*, *H* eccentric with wheel *G*, *I* reciprocating rod carrying a rocket weight governor on the pin *J* for opening the exhaust valve *K*. The pin *K*<sub>1</sub> operates the lever

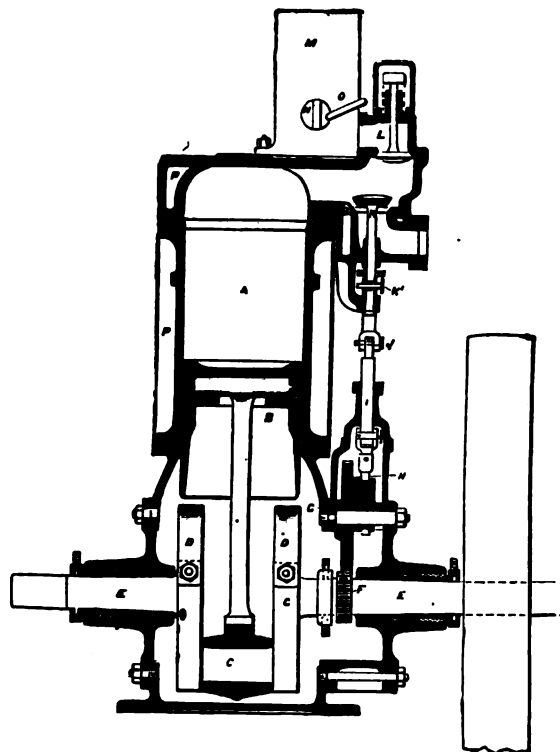


FIG. 14.

which reciprocates the usual oil feed spindle of the Roots oil engines. *L* is the admission valve, opening directly into the vaporiser. *M* is the casing containing the air-heater and vaporiser, having at its centre the ignition tube *N*, of nickel alloy or of platinum. The engine is started with an ordinary pressure burner, which is then put out, and the heat is maintained by an automatic burner fed by the engine, a portion of which is shown at *O*. A second groove is cut on the oil feed spindle, the oil from which is swept off by an air blast supplied from the closed crank-pit, the air and oil being mixed and vaporised in the pipe *O*, and directed upon the ignition tube *N*. *P* is the water-jacket.

Fig. 15 shows a pair of the motors illustrated in Fig. 14, fitted together to form one engine. This duplication formed an exceedingly simple, compact, and powerful engine, as it gave 5½ brake horse-power. Shortly after it was completed the author came to the conclusion that it was advisable to make all vehicle motors in future horizontal, and motors of this design were therefore not used for vehicles, but one of them drove a heavy launch on the river satisfactorily for some years.

Mr. J. H. Knight, in his "Notes on Motor-Carriages," says he commenced the construction of a petroleum-driven tricycle in the spring of 1895, and had it running in July that year with petroleum spirit, and that he afterwards fitted a vaporiser and ran it with petroleum oil. His little volume gives an illustration of this vehicle. The back wheels were 3 ft. in diameter, and the steering wheel 2 ft. 6 in., fitted with 1½-in. solid rubber. The total weight was about 5½ cwt.

A photograph of a car which the author understands was built by Daimler in 1895 is interesting, as showing a step in the process of development and improvement. It is also interesting as showing how two minds working upon the same problem quite independently may arrive at a very similar step in the process of development. It will be seen how similar in the construction of the frame and the steering arrangement this petro-car is to the one next described. It has been stated that water was used in the tubular frame, but the author has no evidence of this.

The second vehicle, constructed by Messrs. Roots and Venables in the summer of 1896, was also built largely on cycle lines, so far as regards

the steering arrangement and frame. The double tubular frame was carried round the vehicle from the cycle head on the one side to the cycle head on the other. The tubes were also of like gauge and diameter to that in use upon an ordinary bicycle, but they were doubled. The tubes were connected together by malleable iron joints brazed in position. The four wheels were of heavy cycle construction, having spokes ¾ in. thick, and fitted with pneumatic tires. The front wheels were fitted with ball bearings, while for the back wheels the ball bearings were on the axle. The body weighed 1 cwt. The water tank in front of the vehicle held ten gallons of water. The motor at the rear of the vehicle, which was mostly beneath the seat, was of 1½ brake horse-power. It used equally well American Tea Rose, Royal Daylight, or Russian oil, the Russoline brand. The total weight of the motor, including fly-wheel, was 140 lb.

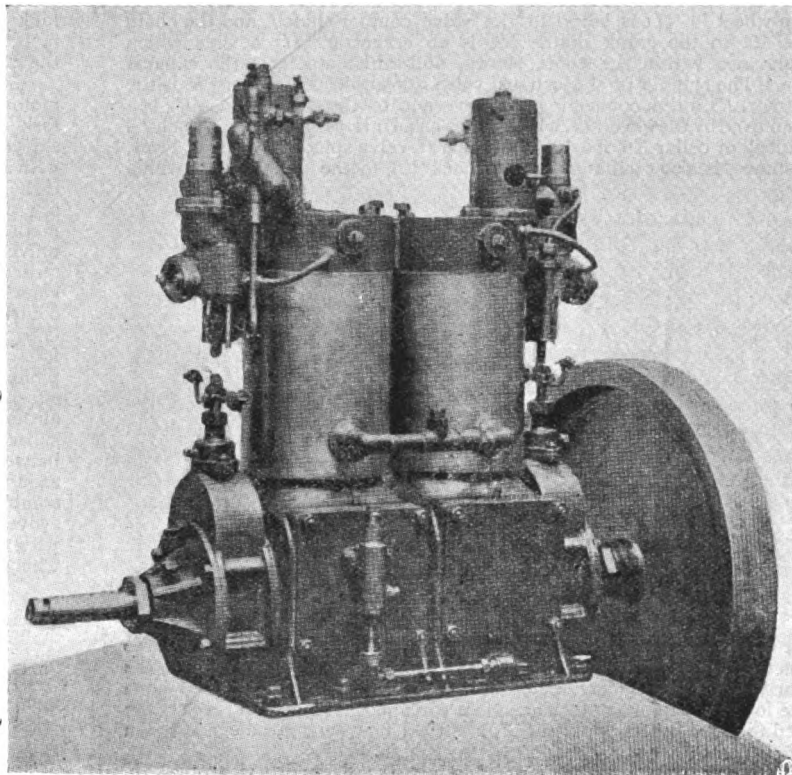


FIG. 15.

As in all the vehicle motors of these makers' construction, the crank chamber formed an air-tight enclosure.

The essential working parts, the crank and piston, being completely protected from dust, it was not thought so essential in this vehicle to cover in the motor. A pump driven by the motor maintained a constant circulation of water round the jacket of the motor, through the tubular

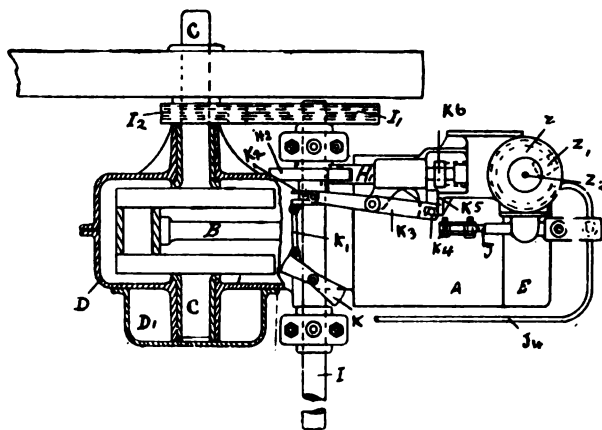


FIG. 18.

frame of the vehicle on the one side to a water tank placed in front between the steering wheels, and back again to the motor by the frame tubes on the other side of the vehicle. The total weight of this motor-vehicle was 5 cwt. After running about 3,000 miles, it was superseded by another vehicle, having later improvements.

Fig. 18 shows the oil motor of this vehicle in part sectional plan. It was a horizontal single cylinder engine 4½ in. by 5 in., and at that time

\* A paper read before the Society of Engineers, May 1st, 1899.



gave only 1.65 brake horse-power. The author has since succeeded in getting 2.2 brake horse-power out of the same size of motor. *A* is the cylinder, *B* the connecting rod, *C* the crank shaft, *D* the crank chamber made air-tight, and in which the crank *C* runs in an oil bath. *D*<sub>1</sub> is a reservoir or chamber in which air is maintained under pressure. Very small air valves for suction and delivery are fitted to the crank chamber, so that the movement of the piston draws air into the crank chamber and delivers it under pressure to the chamber *D*<sub>1</sub>. An equable blast of air is maintained in this way through the pipe *J*<sub>4</sub>. This air blast has delivered to it a minute feed of oil by the oil feeder *J*, and the two are mixed together and heated inside the vaporiser to maintain a small blue flame of the blow-pipe order upon the platinum ignition tube *Z*<sub>2</sub>. This flame also heats the vaporiser *Z*. *Z*<sub>1</sub> is the burner used for starting, and is of the ordinary pressure or blow-lamp description.

*I*<sub>1</sub> is a chain wheel of twice the diameter and number of teeth of the chain wheel *I*<sub>2</sub>. *I*<sub>1</sub> is keyed to the valve counter-shaft *I*, and the chain wheel *I*<sub>2</sub> to the crank shaft. *H*<sub>2</sub> is an eccentric. *H*<sub>1</sub> a slide which reciprocates within the guide shown, and which operates the exhaust valve. The spindle of the exhaust valve fits within the guide. *K* is the governor, *K*<sub>1</sub> a link connecting the governor to the sleeve *K*<sub>2</sub>. *K*<sub>3</sub> is a lever moved by the governor, which slides on an intercepting piece *K*<sub>5</sub> behind the block or collar *K*<sub>6</sub>, fixed to the exhaust valve spindle. A small lever, not shown, is also oscillated by the block *K*<sub>6</sub>, to the upper end of which

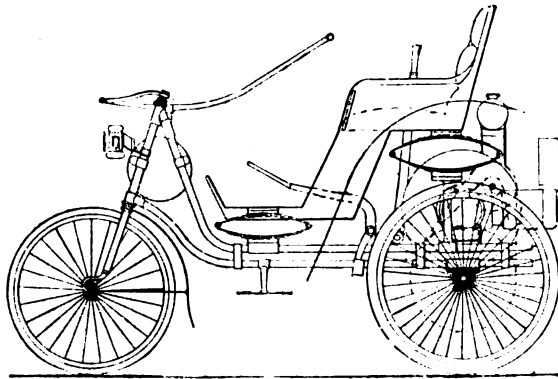


FIG. 19.

lever is attached, by the links shown, the oil feeder *J*. The oil feed spindle *J* has two grooves cut in it, one of which measures and feeds oil to the vaporiser for the cylinder; the other, a very small one, performs the same office for the automatic burner. The air and oil, heated and intimately mixed together in the vaporiser *Z*, are then conveyed to the admission valve beneath the vaporiser.

This car was fitted with pneumatic tires; each tire was of 2½ in. diameter. The front wheels were 28 in. diameter, the back 32 in. These tires were an improvement upon the solid tires of the previous car in some respects. In the first place they never left the rim, and they ran smoothly over tram lines, however uneven the surface might be—i.e., whether the lines were above or below the ground surface; in fact, these tires appeared to take no notice whatever of grooves of this sort, and this is a very great advantage. They steered easily, gave very smooth running, and reduced vibration, not only that due to uneven road surface, but also that due to the motor. On the other hand there are the greater expense, increased side slip, continuous trouble with leakages of air pressure and the necessary re-pumping, and, lastly, the delays for patching the inner tube. The latter disadvantage only came into play after three or four months' use, when the car had probably done 2,000 miles. The second disadvantage was only noticeable upon certain conditions of road.

In February, 1897, the author was requested to exhibit the car at the Battersea Polytechnic. Nine Elms Lane is laid with stone setts and tram lines, with a delightful disregard of a plane surface. The road was very greasy, mud of the smooth, pasty order, and the author was a little late. There is a short hill at a narrow part of the lane, and he thought it a good opportunity for a quick run down. A tram-car, about twenty yards in front of the motor-car, suddenly pulled up at a narrow part and another vehicle closed the only passage. Although the author locked the back wheels the motor-car continued its way down the incline at only a slight angle with the line of motion, until the front-wheel tires gently collided with the back of the tram. The author has not had a puncture through the cover, but the inner tubes would never hold the pressure for a reasonable time, and the continuous trouble they give in their present stage of development outweighs whatever advantages they may possess on the other side of the balance.

The transmission gear of this car was altogether different to that of the tricycle before built, and of the carriage or petro-car. Two small flanged wood pulleys were keyed to the countershaft, and two large flanged wood pulleys were keyed to the axle tube, to which was also fixed at the other end the balance gear box. On the shorter arm of the hand operating lever were attached two small jockey pulleys, both running upon ball bearings. Both jockey pulleys being upon the same arm, and being placed between the upper lengths of the two belts, the extreme position of the jockey pulley in one direction tightened one strap, and the extreme position in the other direction tightened the other strap, while the intermediate position left both straps too loose to drive.

This car ran very satisfactorily except for the trouble given by the straps; they would stretch, break, and slip, slipping so much at times as to refuse to drive at all. The straps generally selected some spot where the traffic was thickest, and therefore it was most undesirable to have anything of the sort occur. They refused to drive in this way once when stopped by the traffic-regulating policeman in front of the Mansion House, and on another occasion at Piccadilly Circus. It was such occasions as these, particularly at this date (1896), when cars were so few, that gave the drivers of 'buses and cabs a golden opportunity for the display of that kind of sarcasm and humour in which they are such adepts, and they generally make use of the opportunity to the full.

Another method of arrangement of straps was also tried upon this vehicle, but the author's experience of them and their unreliability made him resolve never to use straps on a motor-vehicle again. In Fig. 19, which is an outline elevation showing the position of the parts, an oil tank is shown at the back of the seat over the motor. The vaporiser is bolted to the cylinder cover, and the water tank is in front of the car.

There are four distinct methods of arrangements of gear for steering a motor-vehicle. The first, which is the simplest, is that by means of a fork-steering head and handle, as in an ordinary bicycle or tricycle, as shown in Fig. 12, which is Messrs. Roots and Venables' earliest carriage with a single front steering wheel. Precisely the same principle is involved if the steering wheel be duplicated in the same vehicle and the two heads are connected together by a link, as shown in Fig. 19. The second method is the ordinary Ackerman steering, and which is now almost universally used for motor vehicles other than cycles. The third constructional method is that at present so widely used in horse-drawn vehicles, but without shafts and with some gearing added to render it controllable by the driver. The usual method of carrying this into effect is by fixing a quadrant or rack to the usual wheel plate and rotating the fore-carriage wheels on the perch-bolt in either direction by means of a pinion or screw gearing into the rack or quadrant. The fourth method of effecting the steering is much more unusual, and indeed rare. In fact, the author is under the impression that it possibly originated in one of his subsequently modified designs. It is to a certain extent a compromise between, or hybrid of, the first and second methods described, as there are the two steering heads connected by a link and operated by one handle combined, but minus the forks; each ball-bearing head is bolted to the swivelling arm of the Ackerman steering, except that the arm is forged with the axle bearing of the wheel, and the sleeve is forged with the axle. This method of steering was applied, shortly after the abortive *Engineer*

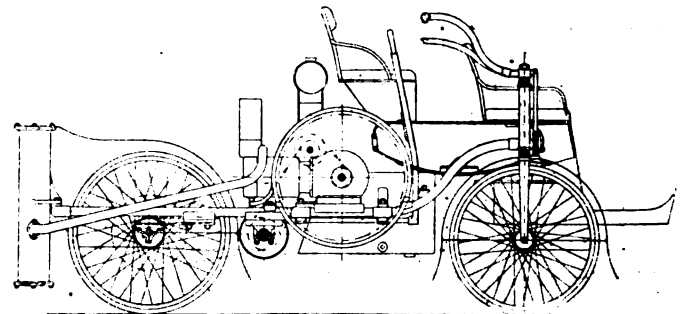


FIG. 21.

competition, to the four-seat car. It is, however, more costly, and complicated to make than the Ackerman method of steering. It was, nevertheless, very satisfactory in all other respects. The system, usual in ordinary carriages, of swivelling the whole axle and wheels upon a central or perch-bolt may serve well in electrical carriages, but the author is afraid with the vibration of a petroleum or steam car it would not be a satisfactory steering arrangement.

In many of the earlier attempts at producing a petroleum motor-vehicle, the steering was effected by means of a fork and head, similar to those of a bicycle or tricycle, following that line in which success had been most pronounced. It was generally assumed that this method of steering, so thoroughly tested and perfected for velocipedes, was the right method to employ for the motor-vehicle, especially those of light build and weight. Even now many new comers in the field of road locomotion adopt this method of steering, but having fully tested it for motor-vehicles, they generally, sooner or later, give it up for the Ackerman steering arrangement or some modified form of it.

Most of the early petroleum motor-vehicles were built with frames constructed of cycle steel tube, and more or less of the cycle method of construction. In the three-wheel vehicle which the author's firm constructed for the *Engineer* motor-vehicles competition at the Crystal Palace in June, 1897, the frame was of light steel tube. Fig. 21 is a line elevation showing the position of the parts. This car was the only petroleum motor-vehicle that ran to Birmingham on that occasion. The only other competing car which also ran was the Lifu steam van. The vehicle shown in Fig. 21 was designed and constructed by the author's firm in advance of the four-seat car following, but as they were both constructed for the *Engineer* competition, they were practically made simultaneously. The intention was to have had them both ready two months before the competition to enable them to be thoroughly tested. But they were not either of them really sufficiently ready at the time of the competition.

As will be seen there were two seats placed tandem. The centre line of the motor was coincident with that of the back wheel and in the same plane. The back wheel was the driving wheel, the two front were steerers in the manner shown by cycle heads and forks. The fly-wheel on the one side was balanced by a tank holding  $4\frac{1}{2}$  gallons of water placed upon the other side. The exhaust box or silencer was placed in a very prominent and unsightly position at the back of the frame behind the driving wheel. This would have been altered if there had been time before the date of the competition. The tank for the Tea Rose kerosene was placed just at the back of the driver. The steering was effected by a steel tube link forming the handle placed between the two riders, and which at each end was connected to the levers fixed to the top of the steering heads of the front wheels. The coil of copper pipe was fixed round the periphery of the fly-wheel, leaving about  $\frac{1}{2}$  in. between it and the coil. The centrifugal action of the rotating fly-wheel throws off sufficient air to make a very efficient water-cooler of the coil. A small pump circulates the water through the jacket, coil, and tank in the order named. The same horizontal motor was used upon this car as upon the previous one.

In the four-wheel motor vehicle having four seats, which the author's firm also entered for the *Engineer* motor-vehicles competition, the frame was built of cycle tubing throughout. The double tube was joined up at intervals round the sides of the frame by means of malleable iron castings, and all the joints and connections were made in this way. The object, of course, in using the tube is to make the frame light and generally save weight, but in all those cases in which the makers have tried it up to the present, this object, owing to the great weight of the malleable iron joints, has not been attained. Indeed, the weight of the frame finished has always been rather greater than it would have been by using angle or channel iron or steel. This latter—viz., channel—is the section they have adopted, and will continue to use in all their vehicles, until such time as the industry becomes so advanced that they are able to purchase ready-made frames in steel tube. There is, however, one great advantage in the use of steel tube which must not be overlooked, and that is, being able to utilise the frame for the conveyance, and therefore cooling, of the water from the motor jacket to the water tank, and this the author believes was first mentioned in his specification No. 23,786, of 1892.

(To be continued.)

J. G. STONE, U.S. Consul-General at Cape Town, South Africa, writes that several English and French motor-vehicles are in use there for pleasure and for carrying the mails. He wishes to buy a motor-carriage himself.

On the 22nd inst, Eliza O'Neill, a servant in the employ of Mrs. Jury, of Greenfield, Stillorgan Road, Dublin, was knocked down at Merrion, by a motor-car, the property of Mr. M'Taggart, of Deepwell, Blackrock. Miss O'Neill received injuries which necessitated her removal to Monks-town Hospital.

THE Mark Cross magistrates on the 23rd inst. imposed a fine of £7 10s. and costs upon Mr. George Arnold, of Tunbridge Well, who was one of the pioneers in the use of motor cars, for not stopping a motor-car he was driving at Mayfield, when signalled to do so by a lady and gentleman who were driving restive horses. A further charge of travelling at too great a speed was dismissed.

IN answer to an enquiry made by the French Government as to the duty on horseless carriages or automobiles or parts thereof imported into the United States, the United States Treasury Department has replied that "such horseless carriages or automobiles will be subject to duty on importation at the rate of 45 per cent. ad valorem as articles or wares composed wholly or in part of metal, under paragraph 193 of the Act of July 24th, 1897."

THE London Auto-Car Co., Ltd., of Gray's Inn Road, W.C., has issued a retail price list of motor accessories, spare parts and sundries which does infinite credit, to its enterprise, surpassing as it does any of the lists of the larger companies, by whom indeed it might well be taken as a model. Practically every accessory and spare part in connection with the Daimler and Panhard cars, the Beeston and De Dion tricycles, Hurtu and Benz cars, and Bollée voituresses are included. Some idea of the completeness of the list can be gained from the fact that the catalogue of parts and accessories of the Beeston and De Dion tricycles fills five complete pages. From a cursory examination, the prices appear to be moderate, and the Company is to be congratulated on having produced so satisfactory a list, which it will no doubt improve upon and increase as time goes on.

## SOME AMERICAN STEAM-DRIVEN MOTOR-VEHICLES.

By HORACE L. ARNOLD.

(Continued from page 174.)

As motor-vehicle engineers will readily understand, a pair of  $2\frac{1}{2}$ -in. steam pistons with 140 or 150 lb. of steam behind them can handle this 400 lb. carriage with 300 lb. load with ease. The wheels are all alike, tangent spokes, and 2-in. tandem tires, 28-in. nominal diameter, really 29 ins.; the gauge is 52 in., and the wheel base is 62 in. The wheels have Fairbank's laminated wood rims, and the tires, by the Hartford Rubber Co., cost only 12 dols. per set of four, which is quite a different figure from the 200 dols. per set of four tires demanded for the electric or storage battery carriages.

To start from cold water the gasoline vaporizing tube must first be heated with a hand gasoline torch until vaporised gasoline fills the burner; this takes  $1\frac{1}{2}$  minutes. The fire lights itself from the hand torch so soon as the vapour begins to flow into the burner, and in three minutes more the steam gauge will show 25 lb., which will handle the carriage with ease. The extreme speed is about twenty-five miles per hour with two passengers up.

On the road, hills are not noticed at all by this wagon. On a 10 per cent. grade, with Stanley and the writer on board, the car was stopped with the rear wheels in a depression deep enough to hold the car quite still without the use of the brake. The steam gauge showed 140 lb., and the car started with a jump when the throttle was opened, and accelerated to fifteen miles per hour in travelling 100 ft., which reached the top of the grade.

The exhaust is carried up over the top tube sheet of the boiler, and inside a rearward horizontal extension of the smoke bonnet to a downwardly opening smoke stack, through which the products of combustion are discharged by the action of the exhaust steam, which shows only a very little, or not at all in warm weather, and forms only a mere wreath of vapour in the trail of the carriage when most visible. The fire makes no roaring, a kind of humming noise being audible if listened for close to the fire box, but not otherwise. The engine and chain are noiseless also. The exhaust is distinctly audible, but no horse met in the course of a somewhat extended drive on a country road paid any attention to the Stanley car, and the same was true of the Whitney car, only one solitary horse in the course of several hours' run through the streets of Boston and vicinity being noticeably agitated by our appearance, although hundreds were met and passed. This leads to the conclusion that it is the outline of the vehicle which frightens the horse, as the Stanley and Whitney cars are almost exactly like ordinary American carriages for two persons.

At the extreme rear of the Stanley carriage body there is a very short vertical uptake, communicating freely with the smoke bonnet, which passes the products of combustion upward when the engines are not working. The fire regulator acts in one or two seconds, so that there is seldom much fire burning when the engines are not using steam. In fact, the whole automatic regulation of this Stanley boiler is so perfect as to demand no attention whatever from the driver, who has merely to move the throttle lever with his right hand to obtain the speed he wishes. The brake is operated by a treadle, and the steering is very light and easy. Stanley often releases the steering lever altogether, which, however, cannot be regarded as a safe and proper procedure at any time, any more than it would be proper to drop the reins when driving spirited horses; in fact, it is really much less proper, because the horse when not frightened out of his senses will usually keep the road of his own accord, while a motor-car is liable to "shy" if one of the front wheels meets an obstruction.

Two gauges are provided on the inside of the Stanley dash-board, one for the steam pressure, and one for the

air pressure in the gasoline tank, which is kept up by a hand pump.

With 8 inches of water in the boiler and 12 gallons of water in the water tank, the Stanley car can run about forty miles without taking more water, and the carriage regularly runs twenty-five miles with a gallon of gasoline, which is only about what the best explosion engine-driven carriages require. How it is possible to obtain such a fuel economy with steam propulsion is not quite clear. Probably the clean fire and clean boiler tubes, of only a little more than paper thickness, account for this performance when the fact of absolutely perfect combustion is remembered.



FIG. 7.—MR. MASON IN HIS STEAM CARRIAGE.

The writer fully believes that, on fair roads, the Stanley steam car is equal at all points to anything in the way of an automobile ever shown, and as it emits no offensive odour, makes no appreciable noise, and does not frighten horses, and leaves the driver more liberty than he can have when guiding a quick horse, it appears that Stanley has really succeeded in producing a wholly unobjectionable steam-driven carriage.

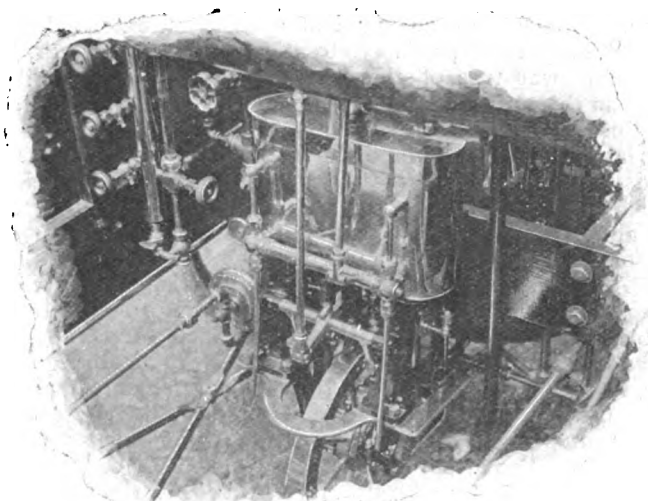


FIG. 8.—MASON'S ENGINES—VIEW FROM RIGHT.

This is a step in advance, if true, and must lead to the large use of these carriages as soon as they can be had at the price of 600 dols., as is proposed by the Stanley Brothers.

Fig. 7 shows Mr. Mason in his beautiful little steam car, which has the Stanley boiler and burner and the Mason regulator and the Stanley frame and wheels and steering level. As Mason uses piston valves and a link valve motion, he has three levers on his quadrant stand at the right of the

seat, the outside one for the cylinder cocks, the middle one for the link motion, and the inside one, latching to a very finely notched short quadrant, for the throttle valve lever. Mason drives with the same chain used by Stanley, but his engines are smaller, being only 2 in. bore with 3 in. stroke, and he uses a lower gear, with an 8-teeth sprocket on the engine shaft, and a 32-teeth sprocket on the compensation casing, which produces a 4 to 1 reduction.

Mason's wheels are 29 in. diameter, of the same construction as Stanley's, having ball bearing hubs. The car has a 50 $\frac{3}{4}$ -in. gauge, and 56-in. wheel base.

While the Mason car is not precisely identical with Stanley's, the two are so similar that the numerous illustrations of the Mason car are generally applicable to the Stanley car.

Mason uses a 12-lb. fly-wheel on his engine shaft, with a view to equalising the motion when the links are "hooked-up short"; this fly-wheel is plainly shown in Figs. 8, 13, and 14. Experiment only can determine the advantages of this fly-wheel.

(To be continued.)

THE Canford Cliffs Motor-Omnibus Co., Ltd., was registered on May 12th by R. L. Butler, 70 Mark Lane, E.C., with a capital of £2,000 in £1 shares, the object being to maintain and work a line of motor-cars or omnibuses to and from the Canford Cliffs Estate, Poole, Dorset.

SUNDRY motor-car breakdowns have taken place of late on the Brighton Road. A novel sight was presented the other day by W. Fagg and a friend on a tandem safety towing a disabled car, weighing some 5 cwt., with the owner up, a distance of twelve miles to a harbour of repair.

MESSRS. ROUGH, of Hereford, have constructed an automobile in which the transmission of power is by means of friction gear, and the speeds are four and ten miles per hour. The motor is 2 h.p. and the carriage is designed to carry two persons, and is said to weigh 4 $\frac{1}{2}$  cwt. The vehicle is only an experimental one.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 13.]

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## COMMENTS.

### The Alleged Breakdowns of Electrical Cabs.

IN our last week's issue we published an extract from a morning contemporary which alleged that seven of the London Electrical Cab Co.'s vehicles were brought to a standstill in Farringdon Street owing to breakdowns on the occasion of the inaugural run of the vehicles on Wednesday in last week. From a letter which appears in another column it will be seen that Mr. Walter C. Bersey, the Chairman and Managing Director of the Company, categorically denies that the breakdowns occurred as alleged. It is a great pity that our contemporary should have admitted the statements to its columns without some verification; we know from experience that this is frequently a difficult task, but a contributor who so thoroughly drags his paper in the mire by contributing reports of purely imaginary events and dishing them up as sober facts is utterly unworthy of further employment. As we remarked last week, none of the breakdowns were alleged to be due to mechanical faults or derangements, but, as reported, were supposedly due to the want of skill of the drivers. In conversation with Mr. Bersey on Tuesday last we discovered that this matter of securing the services of properly trained drivers is at the present time exercising the Company's mind considerably, and materially affecting its prospects. In regard to drivers for unlicensed vehicles, those let out on private hire, there is no difficulty. All the trouble arises with licensed cabdrivers. Many have sought to lay down such conditions of employment as entirely preclude their acceptance, whilst others, knowing that the season is now at its height, prefer to keep to horse-drawn vehicles during the fine weather, quietly intimating that when the season is over they will take up the electric cab again. The "downiness" of the London cabman has become proverbial; indeed a police official recently informed the writer that as a body the police would much prefer dealing with known bad characters than with the almost equally troublesome and even more artful London cabman. Mr. Bersey's experience with them is a terrible one. He told us the other day that one driver had travelled forty miles, as ascertained by the meters of his vehicle, and yet he had the impudence to tender 4s. as his day's takings! The Taximeter Syndicate are finding equal trouble with the cabmen they employ. They use all manner of tricks to upset the mechanism of the register, and generally seek to "bluff" the Company when these tricks are unavailing.

### The Control of Motor Racing.

IN another column of the present issue there appears a moderate and thoughtful letter from the Hon. Secretary of the Motor-Car Club in regard to the control of motor vehicle racing and the ill-advised course taken by one motor-car organization in regard to its effort to control this sport without studying the wishes of participants or seeking to make its rules acceptable to those outside the confines of its own membership. We trust that the Automobile Club will reconsider its position in this matter, and recognise

that it is not possible for even the strongest body to control those who for various reasons have no desire to be admitted to the select ranks of its membership even did its election committee permit their admission. A correspondent has pointed out the anomalous position of the Automobile Club in asking "those interested to forward suggestions" to the committee for framing the rules controlling motor racing. Apart altogether from the admission of weakness implied in the making of such a proposal, our correspondent points out that were "those interested" to follow the request it would result in their having to submit a complete code of rules. If the Automobile Club wants suggestions, it is obvious that the only proper way to obtain them would be to publish the Club's suggested rules and then ask "those interested" for suggestions.

### The Trials of Heavy Vehicles at Liverpool.

YESTERDAY was the last day for receiving entries for the trials of heavy motor-vehicles in August next at Liverpool, but the Liverpool branch of the Self-Propelled Traffic Association, who, in conjunction with the Royal Lancashire Agricultural Society, are responsible for the inauguration of these trials, will no doubt give every consideration to those entries that may arrive after that date, owing to inadvertence. The trials will be conducted over a route of thirty to forty miles in length in the neighbourhood of Liverpool, and as Mr. E. Shrapnell Smith is mainly responsible for the arrangements it may safely be concluded that they will be excellent and complete in every detail, as was the case last year. No one who has not taken part in the inauguration of similar trials can form any conception of the vast amount of labour involved, and we trust that those who have not yet sent in their adhesions will delay no longer, and thus in some measure lighten the task of the hon. secretary and council of the Liverpool S.-P.T.A.

### "Movements" in the Motor-Car World.

THE present time is certainly a period of "movement" in the motor-car world, and in almost every section changes are taking place in the *personnel* of most of the more prominent trading bodies. We recorded the other day that Mr. Instone had resigned the secretaryship of the Daimler Co., whilst it is a well-known fact that one of the directors of that Company has also seen fit to separate himself from his colleagues on the directorate. The chief clerk of the company has also resigned and taken up other employment, whilst Mr. A. H. D. Altree, the Company's commercial manager, is the latest to sever his connection with the Daimler Co. We recently recorded the resignation of one of the Motor Manufacturing Co.'s chief mechanics, and this is now followed by the resignation of the chief of the Company's sale branch, Mr. Percy Richardson severing his connection with the Company to-morrow. In regard to the secretaryship of the Daimler Company, this position has been filled by the appointment of Mr. J. Ware, whose selection dates some weeks back, and who is by this time thoroughly at home in his new sphere. Mr. A. H. D. Altree

is starting in business for himself as an agent for motor-vehicles, and also as the vendor of a solid tire of which he has a very high opinion. These "Dara" tires will furnish the trading name of Mr. Altree's firm, its title being the Dara Tire Co., whilst its present offices are at Piccadilly Mansions, Shaftesbury Avenue, W.C., quite close to Piccadilly Circus. Mr. Altree's old position with the Daimler Company appears to be divided now into two distinct portions; the management of the London show-rooms is entrusted to Mr. Pedley, who has for some long time been connected with the London Motor-Van and Wagon Company, whilst Mr. Percy Richardson, late of the Motor Manufacturing Company, becomes the chief outdoor representative of the Daimler Company, and takes over the superintendence of agents, etc. We wish all these gentlemen success in their new spheres; most of them are personally known to us, and we can speak confidently of their business abilities and general capacity for conducting commercial duties.

#### The New Brighton and Seacombe Motor-Car Service.

MR. W. MILLER-METCALF has been good enough to send us a photograph representing the first car-load of passengers carried on the inaugural trip of the New Brighton and Seacombe motor-car service; but this unfortunately arrived too late for reproduction in the present issue. The first public journey was commenced at 2.30 on Saturday last, and the first car-load of passengers consisted of a troupe of niggers who were conveyed from New Brighton to Seacombe. The inauguration of such a service with such a load of passengers naturally created some amount of excitement, more especially as during the whole journey the minstrels gave selections from their extensive repertoire. Mr. Miller-Metcalf, who is the leading spirit in the Liverpool and New Brighton motor-vehicle services, drove the car himself on its first journey, and had "quite a lively time" with his first load. The car, carrying nine persons, filled completely on every journey, and accomplished the run between New Brighton and Seacombe (2½ miles) in from ten to twelve minutes, according to the state of the traffic. The horsed omnibuses take between twenty-five minutes and half an hour to cover the same distance; so that there is no cause for wonder that the motor-char-a-bancs was well patronised. A conversation held between some of the 'bus drivers was overheard very late on Saturday night, and proved very amusing. Said one Jehu, "I thought the beggar was into me half a dozen times." Said another, "What puzzles me is how he gets in and out of the traffic in such a way as he does." Another remarked, "What I can't understand is the motor-car, leaving at the same time as I did with a full load, passing me on its return journey almost before I got half-way on my outward one. I began to think it was only going half-way, but I jolly soon found out it wasn't when I tried to keep up with it on one trip." In the result it was acknowledged that directly more cars are put on the service so soon would the 'bus drivers' occupation be gone; and another result is that Mr. Metcalf has received numerous applications to be "taught to drive them handy motor-cars."

#### A Speed Indicator and Chronograph.

WE have received from Mr. Robt. S. Roberts particulars of an extremely ingenious apparatus which shows instantly and automatically the rate of speed attained by a vehicle over any given distance. It does not record the distance traversed but only the rate of speed per hour over a known distance or during a given interval of time. No calculations of any kind are required to ascertain results. It is a case of "you push the button" and the instrument "does the rest." All that is necessary is that on passing a milestone the chronograph must be started by pushing the button; on passing the next milestone push the button again to stop the chronograph. If the speed is under sixteen miles per hour the result is

automatically recorded on the front dial, a small hand pointing to red figures giving the speed per hour. If the speed is greater than fifteen miles per hour a special dial is employed on which the figures are given in different colours. A small hand refers to the colour in which the figures covered by the large hand are to be read, the large hand covering four rows of figures, each row being of a different colour. The figure covered by the large hand in the colour designated by the small hand gives the speed per hour. Mr. Roberts has very kindly offered to place one of these instruments called "The 'Mensor' Speed Indicator Chronograph" at our disposal for testing purposes. We have accepted the offer and will acquaint our readers with our experiences with this ingenious instrument.

The Judd-Comiskey Motor Vehicle Co., of New York City, has been formed to manufacture and deal in motors and vehicles; it has a capital of £20,000.

THE Crouch Automobile Manufacturing Transportation Co., of Baltimore, with a capital of £50,000, has been incorporated in Maryland, U.S.A.

MR. O. SIMPSON, of 94 Denmark Street, Lowestoft, will be pleased to supply any motor-carists passing through the town with petrol, tubes, etc., and will do anything he can to advance them on their journey.

MR. HENRY STURMEY is resigning his directorship of the Daimler Motor Company, whose affairs, he states, are in a chaotic condition. He complains that he has no voice in their direction.

MR. J. JOHNSON, agricultural engineer, Market Place, Hexham, is taking up the manufacture of motor-vehicles, and is building new works in order to have greater facilities for this branch of his business.

MR. HANS RENOLD, whose patent silent-running chain has given great satisfaction to some motor-car makers but not to others, will shortly bring out a new motor-car chain, which he believes will meet all the requirements of a motor-vehicle.

WE have already announced the commencement of the running of electrical cabs in the Austrian capital, and they are so successful that they will shortly number fifty. They are of the same type and pattern as those which are at present running in London and in Paris, being built on the Bersey and Brougham patents.

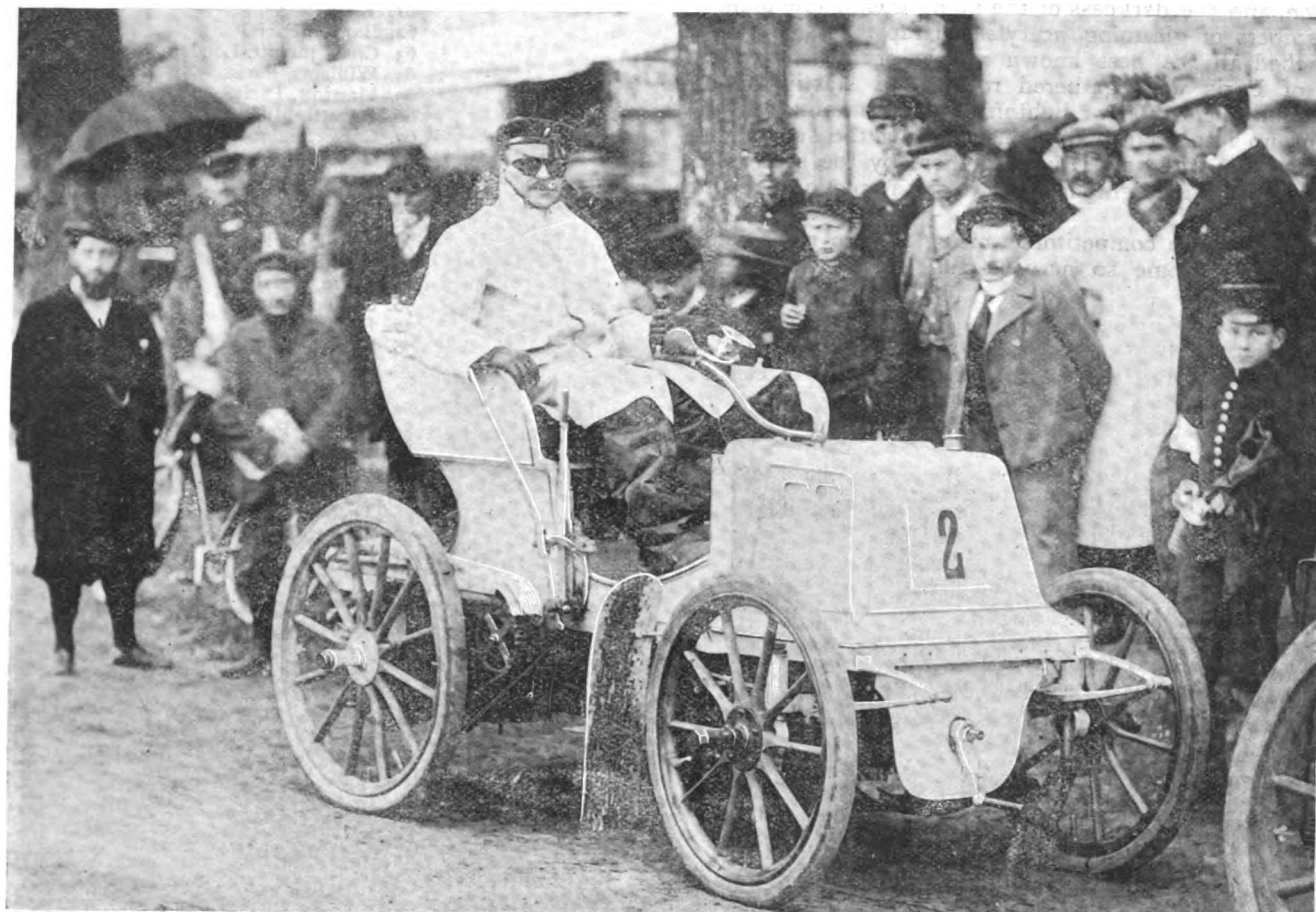
A CURIOUS hippodrome race is reported to have taken place recently at New York. The competitors consisted of a bicyclist, a motor-car, an elephant, a camel, and a racehorse. The distance was one mile, and the elephant, getting in front at the start, occupied the whole of the course, and so won the race, although the time recorded—six minutes—cannot be regarded as fast, even for an elephant.

THE French accumulator competition has been postponed for a few days owing to the delay in the delivery of the electrical testing machines at the Automobile Club. The apparatus is being set up in the cellars of the club house, the Place de la Concorde, where they will work under the supervision of M. Forestier. We shall let our readers know the results.

MR. HOPWOOD, the Recorder of Liverpool, had an exciting experience in Fleet Street the other day. It was just opposite the entrance to the Middle Temple, and the learned gentleman was in the middle of the crowded thoroughfare. Dodging an omnibus coming in one direction, he was unaware of the fact that Messrs. W. H. Smith's "Lifu" van was proceeding in the other direction until the burr arising from its progress made him aware of it. He could not go back and he could not go on. Mr. Hopwood just measured the distance between the two vehicles and braced himself in the happy mean until they passed. But it was a narrow shave, which, with a little flutter or flurry, might have resulted otherwise.



# The Paris-Bordeaux Race.



MONSIEUR CHARRON, THE WINNER, IN HIS PANHARD CAR AT THE CONCLUSION OF THE RACE AT BORDEAUX.

THE second occasion of this long distance race over 565 kilometres (351 miles) of rather difficult country proved even more successful than the inaugural event. Of the large number of entries there were only nine defaulters at the time of starting, which was fixed for the unearthly hour of 3 o'clock a.m. As we briefly announced in our last issue Monsieur T. Charron proved the winner, his time being 11 h. 43 m. 10 s., whilst in the motor-tricycle class Bardin was successful in 13 h. 22 m. It was anticipated by the "prophets" that on the present occasion the average speed of the winner would be 50 kilometres per hour, Monsieur René de Knyff's record last year being 37 kilometres, 690 metres. Although M. Charron the winner on the present occasion beat M. René de Knyff's time (15 h. 15 m. 31½ s.) by over 3½ h., yet this huge advance was not sufficient to make the average 50 kilometres per hour. As a matter of fact the average speed was 47 kilometres per hour in round figures, or, say 29 English miles per hour. The conditions were none too favourable, as a strong head or cross wind was blowing the whole time, and during the latter part of the journey rain descended "in sheets," to use colloquial language. If the climatic conditions had been more favourable probably the speed would have reached the figures prophesied.

In the motor-cycle division the winner's average speed over the whole journey was 42 kilometres 230 metres, the 1½-h.p. engine, assisted up the gradients by pedalling, being only 6 kilometres (say 3½ miles) per hour slower than the 12-h.p. (nominal) engine fitted to the winning car. Of course, the dead load is very much less in the one case than in the other ;

but at the same time, this comparison leads one to form an opinion of the magnificent work put into these small motors by De Dion & Bouton.

Fortunately we are not likely to see such contests in England just yet, for although we acknowledge that from a sporting point of view it is interesting and indeed exciting to watch such contests, yet to our minds the dangers arising from such a high rate of speed over ordinary roads and through towns and villages is nothing less than ridiculous from an utilitarian point of view. Such speeds will never be permitted as an ordinary thing in any country in the world ; the risks and danger, not only to the competitors themselves but also to the members of the ordinary public, are much too terrible.

As it was, several severe accidents are reported, and although the French enthusiasts point out that these occurred through uneven level-crossings over railway lines, and through defects in the roadway, yet there were several other collisions of which nothing is heard publicly.

Long before the hour appointed for the start, all Paris, or all the sporting population of Paris, turned out to make their way to Suresnes. It is not many events that would draw out the inhabitants of Paris, or any other great city, to spend the night and early morning watching the gathering crowds and the gradually increasing number of impatient contestants. Yet, during the whole night in the automobile and cycling centre of Paris, the Avenue de la Grand Armée and Suresnes afforded a curious and exceedingly animated sight. All the neighbouring cafés and especially the Chalet du Cycle were crammed with people, and even as early as 2 o'clock a.m.

more than 4,000 persons were gathered at the starting point. Hundreds of bicycles and over 150 motor-cars were present, and the scene was really extraordinary.

As the starting time grew nearer the crowds increased and the rattle of vehicles of all descriptions grew greater and greater. The roads of the Bois were furrowed in every direction, and the darkness of the night was made plain by the numbers of gleaming acetylene lamps. As 3 o'clock approached all the best known people of the automobile world of Paris were gathered round the starting point. Occasionally a gleam like a lightning flash in miniature threw some group into bold relief, whilst making the surrounding darkness more intense. Photographers by the score were flashing magnesium lights in order to secure pictorial records of the scene.

To watch the competitors waiting for the start was a sight in itself: some so nervous and excited that it was



MONSIEUR RENÉ DE KNYFF TURNING A CORNER AT ORLEANS AT FORTY MILES PER HOUR. EXPOSURE OF LENS  $\frac{1}{250}$  SEC. THE GENDARME ON THE LEFT WITH WHITE GLOVE IS INDICATING THE ROUTE.

impossible for them to keep their seats; others engaged in providing food for the journey; others, again, engaged in a last examination of their machines; whilst others anxiously approached their supporters, seeking to gain another assurance that arrangements had been made at various points to supply them with petrol, with food, or with other comforts. Some were so overloaded with petrol that it was difficult for them to sit in their seats, others paid such attention to the commissariat department that they appeared to be preparing rather for a bountiful picnic than for a night race through France.

At 2 o'clock the distinguishing armlets were given out to the competitors, and the leaden seal attached to the tricycles for identification purposes, it being forbidden to change machines during the contest. These interesting details were carried out by the aid of a lighted candle! Then, some of the curious and interested spectators climbed up Suresnes Hill to catch the first glimpse of the competition.

At 3.12 a.m. the starters in the motor-tricycle class were ready to start, their names being as follows:—

51. Ducom, Paris.
52. Ajax, Paris.

53. Marcellin, Paris.
54. Osmont, Paris.
55. Vasseur, Paris.
56. Rigal, Paris.
57. Béconnais, Paris.
58. Ernest Roguet, Paris.
59. Gaëtan de Méaulne, Paris.
60. S. F. Edge, London.
61. Teste, Paris.
62. Bardin, Paris.
63. Chas. Jarrott, London.
64. Williams, Paris.
65. Marriott, Paris.
66. Bugatti, Milan.
67. Carrot, Saint-Etienne.
69. Georges Celos, Paris.
70. Gleizes, Neuilly.
71. Rolland, Paris.
72. Gasté, Paris.
73. Duval, Paris.
74. Géo, Paris.
75. Corre, Levallois.
76. Siolliac, Paris.
77. Renaux, Paris.
78. Bar, Paris.
79. Tart, Paris.
80. Soncin, Paris.
83. Nicolas, Paris.
85. Degrais, Paris.
86. Degré, Paris.
87. Vigneaux, Paris.
88. Searle, Paris.
89. Théodore, Paris.
90. Duanip, Libourne.
91. Comiot, Paris.



MONSIEUR GIRAUD'S CAR AT VENDOME AFTER THE ACCIDENT.

By this time the dawn had begun to appear, and the lights of the vehicles were gradually put out, the operation being critically watched by the onlookers.

At 3.13 a.m. exactly the signal was given and the whole thirty-seven competitors stood on their pedals and were almost immediately swallowed up in a cloud of dusty vapour. Béconnais and Osmond took the lead, but soon they were beyond vision, and those at the starting point resigned themselves to waiting for telegrams to learn how the race proceeded, solacing themselves with the thought that they had assisted in the starting of a notable event.

At 3.32 a.m. all the motors of the large cars were started, and immediately the twenty-eight vehicles were swallowed up in a cloud of evil-smelling dust. The competitors in this class were as follows:—

- |                    |          |          |
|--------------------|----------|----------|
| 1. Etienne Giraud  | carriage | 18½ h.p. |
| 2. F. Charron      | "        | 12 "     |
| 3. Léonce Girardot | "        | 12 "     |

|                                       |            |          |
|---------------------------------------|------------|----------|
| 4. Levegh                             | carriage   | 10 h.p.  |
| 5. René de Knyff                      | "          | 12 "     |
| 6. Gilles Hourgières                  | "          | 12 "     |
| 7. Antony                             | "          | 15 "     |
| 8. Kœchlin                            | "          | 20 "     |
| 9. Leys                               | "          | 12 "     |
| 11. Fougerat                          | "          | 12 "     |
| 14. Archambault                       | "          | 12 "     |
| 15. Hénon                             | "          | 8 "      |
| 16. Gaëtan de Knyff                   | "          | 10 "     |
| 18. Maurice Farman                    | "          | 8 "      |
| 19. Bolide                            | "          | 15 "     |
| 20. A. Lemaître                       | "          | 18 1/2 " |
| 21. Wehrle                            | "          | 9 1/2 "  |
| 22. Broc                              | "          | 13 "     |
| 23. Voigt                             | "          | 8 "      |
| 24. Aubin                             | voiturette | 3 "      |
| 25. Théry                             | "          | 3 "      |
| 26. Gabriel                           | "          | 3 "      |
| 27. Chabrière                         | "          | 3 "      |
| 28. Baron Em. Boileau<br>de Castlenau | carriage   | 9 1/2 "  |
| 29. Huguet                            | "          | 8 "      |
| 30. Gibaud                            | "          | 8 "      |
| 31. Baehni                            | "          | 8 "      |
| 32. Wilfrid                           | voiturette | 4 "      |

Before giving the actual times of passing the various checking or control stations it will be interesting to note how the race proceeded in general. Briefly, it may be said that the victory, so far as the type of vehicles are concerned, rests entirely with Panhard and Levassor, the first five cars being of this type, as well as the 7th, 8th, 9th, 12th and 13th, the 5th and 10th being Mors vehicles. Three Peugeot cars of 18 h.p. started, but all were incapacitated owing to accidents, none of which were due to mechanical faults in construction. The Peugeot vehicle of 10 h.p. finished 11th, and in addition to those previously mentioned Mors cars secured the 14th and 16th positions, whilst one of the Amédée Bollée vehicles was 15th—over four hours behind the winner.

MM. Giraud, Leys, Charron and Gilles Hourgières are the four chauffeurs who in turn occupied the premier position at different control stations. M. Giraud was leading up to Chartres; Charron and de Knyff followed each other at a few minutes interval during the whole course from Chateaudun to Ruffec, whilst M. Gilles Hourgières passed them at this latter town and arrived first at Angoulême two minutes in advance. At Barbezieux, Charron finally took the lead, his luck being in the ascendant when Gilles Hourgières stopped for a few minutes owing to a temporary breakdown.

The wind was blowing very hard and greatly disturbed the racers, and a little before reaching Barbezieux those leading were wetted through to the skin and covered with mud, owing to a violent storm.

In the motor-cyclist series, Bardin, an old racer used to every professional craftiness, did not trouble himself to take the lead at too early a point. He worked his machine without any breakdown up to within fifty mètres from the finishing point, when he was obliged to travel by pushing his tricycle, this being his only stoppage. He took the lead at Tours, and constantly increased his advantage, arriving fifth in the general classification (beating Hourgières by two seconds) and being first in his own division.

The contestants passed in the following order at the principal controlling stations:

Vendôme (169 kil.)—Motor-cycles: Williams, 6 h. 44 m. Bardin, 6 h. 46 m.; Duanip, 6 h. 48 m.; de Méaulne, 6 h. 59 m.; Rigal, 7 h. 4 m.; Teste, 7 h. 7 m.; Ducom, 7 h. 11 m.; Jarrott and Corre, 7 h. 14 m. Motor-cars: Leys and Charron (together), 6 h. 48 m.; R. de Knyff, 6 h. 59 m.; Giraud, 7 h.; Girardot, 7 h. 8 m.; Archambault and Hourgières, 7 h. 11 m.; Voligt, 7 h. 26 m.

Just after passing through Tours, the motor-cars overtook the first motor-cycle. Bardin passed Tours at 7 h. 56 m., and Charron at 7 h. 59 m. Charron was "pulled over the coals" here for furious speed when passing through the town.

Poitiers (330 kil.)—Motor-cars: Charron, 9 h. 57 m.; de Knyff, 10 h. 9 m.; Gilles Hourgières, 10 h. 11 m.; Leys, 10 h. 22 m.; Archambault, 10 h. 24 m. Motor-cycles:

Bardin, 10 h. 15 m.; Williams, 10 h. 28 m.; Bugatti, 10 h. 37 m.; Teste, 10 h. 45 m.; Gaëtan de Méaulne, 10 h. 49 m.; Vasseur, 11 h. 4 m.

Angoulême (438 kil.)—Motor-cars: Gilles Hourgières, 12 h. 21 m.; René de Knyff, 12 h. 23 m.; Charron, 12 h. 28 m.; Archambault, who took a wrong turn in the town, was obliged to turn back. He started at 1 h. 9 m.; Girardot arrived at 1 h. 13 m.; Antony, 1 h. 55 m. Motor-cycles: The first motor-cyclist, Bardin, passed at 12 h. 54 m.; Teste came next a long time after, at 1 h. 26 m.; de Méaulne, 1 h. 35 m.; Williams, 1 h. 50 m.; Vasseur, 3 h. 5 m.

At Bordeaux, at the Quatre-Pavillons, there was a considerable crowd, amongst those present being MM. Joseph and Henri Journu, Marquis de Fayolle, Baron de Zuylen, Comte de Dion, Escarraguel, Georges Thomas, André Michelin, Armand Peugeot, Bard, Henri Lafitte, Joseph Clouzet, Maurice Lamulue, Marquis du Vivier, Gondoin, Herard, Creuzan (father and son), Thoumazeau, Louis Busquet, Pierre Schroder, Guestier, Noé Boyer, Oury, Barbereau, Prat-Dumas, De Thomines, Toulouse, Emile Mas, Pistres, and Bourges.

The storm of rain and wind was dreadful, but no one thought of seeking shelter. At a quarter past three the first car arrived, it proving to be Charron's under a thick layer of dust and mud. He arrived at exactly 3 h. 15 m. 29 s.; eight minutes afterwards René de Knyff arrived, and the others succeeded one another at intervals.

The following are the times of the arrivals:—

#### MOTOR-CARS.

1. Charron, 3 h. 15 m. 20 s.
2. R. de Knyff, 3 h. 23 m. 26 s.
3. Girardot, 4 h. 4 m. 35 s.
4. Archambault, 4 h. 9 m. 45 s.
5. Hourgières, 4 h. 35 m. 44 s.
6. Antony, 4 h. 49 m. 43 s.
7. Leys, 5 h. 4 m. 5 s.
8. Voigt, 5 h. 21 m. 11 s.
9. M. Farman, 6 h. 12 m. 32 s.
10. Broc, 6 h. 51 m. 48 s.
11. G. de Knyff, 6 h. 55 m. 25 s.
12. Huguet, 6 h. 57 m.
13. Hénon, 7 h. 20 m. 16 s.
14. Levegh, 7 h. 23 m. 26 s.
15. De Castelnau, 7 h. 24 m. 6 s.
16. Tougerat, 8 h. 5 m. 40 s.

#### MOTOR-CYCLES

1. Bardin, 4 h. 35 m. 42 s.
2. Teste, 4 h. 42 m. 3 s.
3. Méaulne, 4 h. 57 m. 35 s.
4. Vasseur, 6 h. 9 m. 35 s.
5. Degrais, 7 h. 5 m.
6. Gasté, 7 h. 19 m. 6 s.
7. Gleizes, 7 h. 32 m. 35 s.
8. Tart, 8 h. 10 m.
9. Degré, 8 h. 32 m. 35 s.
10. Rolland, 8 h. 40 m. 32 s.
11. Béconnais, 9 h. 35 m. 10 s.

The first and only serious accident occurred on the St. Cloud Hill, close to the starting point. M. Lemaître was behind M. Gilles Hourgières and quite close on him whilst they were passing the level crossing over the railway line which exists at the bottom of the hill. At that very moment a pneumatic tire of the front wheel of M. Hourgières' car burst, so that he was obliged to put on the brake suddenly. M. Lemaître, in order to avoid a collision with M. Hourgières' car, turned off suddenly and put on the brake. His "mecanicien," seeing the danger, jumped out of the car and fell on his head. M. Lemaître had but a slight collision with Gilles Hourgières' car, but though nothing prevented him from proceeding, seeing his "mecanicien" seriously injured and being very unnerved himself, he preferred to stop, and did not take further part. M. Flotte, the "mecanicien," was immediately taken to St. Cloud's Hospital. For two days he did not recover his senses, and the doctors thought he would die. Nevertheless, he is now much better, and we are glad to record that all danger of death is past. Another curious accident occurred at Versailles, where a man suddenly dropped dead owing to fright at the sight of Charron turning

a corner at such a terrific speed just in front of him. One of our illustrations, from a photograph specially taken for this Journal, shows M. René de Knyff going round a corner at full speed, the gendarme on the pavement pointing out the direction of the turn.

One most noticeable feature of the race was the unanimity with which the whole of the onlookers kept the route clear. If a dog crossed the path stones were hurled at it in perfect unison until the wretched beast was driven away. Vehicles were drawn on one side, whilst the spectators themselves, though closely packed, religiously refrained from breaking into the roadway when any cars were in sight. The police, too, were indefatigable in their efforts, and rendered considerable service by keeping corners clear and giving directions by signals to the contestants.

M. Giraud met with an accident near Vendome which, fortunately, had no serious consequences. He was going down a slight hill at full speed when one of his front pneumatic tires burst. The wheel itself soon gave way and the car went "head over heels" several times until it landed on the side of the road. The "mecanicien" was projected out of the vehicle, but M. Giraud was found under it. Most miraculously, neither of them suffered any serious injuries, and M. Giraud will probably be all right in a fortnight. The photograph taken by us and reproduced herewith shows the overturned car on the road side.

The only English competitors in the motor-tricycle section met with very bad luck. Mr. S. F. Edge's machine proved refractory from the start, and although Mr. Jarrott was more fortunate, yet he was ultimately incapacitated by his ignition apparatus getting soaked by the rain. At this time he occupied the third position in his section, but was passed here by several competitors. On getting his machine going again, by which time Mr. Edge had got level with him, further accidents occurred, and ultimately the fore wheels of both gentlemen's vehicles were buckled, necessitating their enforced retirement from the contest. Mr. Jarrott expresses himself determined to have another try next year. It must be remembered that he was totally unacquainted with the course, but now that he knows it he thinks he will have no difficulty in pulling off the event next year.

D. FARMAN.  
AGRICOLA.  
UBIQUE.

THE New York Automobile Cab Co. is reported to have framed its tariff at twenty-five cents per mile per person. The vehicles will ply chiefly in the shopping and mercantile centres of the city.

THE results of the Draguignan-Vidauban contest, which was over a distance of 85 kilometres, are as follows:—Motor-cars: 1, Gondoin, 2 h. 18 m. 42 s.; 2, Roubaud, 2 h. 58 m. 3 s.; 3, Stead, 3 h. 6 m.; 4, Gibert, 3 h. 28 m. 30 s. In this test De Fabrègues met with a rather grave accident, but fortunately was not injured very seriously. Chavehard gave up the contest in order to help him. Motor-cycles: 1, Mercadé, 1 h. 59 m. 8 s.; 2, Camoin, 2 h. 5 m. 18 s.; 3, Raoule, 2 h. 12 m. 28 s.; followed by Hippolyte and Mouton. It will be noticed that the first three motor-cycles beat the time of the first motor-car.

THE motor-car and cycle race between Aix-la-Chapelle and Coblenz, organized by the West German Automobile Club, was duly run off a few days ago. The distance was 145 kilometres (about 90 miles), and the conditions provided that no competitor would be eligible for a prize who occupied more than eight hours on the journey. Nine motor-tricycles and four cars put in an appearance at the starting point. Seven of the former and only one of the latter finished within the allotted time. The winner was Herr Cudell, of Messrs. Cudell & Co., Aix-la-Chapelle, the German licencees of the De Dion motors and motor-tricycles, his time for the ninety miles being 5 h. 22 m., or about an average of 16½ miles per hour.

## THE DUPRESSOIR MOTOR-TRICYCLE SPEED REDUCING GEAR.

IN our issue of March 24th last we published descriptions, with illustrations, of several devices which have recently been introduced with the view of providing motor-tricycles with a second, slow, speed for hill-climbing purposes. Since then still another device of the kind—the "Dupressoir," introduced by M. P. Dupressoir, of Paris—has come under our notice, and of it we are now able to give illustrations, together with a few brief particulars. Referring to Figs. 1 and 2, it will be noticed that the motor shaft is extended, and carries two pinions—one *M* continually in mesh with the spur wheel *I* on the axle of the tricycle, and one *J* in gear with a small intermediary pinion *L*; the latter gears with a spur wheel *K* keyed on one end of an upper short shaft *G*. At the other end of this shaft is keyed a clutch *H*, while between *K* and *H* is

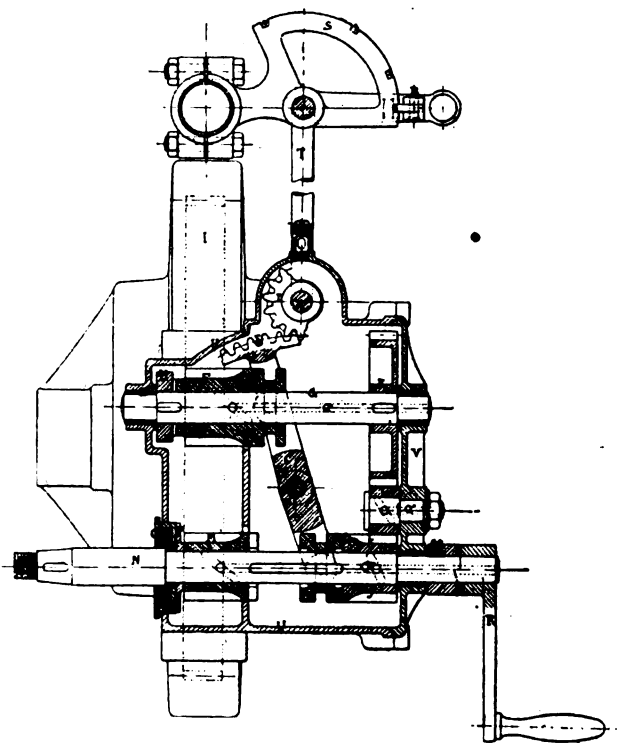


FIG. 1.

loosely mounted a special pinion *F*. Both the pinions *M* and *J* are mounted loosely on the motor shaft *N*, they only driving their respective spur wheels when in contact with the clutch *A* keyed on, but free to be moved along the motor shaft *N* between them. The lever *C* is so arranged as to control the movements of both the clutch *A* and the pinion *F*, its movement being effected through the toothed segments *E D*, lever *T*, and handle *B*. The illustration Fig. 1 shows the position of the gear to give the slow speed; the lever *C* has been moved over, causing the clutch *A* to make rigid contact with, and so drive, the pinion *J*; while the clutch has thus been moved along the shaft to the right, the pinion *F*, which runs loosely on the shaft, has been gradually made to mesh with the spur wheel *I* on the axle, and it is only when the pinion *F* is fully in gear with *I* that it makes contact with the clutch *H*, so causing the power of the motor to be transmitted to the wheel *I* at a reduced speed. To allow the machine to travel at the normal speed of the motor, the clutch *A*, by means of the lever *C* and its connections, is released from the pinion *J*—the pinion *F* being simultaneously withdrawn out of gear from the wheel *I*—and brought into contact with the pinion *M*, so causing the latter to drive the wheel *I*. The speed-controlling handle is attached to the top

bar of the frame of the tricycle; a sector with four notches is also provided in connection with it, the respective positions being: (1) slow speed, (2) slow-speed gear half withdrawn, (3) both gears out, motor running free, and (4) high speed.

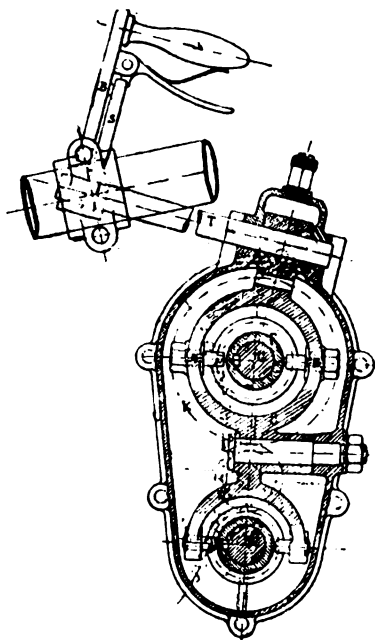
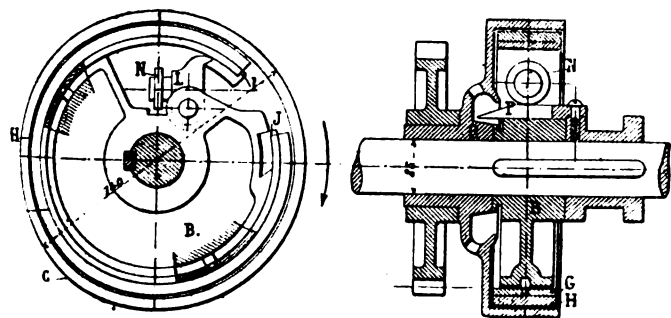


FIG. 2.

M. Dupressoir has taken advantage of the provision for the motor to run free from the transmission gear by providing a handle by means of which the motor may be put in operation before mounting the tricycle, so rendering the use of the pedals unnecessary.

## THE JULIEN FRICTION CLUTCH.

THE accompanying illustrations show sectional views of a new friction clutch devised by M. Julien and lately put on the market by M. G. Benoit, of 119 Rue St. Maur, Paris. Figs. 1 and 2 represent a clutch of this type adapted for use on motor-voiturettes. On the motor shaft is keyed the piece *B*, round which is fixed a hardened spring-steel band *G*, to which in turn is riveted a band of leather *H*.



FIGS. 1 AND 2.

Surrounding these, and running loosely on the shaft, is the pulley, or what may be termed the female portion of the clutch, to the boss of which is fastened the power-transmitting gear wheel. The spring *G*, when the clutch is thrown out, is under tension, and so has a tendency, by reason of its elasticity, to open out and make contact with the outer pulley *C*. To one of its ends is fixed a piece *J*, which engages in a corresponding recess in *B*, while at the other end is fixed a piece *I*, which continually bears against the special-shaped lever *L* pivoted on *B*. Perpendicular to its

axis this lever carries a roller *N*. Keyed on the shaft in such a way as to rotate with it, but still free to be slid along it under the action of a lever, is a sleeve to which is attached a wedge *P*. In the illustrations Figs. 1 and 2 the clutch is shown out of gear, the wedge *P* being forced in as far as possible. To put the clutch in gear the sleeve and wedge *P* are made to slowly move to the left; this allows the roller *N* and the lever *L* to slowly fall and the spring *G* to expand

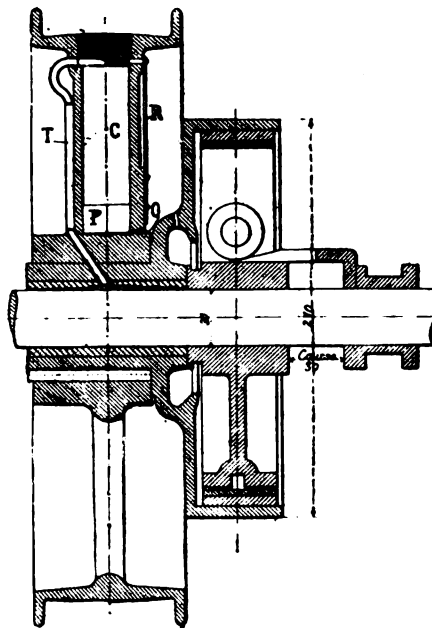


FIG. 3.

until, when the wedge has been entirely withdrawn from beneath the roller *N*, the maximum contact between the two parts of the clutch is obtained. It will thus be seen that the contact is the result of withdrawing the tension on the spring band and allowing it to expand, the system, it is claimed, resulting in a very quiet working clutch. The

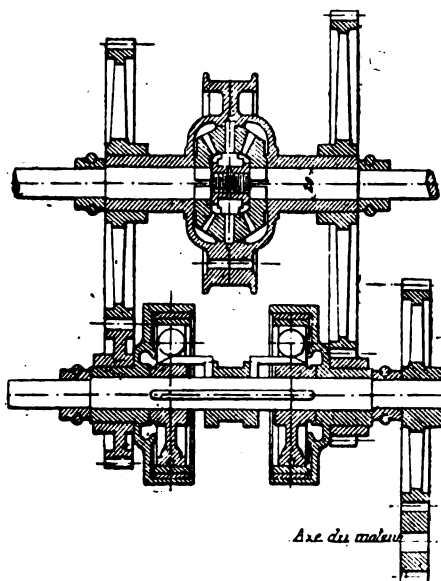


FIG. 4.

elasticity given to the spring and the degree of oscillation permitted to the lever *L* are such that the whole surface of the leather band *H* is brought into contact with the internal surface of *C*, this taking place until the leather band is worn down to the level of the heads of the rivets by means of which the band is attached to the spring *G*, provision being made for the quick renewal of the leather band when worn.



To prevent the spring band from getting out of its correct position, several small projections are attached to its inner face, these sliding freely in a small groove formed in the piece *B*. To prevent any oil reaching the leather band and so affecting its proper working, it will be noticed that the boss of the pulley *C* is provided with a special cavity, into which any free oil is caught and allowed to pass away by holes in the bottom of the cavity.

Fig. 3 shows a Julien friction clutch combined with a driving pulley for motor-carriages in which a special lubricating arrangement is provided. One of the arms *C* of the pulley is made hollow, and is provided with a piston *P*. This piston works under the action of centrifugal force, and in order to prevent the formation of a vacuum the under face of the piston is placed in communication with the atmosphere by means of a very small hole *O* formed in the lower end of the cylinder *C*. A screw plug is provided at the upper end of the cylinder to allow the latter to be filled with oil; the

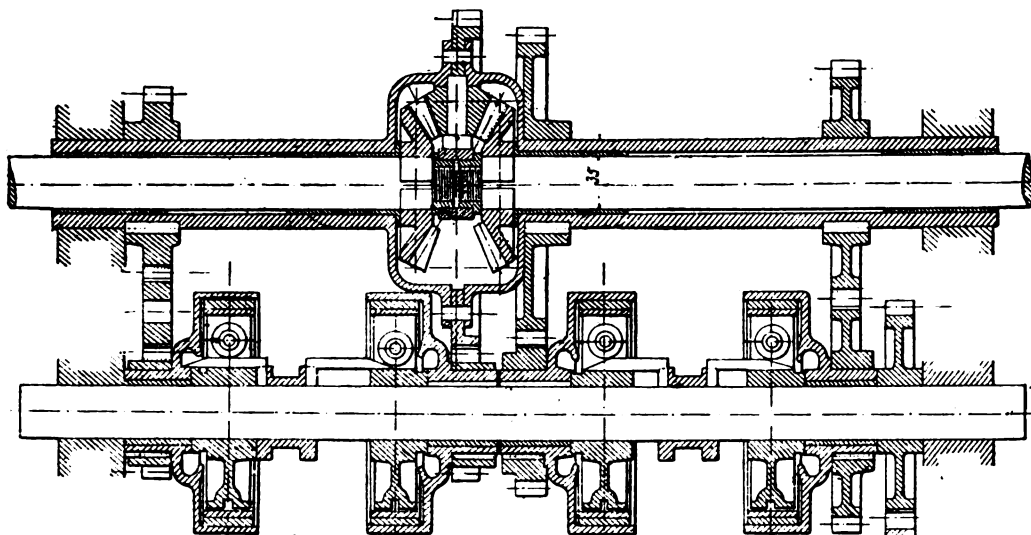


FIG. 5.

plug is prevented from becoming unscrewed during the rotation of the pulley by means of a projection held rigidly in place by a spring *R*. The connection between the cylinder and the shaft is made by means of the pipe *T*, a constant supply of lubricant being thus delivered to the pulley bearing owing to the centrifugal action on the piston *P*. The clutch is made in quite a number of sizes, ranging from a capacity of  $\frac{1}{2}$  h.p. upwards, at a speed of 100 revolutions per minute. Fig. 4 shows the arrangement, utilising Julien friction clutches, adapted for a two-speed gear for motor-cycles or voituresses weighing under 5 cwt. The motor shaft is geared by spur wheels to an intermediate shaft on which two clutches of the type shown in Fig. 3 are mounted. Only one sleeve is provided, however, to two wedges, so that moving over the lever to one side gives the high speed, and to the other the low speed. Fig. 5 gives an illustration of a transmission gear for motor-vehicles, provision being made for three forward speeds and one reverse motion. It will be noticed that four clutches are used, controlled by two levers, the reverse motion being obtained by interpolating a small pinion between the pinion on the intermediary shaft, and the one on the differential shaft.

THE directors of the East Kent Motor-Omnibus Company, who intend commencing business about June 6th, have fixed their fares very low—so low that they will be sure to attract passengers. Sixpence all the way from Dover Market Square to the village of St. Margaret's is a fare that ought to draw, and if on the repeated trips the omnibus keeps full, as no doubt it will as the summer advances, the undertaking ought to be satisfactory to the shareholders.

## CORRESPONDENCE.



### THE CONTROL OF MOTOR RACING.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My Committee has noticed that a communication emanating from the Automobile Club in reference to the control of motor racing has been widely commented upon by the press, and desires me to acquaint you with the following facts, in order that this important matter to the constantly-growing body of motorists who are taking part in racing on the track may be fully understood.

My Committee quite recognises that it is necessary that motor racing should be governed by a properly constituted central body, but at the same time objects to a club incorrectly styling itself "the only independent authority in this country" arrogating to itself the power of being able to constitute itself the recognised authority to regulate and control automobile races, competitions and time trials of motor-vehicles in Great Britain and Ireland. Quite apart from the incorrect supposition that it is the "only independent authority," there remains the important fact that the Automobile Club does not include amongst its members even 10 per cent. of the motor racing automobilists of this country, and it is therefore obviously unfair that such a club should seek to control the sport of those, who, for various reasons, are not members of this body.

The Motor-Car Club has already organized and controlled four highly successful motor-vehicle race meetings, and has at present under consideration the holding of similar race meetings in as widely distributed counties as Essex, Kent, Lancashire, Cheshire, Staffordshire, and Warwickshire.

Every motor race meeting held in this country up to the present time has been governed by the Motor-Car Club's Racing Rules and all the existing British records on the track have been made under this Club's government.

The Automobile Club has not promoted or supported one single track race up to the present time, and it is quite evident therefore that from a practical point of view, the Automobile Club has no *locus standi* in this matter.

Despite this, however, my Committee feel that the interests of the motor racers will best be served by means of an Union, composed of all Clubs and individuals, formed to control speed and time contests on the track. With this end in view my Committee will be pleased to appoint ten of its racing members to meet a like number of racing men appointed by the Automobile Club in order that rules may be framed for submission to a public meeting of racing motorists, a Central Control Board being appointed by this meeting to enforce the carrying out of the same.

It seems to my Committee that for one club to seek to control all and sundry motorists is likely to cause friction and disputes in the future amongst motor racing men who are not members of any club, and it is in order to prevent this that my Committee make this suggestion.

Yours truly,

Motor-Car Club, London, E.C., FRED. W. BAILY,  
May 31st, 1899. Hon. Sec.

# IRREGULAR POWER FROM DE DION MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was out on my new De Dion tricycle on Saturday, Sunday, and Monday last, and on each occasion the engine ran well at times and at other times it would not go at all, and when it did it gave no power more than firing the charge. I may say that on two of the above days I filled the carburettor right up to the top, with the result that for half an hour each day I could not get the strength out of the engine to go along on a flat road, though it fired every charge correctly. After running it on a block for half an hour it went all right for about twenty miles on each occasion; after that it went back to the same condition as when I started—viz., no power. I poured fresh petrol into the carburettor, but without any better result. As I am merely a novice at motoring, I should feel much obliged if any of your readers would give me some explanation on the above, and the reason why it should happen.

Swansea,

May 30th, 1899.

Yours truly,

JOHN WILLIAMS.

## THE ALLEGED BREAKDOWN OF ELECTRICAL CABS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My attention has been called to some reports in the daily papers with reference to the starting of the London Electrical Cab Co.'s vehicles on Wednesday last week, and I shall be glad if you will allow me to correct the statements therein made.

None of our cabs were in Farringdon Road or Farringdon Street on Wednesday. The procession of nearly seventy vehicles passed down Fleet Street and up Ludgate Hill, and then *via* St. Paul's, Newgate Street, and Oxford Street to Kensington.

In the reports it is stated that there were several passengers in the cabs, and that several accidents occurred. Both of these statements are absolutely without foundation, as there were no passengers in the cabs whatever, and the only accident which happened to the whole of the vehicles during the run was that some slight trouble was caused through one of the rubber tires coming out of the rim of the wheel.

It is also incorrect to state that some of the cabs had to return to the yard, as every one of the vehicles in the procession covered the whole route of about eighteen to twenty miles.

It is unfortunate that such unfounded reports reach the daily papers, and I am sure you will in fairness give publicity to this reply in your columns.

I am, Sir, yours obediently,

Juxon Street, S.E.,

May 26th, 1899.

WALTER C. BERSEY,

Managing Director.

## THE CRYSTAL PALACE CONTROL COMPETITIONS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We have been so frequently asked "Why did you not get the gold medal at the Palace with your English motors?" that we think it is necessary to explain the reason for our not carrying off that desirable article. We entered in one section only, viz., for vehicles under 10 cwt. This race was to take place at 3 p.m., and, if five minutes had been allowed between each competitor starting, we should have started at 3.25. However, for some reason, at 3.15 we were told we were too late to take part, as the race was over. This was doubtless a mistake on our part, and we in no way attribute the error to the management, who gave us every consideration by allowing us to run over the course and be timed, the same as other competitors had done, but *without the right to participate in the chance for the medal*. After all, the

actual medal is of very little importance, so we decided to accept the offer. We have not received the time for our second car, but the times for our first car are as follows: We started at 4.47, and finished at 4.54 min. 58 sec. Our times for the six stops were not officially taken, or if they were we have not received a record of same. The winner of the gold medal took 8 min. 22 sec. to cover the course, and the winner of the silver medal 8 min. 34 sec., *exclusive of time taken for stops*. Our time was 7 min. 58 sec., *inclusive of time taken for stops*, and as two of these were very long ones we can safely suppose that one minute can be taken off the gross time to get at the net time. If this is so, our net time would not exceed about 7 min., or 1 min. 22 sec. quicker than the winner of the gold medal, and 1 min. 34 sec. quicker than the winner of the silver medal. It will therefore be seen that although we have not actually won the medals, we have the satisfaction of knowing that we covered the course in far and away the quickest time. We heartily congratulate Mr. Barnes on the splendid manner in which he got out of his motor "all it was worth." Had he had one of our English motors in his car he would most probably have done very much better time than he did. He is therefore justly entitled to the medal he holds. For ourselves, we can only say "better luck next time."

Yours, etc.,

Kilburn, N.W.

May 29th, 1899.

INTERNATIONAL MOTOR-CAR CO.

F. O. SEYD, Manager.

## THE WINNING MACHINE IN THE "COUPE DES MOTO-CYCLES."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We read in your issue of the 19th inst. that Beconnais won the "Coupe des Moto-cycles" on a Noé Boyer tricycle. It should have been stated that it was a Phébus\* tricycle, the make that has won nearly all the important races on the Continent this year. The mistake no doubt arose from the fact that Mr. Noé Boyer is the commercial director of the "Phébus" branch of our Company. We shall be glad if you will make the necessary correction in your next issue.

Yours faithfully,

For CLEMENT, GLADIATOR & HUMBER (France), LTD.,

Paris,

May 25th, 1899.

F. G. TEUTON,

Secretary.

\*[This tricycle was fitted with an Aster motor in the race mentioned. It is necessary that this should be mentioned, as the Phébus tricycles are fitted with both De Dion and Aster motors.—ED. M.-C. J.]

RECENTLY a party of ladies and gentlemen arrived in Wooler, N.B., with a motor-car, and as they were about to resume their journey about mid-day the driver was in the act of bringing the car round from the coach-house at the back of the Red Lion Hotel, where the party was located. The hill being steep the brake was applied, but as it failed to work, the driver, finding he had no control over the car, diverted its course and brought it to a stop by running it against the house of Mr. John Diamond, painter, situate in Ramsay's Lane. Just at the time a son of Mr. Diamond's (William, aged twenty years) and a lad named James Armstrong were walking up the footpath and were both struck by the motor before they had time to get out of the way. Armstrong was knocked over, but escaped with a few scratches and a shaking; but Diamond was firmly fixed between the wall and the car. On being extricated he was immediately carried into the house. Dr. Walker and Dr. Dey were soon in attendance, when it was found that in addition to a deep cut on the leg his thigh bone was also fractured, and it was feared that he had received some internal injuries.



A GROUP OF "SCOTTISH MOTOR-CAR MAKERS" AND THEIR FAMILIES.

## SCOTTISH NOTES.



### Motor-Car Demonstration.

THE event of the week in the Scottish automobile world was certainly the motor-car excursion of the staff of Stirling's Motor Carriages, Ltd., of Hamilton, on Saturday last. The day was one of brilliant sunshine, and at an early hour a large crowd had collected at the starting point to witness the assembling and departure of the numerous motor-carriages with their freights of holiday-makers. Altogether some fourteen motor-vehicles took part in the trip, every one of them being the Company's own manufacture, including the handsome steam omnibus which I have already described. The omnibus with twenty passengers was despatched first—after the cars had been photographed—as it was expected to travel more slowly than the smaller vehicles. This was afterwards found, to the surprise of everybody, to be scarcely necessary, as on several occasions the "bus" attained a speed equal to fourteen or fifteen miles to the hour—a really splendid performance for a vehicle carrying a score of people. Ten minutes after the departure of the "steamer" the procession of thirteen Stirling-Daimler cars got on the move, piloted by Mr. John Stirling, managing director of the Company, accompanied by Mrs. Stirling and Master Stirling, in an elegant and beautifully finished Stanhope phaeton, the body being painted in dark green, with wheels and under-carriage of vermillion, picked out with black, the mountings being nickel-plated. This car was followed by two nice looking family open wagonettes with Daimler motors, and belonging to two of the directors of the Company. Next in line was a covered wagonette carrying eight, and driven by Mr. J. D. Brimlow, the Company's secretary. This vehicle had a very handsome appearance, painted and upholstered in dark blue and fitted with a portable top of enamel leather, furnished with hinging plate-glass windows at the sides. Then followed a

wagonette with six, driven by Mr. P. M. Stirling, painted in dark brown, with upholstery of super cloth to match. The remaining cars were also of the wagonette type, with the exception of a light looking vehicle built as a char-a-bancs and convertible to a parcel lorry. All these were driven by



THE PILOT CAR, CONVEYING MR. AND MRS. STIRLING.

members of the Company's own staff. The city of Glasgow (11 miles) was reached in a little over the hour. The passage of the cars through the busy streets of the city attracted a great deal of attention, the steam 'bus being the subject of much favourable comment. The route followed was by way of Argyle Street, Buchanan Street, Union Street, Glasgow

Bridge and onward through Pollokshaws to the grounds of Crookston Castle where a substantial luncheon was served in the open air, and thereafter the day was given up to a lengthy programme of athletic sports and amusements. At 5.30 tea was served; thereafter the unfulfilled items on the programme were run off, and an hour later the prizes were distributed to the successful competitors by Mrs. Stirling. Cars were then lighted up, and by 7.15 all were again moving merrily homewards in the cool evening air. The fact that Saturday was "Children's Day" in Glasgow, when 6,000 school children were entertained in the parks, increased the usually large crowds in the city streets on Saturday evening, and when the line of cars reached the city it literally became a "triumphal procession," the dense crowds giving "the motors" a very enthusiastic reception. Hamilton was reached at 10 p.m. The "outing" was well organized, and everything passed off without the slightest mishap.

#### A New Motor-Car Company.

For some time past rumours have been prevalent with regard to the extension of the motor business in Edinburgh established and carried on so successfully by Mr. John Love under the title of the Edinburgh Autocar Company. This week the prospectus of the Edinburgh Autocar Co., Ltd., is published. The capital of the Company is £50,000, in £1 shares, the present issue being 15,000. Well-known Edinburgh names figure on the directorate, and it is stated that 5,000 shares have already been applied for. A very moderate valuation is asked by the vendor for the business, and with the exception of a cash payment of £750 he takes the whole purchase price in shares of the Company, viz., £2,336. From what I know of the motor business in Edinburgh, this Company, I am certain, has a prosperous future before it, and as it is to be managed by practical gentlemen with large holdings in it the public need have little hesitation in applying for shares. The registered offices of the Company are at London Road, Abbeyhill, Edinburgh, where prospectuses and application forms may be obtained, and the secretary is Mr. T. Roland Outhwaite, who is well known in Scottish automobile circles.

#### The "Dailies" and Motor-Cars.

It is interesting to observe the gradual change in the attitude of the daily press towards automobilism. Instead of having all sorts of unfavourable things to say about the motor-car, and inaccurate reports of incidents or accidents, the leading Scotch dailies appear now to be thoroughly converted, and many articles highly favourable to automobilism have recently been published. In the *Glasgow Daily Record* this week a series of articles are being published from the pen of Henry Sturme, under the title of "The New Era in Travel." The first article is headed "Facts and Fallacies," and the second, "How we have been Outstripped by the Foreigners." The first deals with erroneous notions of what a motor-car can do, and a statement of what mechanical vehicles can and do accomplish. The second article refers to the institution and development of the motor industry in France. These articles, appearing in a newspaper with a wide circulation, must be influential in educating a vast number of people, who never see a trade journal, in the subject of automobilism.

"BROWN HEATHER."

THE Haynes-Apperson Co., Kokomo, Ind., is reported to have received an order for a number of motor mail wagons, to be used by contractors in carrying mails between the inland towns of Porto Rico.

AN United States contemporary states that the Electric Vehicle Co., of New York, has given to the Willoughby-Owen Co., of Utica, a contract for the furnishing of bodies for automobiles in the sum of £12,000.

## SOME AMERICAN STEAM-DRIVEN MOTOR-VEHICLES.

By HORACE L. ARNOLD.

(Continued from page 192.)

Fig. 9 shows the Mason and Stanley frame construction in front. Fig. 10, taken from the Mason car with the cushion, foot-board, and rear body cover removed, shows the smoke bonnet, leading from the boiler to the rear, with its rectangular uptake, and gives a good general idea of the arrangement of the parts. Fig. 11 shows the rear axle and the tubular yoke surrounding the compensating gear, the construction of the end girders of the frame, and the adjust-



FIG. 9.—MASON STEAM CARRIAGE.—FRONT VIEW.

able pump-stroke mechanism, consisting of a pivoted, slotted lever, operated by an eccentric groove in the side of the gear box, which takes a roller on the free end of the slotted lever; the pump plunger rod is set in the slot to have such a length of stroke as will give a suitable constant boiler feed. Fig. 12 is a view of the Mason rear axle and compensating gear from the other side, showing the brake band and drum. Whitney, Mason, and Stanley all pull the brake band on

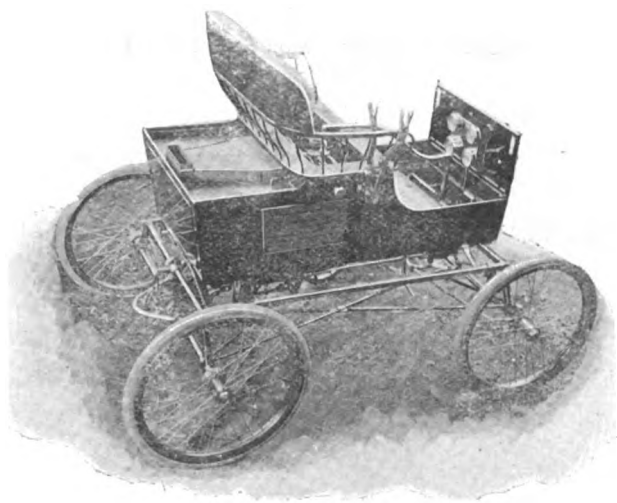


FIG. 10.—MASON STEAM CARRIAGE, SHOWING PARTS.

with the brake drum rotating, consequently a very slight pressure on the brake treadle causes a full brake action. Fig. 13 is a view of the Mason engines which have the cylinders cased in a nickel-plated jacket, polished to a mirror surface, so that in the picture it appears to be a glass case covering the piping, which it really reflects: this figure shows the



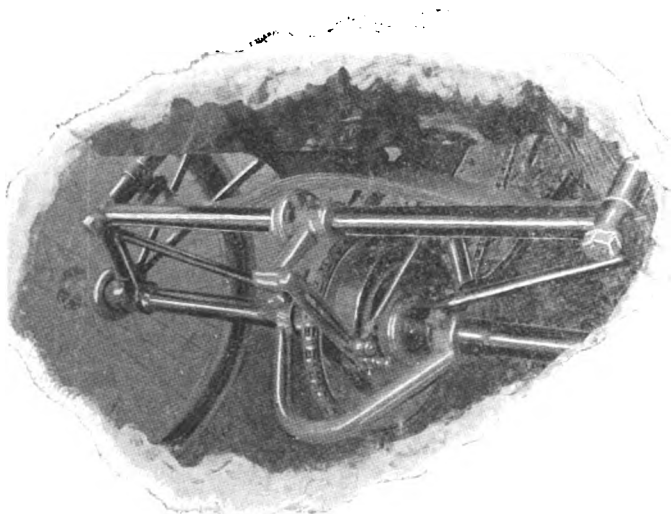


FIG. 11.—MASON STEAM CARRIAGE.—VIEW OF REAR AXLE FROM RIGHT, SHOWING VARIABLE STROKE PUMP ACTION.

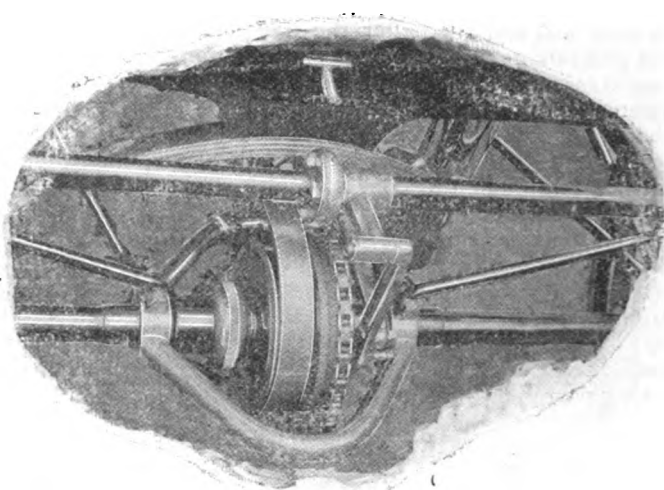


FIG. 12.—MASON REAR AXLE FROM THE LEFT, SHOWING BRAKE DRUM AND SPROCKET ON COMPENSATING GEAR.

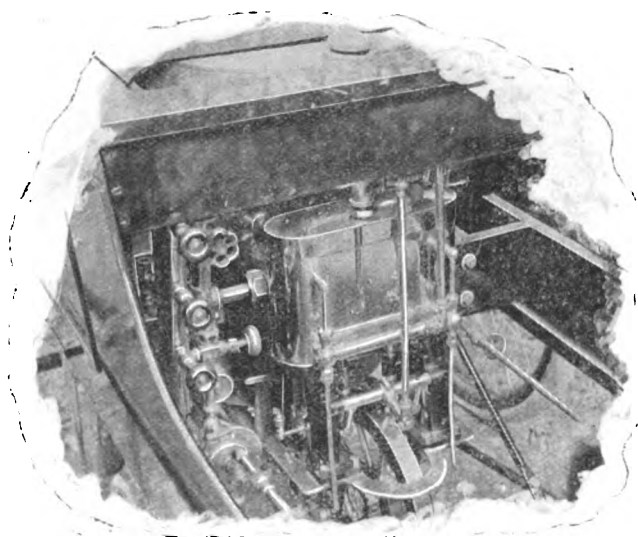


FIG. 13.—VIEW UNDER SEAT OF MASON STEAM CARRIAGE FROM THE RIGHT.

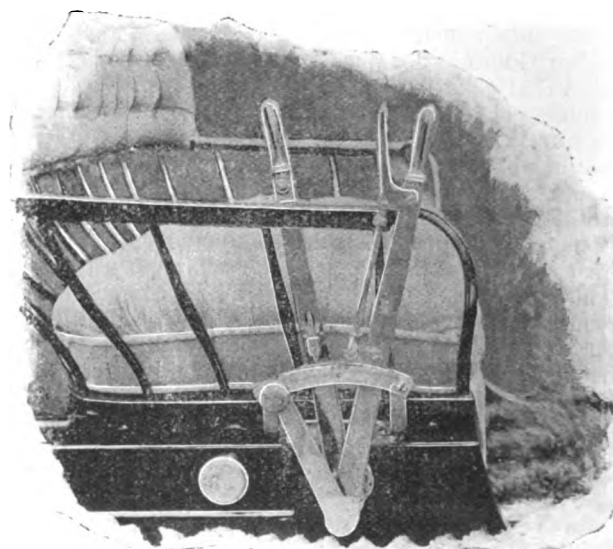


FIG. 15.—MASON'S QUADRANT AND CONTROL LEVERS.

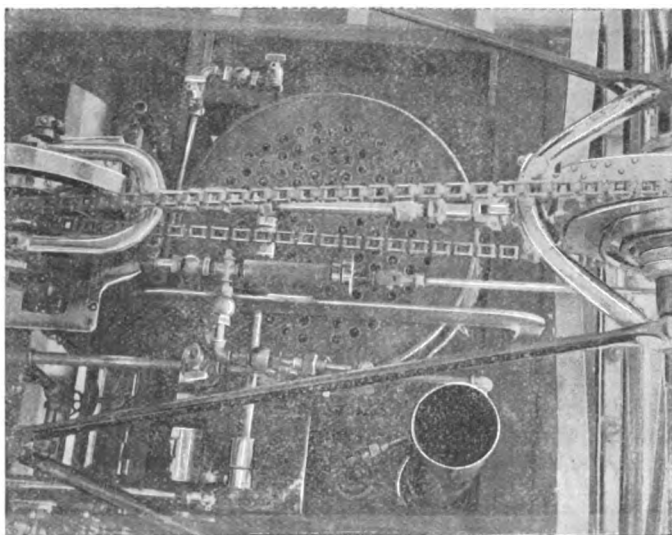


FIG. 14.—MASON'S BURNER, PUMP, ETC., SEEN FROM UNDERNEATH CARRIAGE LOOKING UPWARD.

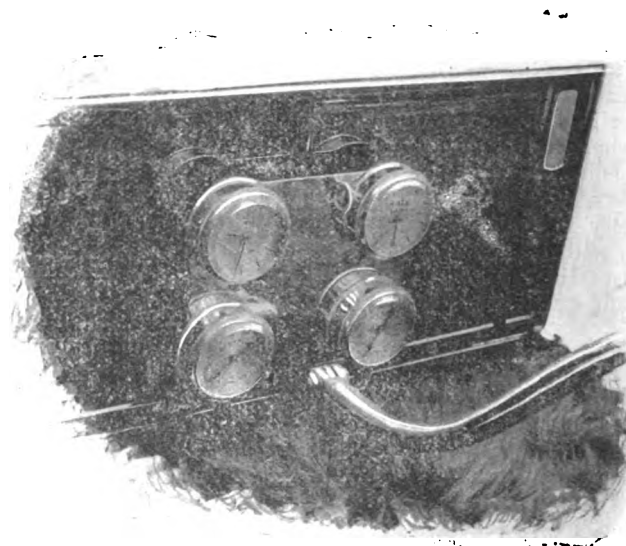


FIG. 16.—GAUGE-BOARD INSIDE DASHBOARD ON MASON STEAM CARRIAGE.



tumbling shaft, the Mason regulator, and the glass water-gauge, which was first placed inside under the seat, but which Mason has now changed to an outside location, in the same way as is shown in Figs. 4 and 5 of the Stanley car. Fig. 14 is a view of the Mason machinery from underneath looking upward, and shows the chain, the pump, the screw strut which connects the compensating gear yoke in the rear axle with the bottom of the engine frame, the piping, the bottom of the burner, and the open lower end of the down-delivery smoke stack.

The Mason engines have a free pendulum movement fore and aft on a hollow steam-supplying trunnion, and hence the right and left screw strut, pivoted to the engine frame and gear-box yoke, is enabled to at all times preserve the chain adjustment, although the engine rises and falls on the body springs. This screw strut requires universal jointing,

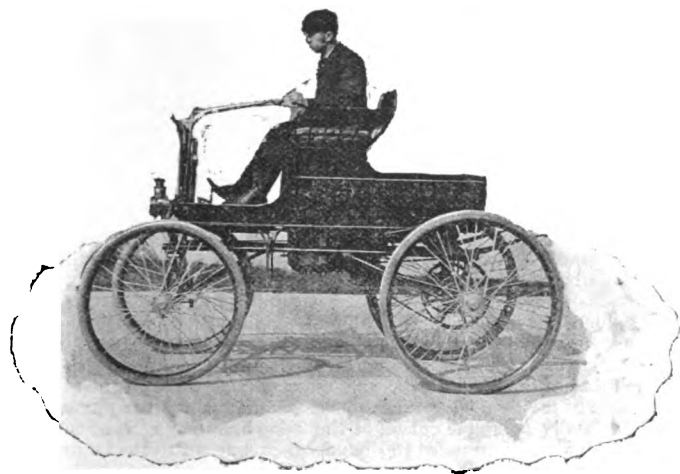


FIG. 17.—WHITNEY IN HIS NO. 2 STEAM CARRIAGE.

to accommodate the twist of the wagon frame due to uneven road surface.

Fig. 15 is an enlarged view of the right-hand end of the Mason seat, and shows the quadrant stand and levers, all nickelled and polished beyond the possibilities of good work with the camera. The short lever in front with a hand knob operates the cylinder cocks, the forward lever is for the links, and the rear one governs the throttle. The round knob to the left governs a boiler feed by-pass, which may be used to return an over-feed from the pumps to the water tank.

Fig. 16 shows Mason's elegant gauge-board located on the inside of the dash-board, and carrying an eight-day stem-winding clock and a cyclometer worked from the pump rod on top, and the steam gauge and gasoline tank air pressure gauge below. Various misleading reflections appear on the highly-polished dash-board surface, and the steering lever, leading from its joint near the wolf-skin foot-rug, leads off to the right of the picture.

The Mason car is without a doubt the finest in finish of any motor-vehicle yet made, and is at every point a thing of delight to the engineering eye. The weight of this wagon is perhaps something over 425 lb., as it has a 12-lb. fly-wheel and some extra levers, in addition to the Stanley equipment, besides the clock and cyclometer. The boiler weighs 95 lb., and the engines, weigh 38 lb.—just double the weight of the larger Stanley engines.

Fig. 17 shows the Whitney steam car No. 2. Whitney has built several wagons, no two alike. The first one weighed 750 lbs., and was driven by a pair of single engines, 2 in. bore, with 4 in. stroke. This car was completed in October, 1896, and had a light chain transmission. Whitney's second carriage, built for the Whitney Motor-Wagon Company, of Boston, from which these illustrations were taken, was finished February 20th, 1897. This car also has 2-in. by 4-in. cylinders; in his later wagons Whitney uses cylinders 2½ in. bore, with 4 in. stroke. All Whitney's engines are fitted with a valve-driving shifting crank-shaft,

driven by chain and sprockets from the engine crank-shaft, the valve-driving crank-shaft being fitted to change its angular position relative to its driving sprocket by means of a hand-actuated, longitudinally movable, double spiral grooved reversing sleeve. The action of this reversing gear is the same as that of the well-known shifting eccentric, the cranked valve-actuating shaft being introduced to avoid the large diameter sliding surfaces inseparable from the use of eccentrics, and for the sake of compactness.

Whitney uses two diameters of wheels, 36-in. rear drivers, and 36-in. front steering wheels, with 3-in. Hartford pneumatic tires, costing 120 dols. for the four, and used with 100-lb. air pressure. The wheels have steel rims and heavy reduced spokes, with bent ends at the hub. These particulars relate mainly to Whitney's wagon No. 3, a much heavier vehicle than No. 2, and hence are not all quite applicable to these illustrations.

It is enough to say that Whitney has tried bevel gears, spur gears, and chains for his transmission, and that none of them exactly meet his views. He has used rear-wheel sprockets up to 20 in. diameter, 2 in. pitch, and 1 in. face, and these very heavy and amply proportioned chains and sprockets do not appear much more durable than the lighter ones before used. The very large bronze and steel spur gear and pinion he used wore out with only 500 miles' travel. Whitney is at present directing his attention principally to this point of transmission mechanism. It is to be noted that all the motor-cars here illustrated have their transmission gear open to light road dust, and it is clear to the writer that the speedy destruction of all forms of gearing applied by Whitney has been due to grinding away, not to the legitimate wear of one clean, well-lubricated metal surface upon another.

As shown in Fig. 17, the general lines of Whitney's cars vary but little from common forms of carriages. The chief peculiarities of Whitney's construction are to be found in his frame construction, his valve motion, his front axle construction, and in his steering lever. Whitney is emphatically a hard driver, and he does not shun bad roads; he believes that the American motor-car must be equal to bad roads, and he works his car at high speeds over all kinds of road surface.

(To be continued.)

## PETROLEUM MOTOR-VEHICLES.\*

By JAMES D. ROOTS, M.I.M.E.

(Continued from p. 191.)



Figs. 23 and 24 illustrate the construction of the four-seated carriage. There are two friction clutches, one a slow speed of about 4½ miles an hour, the other a quick speed of about 11 miles an hour. With these clutches, however, any speed whatever between the maximum and one mile is easily obtained by the degree of slip allowed upon the clutch used. It might be expected, indeed it was frequently observed to the author, that there would be a great loss of power in allowing this slip—in fact, he rather expected it himself; but in practice it is not so, nor do the clutches become heated to any appreciable extent—for the degree of heating will be the measure of the loss of power—if the square inches of contact surface bear a correct proportion to the power to be conveyed.

When this car was first completed, the chains drove direct from the valve shaft to the axle, with a provision for taking up slack in the chain. But it was soon found that it was more convenient, as the car was arranged, to fit another countershaft farther forward and to drive the axle from this shaft. The balance gear was fitted to the axle, and the exhaust box parallel with the axle below the car as shown. This car in all probability did about 5,000 miles before the design was superseded. As with the previous cars, this one exceeded considerably the weight calculated from the drawing when designed. It weighed 12 cwt.

Fig. 25 is a plan of the motor. It is a twin-cylinder motor, from which was obtained at the first 3 brake horse-power, at a speed of 510 revolutions per minute. At the time of the *Engineer* competition the brake power was 3½ brake horse-power, running at the same speed. Except that the parts are mostly duplicated, the action is similar to that in the single-cylinder motor. Fig. 26 is a sectional elevation; A is the cylinder, B the piston, C the crank, E the cylinder cover, F the jacket, G the charge admission valve, G1 the air admission valve, H the exhaust valve, H1 the exhaust valve slide, H2 the eccentric, I the power and valve

\* A paper read before the Society of Engineers, May 1st, 1899.

shaft,  $I_1$  and  $I_2$  the chain wheels, two to one;  $J$  the oil-feed spindle,  $K$  the governor,  $K_1$  the governor link,  $K_2$  the governor sleeve,  $K_3$  the governor lever,  $K_4$  the governor slide,  $K_5$  the guide-piece for the slide;  $K_6$  is the governor block or collar on the exhaust valve spindle,  $Z$  the vaporiser,  $Z_1$  the starting burners,  $S$  the fly-wheel,

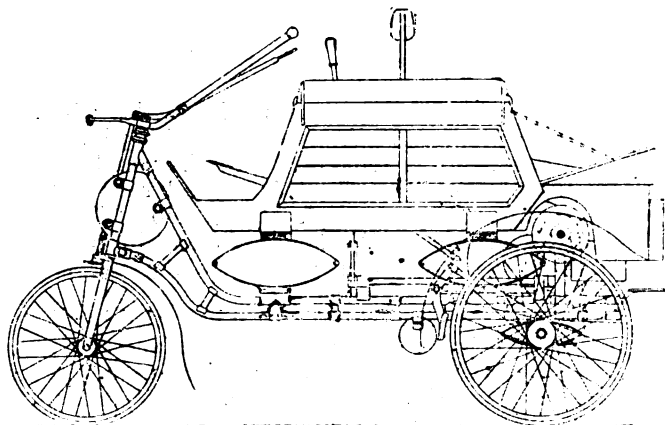


FIG. 23.

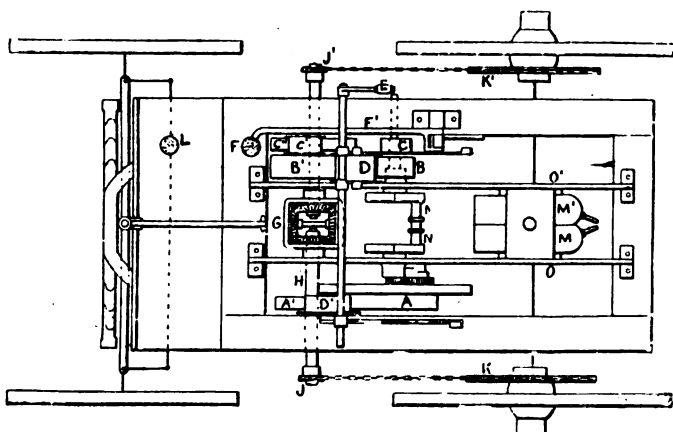


FIG. 24.

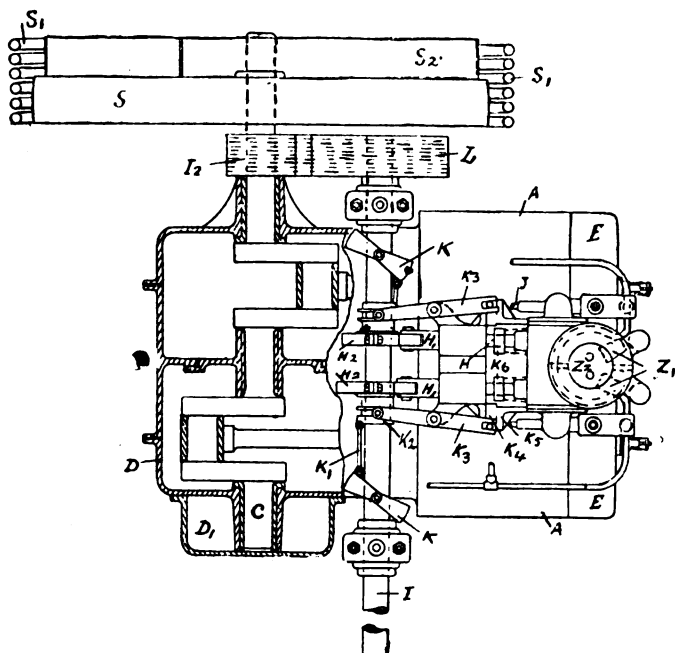


FIG. 25.

$S_1$  a copper cooling coil for the water from the jacket placed round the fly-wheel;  $S_2$  are blades fitted to the fly-wheel to induce a greater centrifugal action of the air through the coil.

This method of cooling the jacket water permitting only a small amount to be carried is decidedly the most effective that the author has

seen. Chains and chain wheels connect the crank shaft to a countershaft on which are keyed the friction clutches. These clutches drive either of the two chain wheels directly to the axle of the vehicle. The cranks of the motor are placed opposite each other. The method of governing by operating the exhaust valve and the oil feeder simultaneously, and by the same mechanism, enables a clean exhaust to be obtained, and the construction of the parts surrounding the vaporiser and igniter

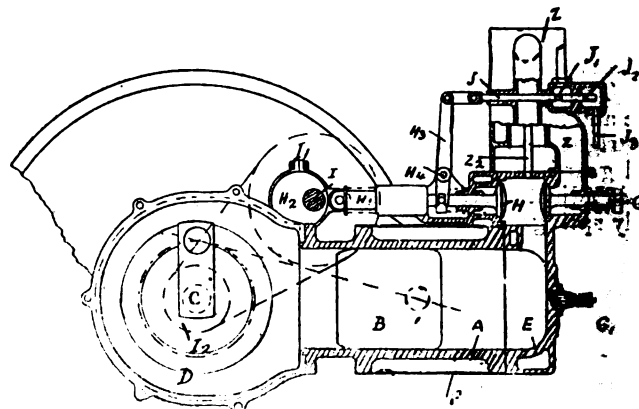


FIG. 26.

relatively to one another ensures complete combustion. The method of governing was only arrived at after some years of experiment. The automatic burner for heating the ignition tubes enables the motor to run continuously, so long as it is supplied with oil, without any attention whatever, which, the author thinks, cannot be claimed for any other oil motor, whether for vehicle or for other purposes.

The water is pumped through the jacket; it then traverses the whole of the tubes of the copper coil, and after passing through the tube round the frame of the vehicle, returns to the water tank and the pump. There is a practically complete cut-off of the oil when the governor cuts out; a minute quantity of oil is fed to the vaporiser, but not to the engine, during the time the governor is cutting out, so as to provide for the larger feed required for the first explosion following the cut-out; there is, therefore, no graduation of oil for governing purposes. The idea of graduating the feed in the tube-ignited vehicle oil motors is born of inexperience.

The oil descends by gravity from the oil tank to the two grooves in the oil-feed spindle, which is moved to and fro by the lever. The eccentric on the valve shaft, actuated by the crank shaft, by chain wheels and the chain, moves the oil-feed spindle out, and it is returned by the spring surrounding the exhaust valve spindle. The larger groove is for feeding the oil for the explosion in the cylinder, and the smaller groove is for supplying the automatic burner with oil by means of the pipes leading to the vaporiser. The blast of air necessary for the automatic burner is taken from the air valve on the crank chamber. Air is displaced by the hollow side of the piston through the air valve and along the pipes, to meet the oil supplied by the smaller groove in the oil-feed spindle. When the speed of the motor increases the governor cuts out, and by means of the lever moves the blocks so that they keep open the exhaust valve; at the same time the oil-feed lever is only permitted to have a very slight movement to and fro. As soon as the blocks are released by being pulled back by the governor lever, the usual oil feed commences again, and the exhaust valves are closed by the springs surrounding their spindles.

When the piston is moving outwards, air is drawn through holes in the side of the vaporiser. The air coming through these holes sweeps off the oil from the larger groove in the spindle, and together the oil and air pass round the inside of the vaporiser and through the valve into the explosion chamber. They become thoroughly mixed and heated in passing round the vaporiser, and are in the form of gas or vapour. When the piston returns, it compresses this gas or vapour, and some of it is forced into the ignition tube, which fires it, and the piston is forced outwards again. In returning it displaces the burnt gases through the exhaust valve, which is opened at the right moment for their displacement. The cycle then recommences. When the motor has been running a little while, extra air is admitted by means of the additional valve  $G$  on the cylinder cover.

(To be continued.)

THE National Motor Co. has been incorporated at Buffalo, N.Y., to manufacture motor carriages, etc. The capital is £10,000.

A PARTY of seven gentlemen left Edinburgh on the 29th ult. in one of the Edinburgh Autocar Company's cars for a week's tour through the south of Scotland. One of the Company's touring cars ran a trial run on the 28th ult. to Dunbar and North Berwick, accomplishing the round of sixty-six miles in 4 h. 22 m.

## AN INGENIOUS CONTRIVANCE.

WE illustrate in the three engravings herewith an ingenious method of making a two-seated four-wheeled vehicle from any ordinary lady's bicycle and a motor-tricycle. The device is the invention of Mr. Rowland Winn, of Cookridge Street, Leeds, who has devoted

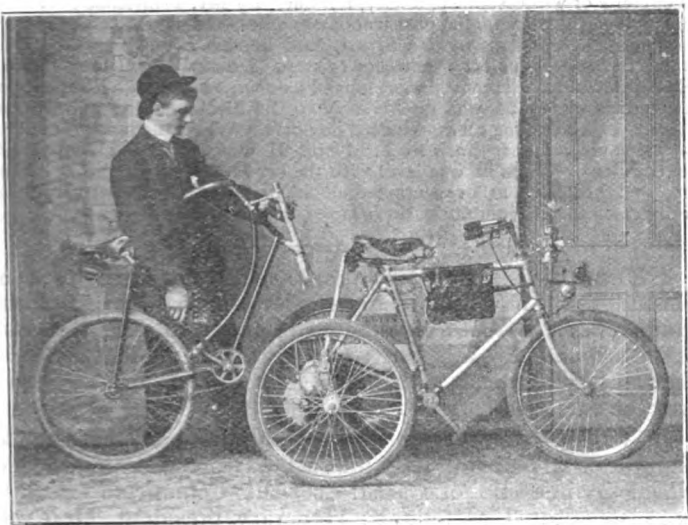


FIG. 1.

his mechanical skill to other details connected with automobilism, as we hope to demonstrate in future issues.

In the contrivance at present illustrated, it will be seen from Fig. 1 that the motor-tricycle is provided with a pair of coupling stays attached to the rear axle and free to swing in a forward or backward direction; these are removable at will from the machine, but in general practice are kept attached thereto. The ordinary lady's bicycle is deprived of its front fork and wheel, and in place of the ordinary fork a shortened fork designed to fit over the axle, and having a Y arm, is placed in the steering post of the bicycle as shown in all the illustrations. This improvised fork also carries a



FIG. 2.

swinging arm bolted to it which is attached to the handle-bar stem as shown. When this shortened fork is attached to the bicycle, the machine is brought up to the tricycle and is attached thereto by means of a long bolt passing through an eye in the short fork and eyes on each of the coupling

stays. The bolt is fastened by a nut as shown in Fig. 2, where Mr. Winn is giving the last turn with his wrench.

The transformed vehicle is shown in Fig. 3, and we are informed that the attachment provides a comfortable means of giving a friend a ride. Owing to the method of attachment the bicycle is not rigidly fixed to the tricycle, its weight being carried by the short forks resting on the axle of the latter,

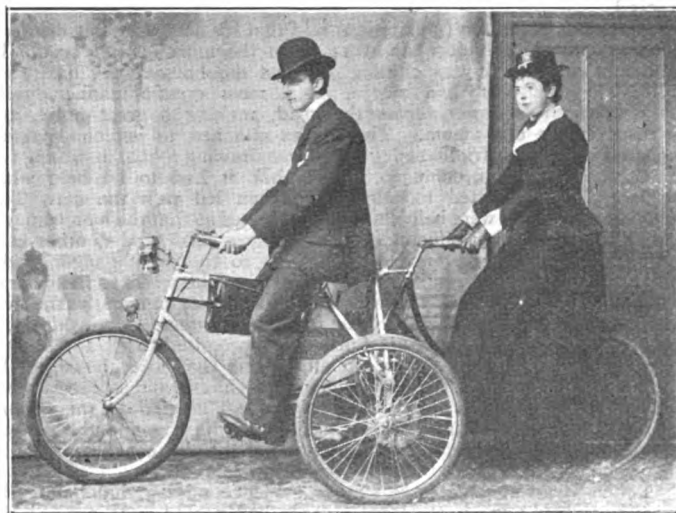


FIG. 3.

and all other connections permitting a certain free swinging motion, so that the rear rider is not inconvenienced even when corners are turned at rapid rates.

It will be noticed that the tricycle bears a bell driven by friction with the tire on the front wheel, and the machine also bears several other "little fixings," the product of Mr. Winn's ingenuity. We may mention that the tricycle (one of the early vehicles of the Motor Manufacturing Co.) was originally fitted with tube ignition, but is now equipped with electrical ignition devices, the alteration also being effected by Mr. Winn himself, the owner of the vehicle.

THE employes of the Madelvic Motor-Carriage Company, Limited, Granton, near Edinburgh, held a smoking concert on Saturday, when Mr. Hugh Strachan, their late head engineer, was presented with a marble timepiece on his leaving the Company's service.

FRENCH regulations for the use of motor cars, besides ensuring good, safe mechanism approved by the Service of Mines, stipulate that each vehicle must carry the maker's and owner's address; each driver must be certified as capable by the Service of Mines; in crowded thoroughfares the speed must be reduced to walking pace, and must not exceed  $12\frac{1}{2}$  miles an hour passing houses, or  $18\frac{1}{2}$  miles an hour in the open country, except for races authorised by the local prefect or mayor, in which the speed may exceed  $18\frac{1}{2}$  miles in open country.

THE Graham Equipment Co. of Boston has secured an order for 135 auto-trucks from the National Transportation Company of Boston, to be used under the omnibuses of the various lines that the Transportation Company is establishing in the suburbs of that city. They are to be built with steel frames and will be equipped with Graham's spring suspension and equalized brakes. The National Transportation Company frankly admits that this system of spring suspension is the only one that will allow them to do away with rubber tires and yet permit the 'buses to run over the pavements of the city at a high rate of speed without jar and inconvenience to the passengers, or damage to the motive power. One of these vehicles will probably be entered at the contest of self-propelled vehicles at Liverpool next July and possibly some will be shown at the Agricultural Hall Exhibition.

**"DRIVING TO THE COMMON DANGER."**

At Bow Street, on the 29th ult., before Sir James Vaughan, Mr. Sidney Atkins, a director of the Automobile Association, of Prince's Road, Holland Park, W., and Fred Frantz, an engineer in the employment of the Association, were summoned for having driven a motor-car to the common danger on Constitution Hill on May 19th, the occasion of the Automobile Club starting on its Whitsun tour.

Mr. Chapromiere, who defended, said that Mr. Atkins was unable to attend the Court that day, but he asked that the case should be allowed to proceed.

Inspector Hamilton (A Division) said that his attention was drawn to the defendant's large motor-car at 11.45 on the morning in question by the commotion that it was causing amongst the horses on Constitution Hill. The car was then moving in a most erratic manner, going backwards and forwards across the road, making a great noise, and emitting smoke and steam. The horses attached to vehicles passing appeared very much frightened. One horse drawing a cab, in which two ladies were seated, became so restive that it had to be held while the ladies were assisted to alight, and then led past the car. Two saddle horses, which were being led along, plunged so that the man who was leading them had great difficulty in holding them at all, and another cab-horse shied and ran a distance of 150 yards, to the great danger of the public. Several people complained to witness, and he spoke to the defendants, telling them that they must stop the machinery at once, as the lives of passers-by were endangered by the frightened horses. Mr. Atkins said that the gear of the car was out of order, and promised to get another car to draw it away, and witness walked off. Some time after, however, the defendants recommenced their experiments on the car, and as horses again began to shy he reported them. In reply to the magistrate, the witness said that there had been a motor-car meet that morning and the defendants seemed very much distressed at not being able to accompany the other vehicles owing to their car breaking down.

Police-Sergeant 39 A gave similar evidence, adding that before the inspector arrived a troop of Horse Guards had passed. On nearing the car the horses plunged all over the road, and the men had great difficulty in inducing them to pass it.

The hearing was adjourned for the attendance of additional witnesses

**SPEED OF MOTOR-CARS IN ABERDEEN.**

IN the Aberdeen Sheriff Court on the 25th ult., a prosecution was brought against the driver of a motor-car, who was alleged to have driven at a greater speed than ten miles on the public roads at Craibstone. Accused denied the charge, and was defended by Mr. Emslie Smith, jun. Mr. William Murison, county clerk, gave evidence regarding the bye-laws in the county as to the rate of speed at which a motor-car might be driven. The rate of speed must not exceed ten miles an hour. James Smith, carter, Margaret Cottage, Bucksburn, stated that on the day in question he was driving a cart from Tyrebagger Quarry along the Inverurie Road when a motor-car came along. He could not identify the man who was driving it. The rate of speed was about twenty miles an hour. Witness jumped down and ran to his horse's head, as he knew the animal would be frightened, but the car was on him before he could do anything. The horse backed, and the accused and the animal tumbled into the ditch. The horse was hurt, and the shaft of the cart broken. Cross-examined, witness stated that the car was 150 yards away when he first saw it. It stopped opposite his horse. He had no experience of motor cars, but he saw them every day on the road. George Macrae, carter, Dyce, was in charge of a horse when the car passed. He got no warning. He had no experience of motor cars, but he had had experience of bicycles, and had run fifteen or sixteen miles an hour. He knew the motor was running quite fast. After evidence by Sergeant Bruce, Alexander Macrae, carter, said he was driving a bogie, and had no warning of the approach of the car. The speed was eighteen or twenty miles an hour. A witness who was in charge of a horse at Craibstone on the day in question said a motor-car passed him at a greater rate of speed than ten miles an hour. No warning was given of the approach of the car. Further evidence was given for the prosecution as to the rate at which the car was driven. Mr. Emslie Smith said the case failed, as no evidence of identification had been offered. The Fiscal said one witness had identified accused, and moreover accused himself admitted his identity to the constable. The Sheriff said he understood there was no question about identity. He thought Mr. Smith would be better of some other defence. Evidence was then led. A young gentleman who was in the car at the time explained the construction of the motor, and said that with the gear which was employed on the day in question the car could not have been driven at ten miles an hour. Witness said the car could go eighteen miles an hour, and the reason it was geared to that extent was that it was a French machine, and in France motor-cars could be driven at any speed the driver cared to use. Another witness gave evidence of a similar nature, and said they were too near the town to be going fast. He could not say why that should make any difference, but explained that in Aberdeen they never travelled at a greater rate than five miles an hour. It would not do to go faster. Witness was somewhat contradictory as to the different rates of gearing and possible speed of the car. The accused gave his account of the accident, and affirmed that the car was not run over ten miles an hour during the whole day. The Sheriff found the charge not proven.

**A PROSECUTION AT NUNEATON.**

GEO. ISON, motor-car driver, Nuneaton, was summoned by Joseph Hollingworth, coachman, Nuneaton, on the 25th ult., at the Nuneaton Petty Sessions, for failing to stop his car when signalled to do so by complainant, who was in charge of a restive horse. Defendant pleaded not guilty. Mr. W. Whiteman defended. Complainant stated that he met the motor-car in Abbey Street. His horse became fidgety. The motor was going at about six miles an hour. Witness signalled to the driver to stop, but he did not do so until the car had passed. One of the occupants of witness's trap, a lady, fell out. By Mr. Whiteman: Witness had driven the same horse past traction engines, and also past the motor-car. Arthur Collett, Dugdale Street, said he saw last witness hold his hand up and shout for the motor to stop. He saw Mrs. Bland fall out. He did not think the motor was stopped as soon as it might have been. Defendant stated he was on his way to the Midland Station. He met Hollingworth driving a two-wheeled dog-cart. When the horse was level with the motor-car it threw its head up. Hollingworth had both hands on the reins. When he was level with the car Hollingworth put one hand up, and he (Ison) at once applied all the brakes. The Bench expressed a difficulty to discriminate in these cases, and dismissed the case.

THE society founded to promote the fêtes in the town of Le Havre is now organizing, under the patronage of the municipality, a great automobile and cyclist fête for July 2nd next. Chauffeurs are invited to take part in it dressed in fancy costumes and with their machines decorated either with flowers or otherwise.

We learn that in regard to the International Automobile Exhibition to be held in Berlin during September next at the Royal Gymnasium of Carlstrasse, the Committee has just been constituted as follows: Honorary president, Herr von Podbielski, Director-General of the Imperial Posts; members: Councillor A. Klose, General G. Bocker, Herr Felix Simon, Dr. Müllendorf, Comte Talleyrand-Périgord, Herr Fritz Hille, Herr E. Borsig, Colonel Budde (chief of the State Railways Department), Major-General Baron Van Bruddenbroch (Marshal of the Court), Councillors L. M. Coldberger and J. Löwe, Prince Frantz von Ratimer, Major Schœnbech, Major Comté Schonborn-Wiesentheid (Aide-de-Camp of the Imperial Chancellor), and Herr von Balz (President of the Wurtemberg State Railways).

**TO CORRESPONDENTS.**

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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## COMMENTS.



### The Speeds in the Paris-Bordeaux Race.

It is interesting to compare the average speeds of the cars and cycles participating in this race over various distances. Unfortunately it is impossible, of course, to determine what was the highest speed attained by any

competitor during the continuance of the race, but the averages over differing distances give figures of very considerable interest. The average speed of Charron, the winner in the carriage class, over the whole course was 48 kilometres 199 metres per hour, whilst that of Bardin, the winner in the cycle division, was 42 kil. 269 met. for the whole 565 kil. (351 miles). Comparing the times of arrival of the first motor-car and the first motor-cycle at the various timing places, we find in every instance and over every class of road that the carriage was running the faster of the two types. From Suresnes to Châteaufort, a distance of 21 kil. 450 met., the time occupied by the first car was exactly the same as that occupied by the first motor-cycle, viz., 28 minutes, which gives an average speed over the distance of 48 kil. per hour, or about equal to Charron's average speed over the whole journey; in all other cases, however, the average speed of each class varies considerably, and does not even vary synchronously.

| Stations.                            | Distance. | Type.     | Time.     | Average   |             |
|--------------------------------------|-----------|-----------|-----------|-----------|-------------|
|                                      |           |           |           | per hour. | per hour.   |
|                                      | Kil. Met. |           | Hrs. Min. | Kil. Met. | Miles. Yds. |
| From Suresnes to Châteaufort ....    | 21 450    | Motor-Car | — 28      | 46 —      | 28 993      |
| From Châteaufort to Chartres ....    | 63 550    | " Cycle   | — 28      | 46 —      | 28 993      |
| From Chartres to Châteaufort ....    | 45 —      | " Car     | 1 14      | 51 527    | 32 319      |
| From Châteaufort to Vendôme ....     | 39 —      | " Cycle   | 1 17      | 49 520    | 30 1,364    |
| From Vendôme to Tours .....          | 57 —      | " Car     | — 56      | 48 210    | 29 1,694    |
| From Tours to Châtellerault ..       | 71 —      | " Cycle   | — 59      | 45 762    | 28 771      |
| From Châtellerault to Poitiers ..... | 33 —      | " Car     | — 38      | 61 579    | 38 465      |
| From Poitiers to Ruffec .....        | 66 —      | " Cycle   | — 47      | 49 787    | 30 1,657    |
| From Ruffec to Angoulême ..          | 42 —      | " Car     | 1 11      | 48 169    | 29 1,620    |
| From Angoulême to Bordeaux ....      | 127 —     | " Cycle   | 1 12      | 47 500    | 29 913      |
|                                      |           | " Car     | 1 11      | 60 —      | 37 500      |
|                                      |           | " Cycle   | 1 27      | 48 965    | 30 753      |
|                                      |           | " Car     | — 47      | 42 127    | 26 312      |
|                                      |           | " Cycle   | — 52      | 38 076    | 23 1,167    |
|                                      |           | " Car     | 1 25      | 46 588    | 28 1,679    |
|                                      |           | " Cycle   | 1 33      | 42 580    | 26 810      |
|                                      |           | " Car     | — 59      | 42 711    | 26 955      |
|                                      |           | " Cycle   | 1 6       | 38 181    | 23 1,282    |
|                                      |           | " Car     | 2 54      | 43 793    | 27 375      |
|                                      |           | " Cycle   | 3 41      | 34 479    | 21 751      |

These comparisons, of course, do not necessarily give the fastest time or highest average between the stations. The times are those of the first of each class of vehicle to pass the stations, and it may be that others did the journey between some of these points in quicker time, although not being first. From this table it is seen that the highest speed recorded is 61 kil. 579 met. (38 miles 465 yards) per hour, whilst the slowest is 34 kil. 479 met. (21 miles 751 yards) per hour.

### A New Tricycle by the Beeston Co.

We recently had the pleasure of meeting Mr. Crampton, who was driving his new 70-millimetre motor-tricycle specially made by the Beeston Company to his order. The motor is fitted with both tube and electric ignition devices, and although, of course, Mr. Crampton prefers the electric ignition yet he finds the incandescent tube very useful in case of temporary inefficiency of the former. The tricycle is also fitted with a special arrangement for lifting the exhaust valve, so that pedalling can be carried on without working against the resistance of the motor in the compression stroke. Mr. Crampton finds this arrangement much more satisfactory than the old device of opening the compression release-cock, and moreover there is no noise under the new arrangement. The makers, too, have fitted pinions and spur wheels of a much greater width than usual, and the machine, as a whole, is so satisfactory that there has not been the slightest hitch during running. On the first trip one or two nuts worked loose, but the tightening up of these is practically the only adjustment that the user has found necessary. We are informed by Mr. Crampton that the machine easily covers twenty miles per hour, whilst with a trailing-car its speed is not reduced below sixteen miles per hour. Like most other users of motor-tricycles, Mr. Crampton finds advantages in electric ignition other than those connected with the ability to advance the ignition of the charge. The absence of the heat arising from the tube and the lamp is, of course, a great consideration with the 1½-h.p. motor, especially during such weather as that recently experienced, as the motor is much less readily incapacitated and considerably longer runs are possible.

### More "Movements" in the Motor-Car World.

AMONGST the latest changes in the staffs of manufacturers of motor-vehicles is the speedy termination of Mr. Van Toll's engagement with the Daimler Motor Company. Mr. Van Toll has probably had more experience in motor work than any other man at present in England, having been engaged in some of the leading factories on the Continent before coming to England. We understand that Mr. Van Toll's present intention is to start in business on his own account, rather than to engage himself to another firm of manufacturers. We wish Mr. Van Toll every success whichever path he may ultimately choose; but we are of opinion that several of the English manufacturers would be very glad to secure his valuable services.

### "A Time of Pressure."

THE present and next eight or ten weeks will be a period of unprecedented activity in the motor-car world, both in France and in England. In Paris the trials of vehicles suitable for cabs is proceeding even at the time of writing. To-day the Automobile Club's trials of vehicles, both for hill-climbing and efficiency tests, are commencing, and continue day by day until Tuesday next (Sunday, of course, excepted), and on Thursday the Club's speed contests



are to be run off. On Friday in next week another function commences, whilst on July 3rd the Motor-Car Exhibition opens at the Agricultural Hall, and the series of efficiency contests, promoted by this Journal, commences on the 4th prox. In Paris, notwithstanding the unfortunate closing of the Automobile Club of France, the exhibition promoted by the Club, and to be held in the Tuileries Gardens, open its doors on June 15th and closes them on July 9th. This is to be followed immediately by the race promoted by *Le Matin*, our Parisian contemporary, over a course of 2,500 kilometres, or nearly 1,609 miles. This is again to be followed by the trials of heavy vehicles at Liverpool organized by the Liverpool branch of the Self-Propelled Traffic Association. What with three exhibitions and four separate and distinct groups of motor-vehicle trials, the enthusiastic automobilist will have a busy time. Certainly the French Exhibition promises to be far and away in advance of any other show yet promoted, but running that a good second will be the Motor-Car Exhibition at the Agricultural Hall. In the meantime the cry of all makers is "Give us time." Every one of them is engaged in producing new types of vehicles, and hardly one can find time to pay attention to these new productions owing to the extreme pressure of orders for vehicles of the older types for immediate delivery. In almost every factory shifts of men are employed working day and night, and yet with all this the order book cannot be cleared. We know one firm who have orders in hand for no less than twenty-seven cars more or less of the same type, all of which are supposed to be ready for delivery within the next few weeks, but we are greatly afraid that purchasers will have to wait. Manufacturers, of course, do not like to lose the chance of taking part in the exhibitions, but they necessarily cannot make the show they would like to do when under penalties to deliver cars already on order. As a consequence, we are afraid that several manufacturers will have less complete shows at the exhibitions than they would like, but at the present time necessity, in the shape of business pressure, compels it. Motor-cars are not like bicycles: their component parts can neither be produced so readily, so quickly or so automatically, nor can they be "erected" or placed together in anything like the same space of time. The cycle, as compared with the motor-car, embraces but a very few trades—the saddle maker, the lamp manufacturer and the tire manufacturer being almost the sole outside trades employed; but the motor-car trade, at any rate in the carriage branch, embraces a greater number of trades than might be imagined at first glance. Tools, too, are difficult to obtain, whilst stocks of materials are almost impossible of acquisition; labour, also, is scarce, and that available is practically untrained in the particular work to be performed. We are afraid, therefore, that some disappointment must be experienced by the public.

#### The Automobile Club's Motor-Vehicle Competitions.

THE complex series of trials for motor-vehicles promoted by the Automobile Club commences during the present week. The programme originally laid down embraced almost every known type of vehicles, but we learn that some of these classes will perforce be abandoned owing to lack of entries. Speaking broadly, the competitions are divided into two classes, one for vehicles under 1½ tons tare unladen, and one for vehicles over that weight. These classes are subdivided into sections embracing vehicles propelled by steam, electricity and petroleum-spirit. The tests comprise hill-climbing competitions and road runs over varying distances for different types of vehicles, whilst a special speed trial over a very limited course is also projected for those manufacturers who like to enter their vehicles. This latter will be held, of course, over private roads, the law not permitting high speeds on public roads. The hill selected for the hill-climbing competition is Petersham Hill, the start taking place from the Star and Garter Hotel at 11 a.m. to-day. To-morrow the efficiency trials for electric vehicles will be commenced, the run being thirty miles. The start takes

place at 11 a.m. from Richmond, at a spot adjoining the London and South-Western Railway goods yard, and the route is by way of Kingston, Esher, Leatherhead, Epsom, Ewell, Combe, and back to Richmond. On Monday next, at 11 a.m., the steam and petroleum-spirit motor-vehicles will be started on their efficiency test over fifty miles. The course selected is on the Oxford road, the start taking place from the Red Lion Hotel, Southall, at 11 a.m., and the cars proceeding for twenty-five miles towards Oxford and returning by the same route. On Tuesday, the 13th inst., those vehicles over 1½ tons tare unladen will carry out their trials. These will start from the Chequers Inn, High Street, Uxbridge, at 11 a.m., and proceed ten miles towards Oxford and return to Uxbridge over the same course, the run therefore totalling twenty miles. The programme is an interesting one, and as the vehicles are only required to carry out the test once there should be no difficulty in their doing so.

#### "Hippopotami" on Wheels.

AT the meeting of the Ongar Guardians on Tuesday in last week, some of the members indulged in giving vent to a series of such utterly ludicrous statements that we think they are worthy of reproduction in our columns. One member named Thos. Atkins inquired if steps could not be taken to regulate the speed of motor-cars along the country roads. They were, he said, a source of great danger to persons driving. The cars were driven at a great rate, and when they were at a standstill they made such a horrible noise and emitted such an offensive smell that horses would not pass them. Their shape and colour, too, were enough to frighten the most quiet horses. One recently in the Toot Hill district was like a hippopotamus, and painted a flaming red. Having ended his diatribe, Tommy Atkins gave place to the chairman of this august and haughty body, and this gentleman, Mr. Lawrence Marriage, continued the discussion by gravely stating that on the previous Sunday a motor-car raced him at the rate of twenty miles an hour. We would remark that Mr. Lawrence Marriage is deserving of very severe censure in permitting his horse-drawn vehicle to run with a motor-car at twenty miles an hour. Think of the cruelty to the horse, forcing the poor creature to travel at the rate of a mile in three minutes! What a wonderfully speedy horse Mr. Marriage must possess, too! He concluded by stating that his horse ultimately bolted, and that he only avoided an accident by turning into a side road! Mr. Marriage is to be congratulated on his ability as a driver of horses. He races at twenty miles per hour, and then, when his horse "bolts," is able "to avoid an accident" by turning it into a side road, which, of course, most providentially came into its position specially for the purpose. To an unprejudiced onlooker it would rather appear that Mr. Marriage was so disturbed by the fact that his horse could race no longer that he turned into a byeway in order to make defeat less obvious. It is foolish to indulge in racing horses against motor-cars, besides being cruel; let us hope Mr. Marriage will know better next time. At the conclusion of the discussion Mr. Tommy Atkins proposed that the chairman and a Mr. Raby should call the attention of the Highways Committee of the Essex County Council to the "dangerous way in which motor-cars are driven through the country," and the chairman promised that they "would see to it." For the guidance of Mr. Marriage on the occasion of his next meeting a motor-car when driving his fast trotter, we would remind him that he can stave off his defeat and consequent gall by galling the motor-car driver. All that is necessary is that he should hold up his hand, and the motor-car is bound to stop by the provisions of the law. Mr. Marriage can then, if he likes, deride the motor-car driver and proceed on his journey at a little less wonderful speed for a horse-drawn vehicle than twenty miles per hour. In the meantime, Mr. Tommy Atkins may be reminded that there is at present no law to prevent an

automobile or a hippomobile from being painted "a flaming red" or, indeed, any other colour the owner may choose to select.

**A Commentary  
on the Ongar  
Guardians.**

THE following amusing commentary on the Ongar Guardians' action in this matter is extracted from the columns of our contemporary, the *Essex County Chronicle*:—"Mr. Thomas Atkins, a

"member of the Ongar Rural Council,

"feels much righteous indignation at the way in which motor-cars are beginning to monopolise our country roads. There has been, it seems, a 'hideous monster' in the Toot Hill district, in the shape, according to Mr. Atkins, of a 'hippopotamus,' and painted a flaming red. Mr. Atkins encountered this curiosity as he was quietly riding home from Epping behind a sedate and docile mare. The 'monster' was at rest, but Mr. Atkins is not quite sure that its quiescent state is the least alarming, for although when on the move it bowls along the country roads with the 'speed of a cyclone, when it is standing still it 'makes such a hideous noise and emits such a horrible smell' that the 'most self-respecting equines become alarmed thereat. Evidently the Light Locomotives Act will have to be considerably amended and added to. Mr. Atkins has a 'picturesque flow of language, and when he warms to a 'subject he can, metaphorically speaking, paint things as 'red as the demon motor which has so raised his ire."

**NOTES FROM THE MIDLANDS.**

ALTHOUGH apparently unknown by a great many people, there is much work being done in the Midlands towards the production of motors, also motor-cycles and large cars, and this is particularly the case in Coventry, where the many large cycle companies are turning their attention to this new method of locomotion, which, in a very short space of time, is bound to practically revolutionise traffic, both pleasure and business. So much progress has already been made, and motors are running every day so regularly and precisely, that it can no longer be said that the motor-car is a useless and obnoxious machine, but is rather already of a distinct service to mankind. The public are fast grasping the fact that this is the case, and are taking a very keen interest in the development of the "new baby" which they must soon be called upon to keep. Doctors already are using motor-cars and cycles, and find that they not only do away with the expense consequent upon using horseflesh, but they also find that they can cover their rounds in much less time, and consequently have a greater amount of leisure.

Of course, as in ordinary traffic, a great variety of purposes have to be served by motor-cars, and the tendency at present amongst the many firms in Coventry who are going into the matter is to produce what is undoubtedly wanted, viz., a small light car capable of carrying two people, or one equally comfortably, and capable of a moderate speed uphill and down. There are many reasons why this is the case, first of which is, of course, cost of manufacture, and secondly, tools for production. Many cycle firms have already tools in use which can cope with most of the work required on small motors, hence their wisdom in commencing on this class first. Again, there is a strong demand for these light vehicles on account of their comparative cheapness and also extreme handiness. Of course, in the case of the Daimler Co. and the Motor Manufacturing Co., whose works were specially equipped for a larger class of motor, any description of work can be carried out; and these firms are experimenting with vehicles of a lighter class, although they continue the production of the larger.

Amongst the cycle firms who are taking up the matter may be mentioned the Humber Co., the Raglan Co., Messrs. Bayliss & Thomas, the Progress Co., the Beeston Co., and many others; and it is my purpose to explain in detail, from time to time, the various productions of these firms. The Humber Co. are making a very good "quad"—that is, a machine with four wheels, having a comfortable seat in front, and a cycle saddle and pedals for the driver behind. The Company tell me that they have several machines nearly finished, but awaiting tires, which it appears there is much difficulty in getting from the Dunlop Co., who, ever to the front with pneumatic tires, are now making a speciality of motor-car and cycle tires. This firm are inundated with orders for tires for this purpose I am told, and, I believe, took an order for 500 from one firm alone this week. The Humber Co. have also been experimenting with a larger car, somewhat similar in appearance to the Hurler car, but of course entirely different in mechanical details. From what I have seen of this car it is speedy and powerful, though somewhat heavy for two passengers. Some very good runs have been made on this car, though considerable improvement is necessary.

The Progress Co. are making an exceedingly elegant car for two, which I have examined in its unfinished state. There are many new departures from ordinary accepted motor design in this little car which I hope to fully describe later on, when I have had some trials on it. They have also made a Benz type car and several tricycles, all of which have been fairly successful. The Raglan Cycle Co. have made one car of the Benz type, though much heavier in detail. This car I have tried and thoroughly tested, and there is no doubt that it is a strong and very fast car. The countershaft pulleys run on ball bearings, which of course lessens noise and friction besides increasing their life. This firm also open one of the induction valves by means of a cam and lever, so that this gas valve can be accurately adjusted as to life, and always gives the same passage for gas whether the engine is working fast or slow, which of course is an improvement. The firm are building twelve of these cars for a start, and, judging by their first production, should do well, as the car is certainly strong, well built, and very powerful. The Endurance Motor Co. are also making a car somewhat on Benz lines, and their first car, though slightly under-powered, does credit to the firm.

The Motor Manufacturing Co. is doing a large business in large cars as well as small, chiefly charr-a-bancs and wagonettes, which are being sold for hiring purposes. One firm in the North of England, at Sunderland, has already ordered twelve of these cars, nearly all of which have been delivered. The Daimler Co. are supplying large 8-h.p. vans to the Post Office, which I think will be the heaviest vans drawn by petroleum-spirit at present running in England. Of course, as I stated before, most of the smaller types of cars are being built entirely as experiments; but there is no doubt that a great many of the firms are on the right track, and will shortly be producing satisfactory vehicles in quantities.

Coventry, I think, may safely be styled the centre of the industry so far as manufacturing is concerned. Birmingham is not at present quite so go-ahead. I have heard a rumour that Mr. Dunkley is about to take the premises lately occupied by the Anglo-French Motor Co., but this requires verifying. There are several cars running in and near Birmingham, chiefly Benz, though there is a very fine Panhard, and also a Mors. It is strange in a city like Birmingham, devoted so entirely to the metal and engineering trades, that there should be such lack of interest in what is undoubtedly the trade of the future. The Dunlop Co., at Bournbrook, are making tricycles and small cars, as also are Messrs. Accles.

"VERAX."

## THE ESTABLISHING OF RURAL AND OTHER MOTOR-VEHICLE SERVICES.—I.

AT the present time there is undoubtedly a widespread movement, extending practically through the whole kingdom, in regard to the establishing of services of mechanically-propelled vehicles for the conveyance of passengers and parcels. A few words in respect to the conditions governing the inauguration of such services will not, therefore, be out of place at the present time. The conditions governing the establishing of services of vehicles running at intervals over definite routes cannot be too closely investigated both by those already desirous of establishing services and by those to whom the advantages to be secured by such services are not yet sufficiently well appreciated to have caused them to give any considerable consideration to such a scheme.

The advances made during the past few months in forming local services have been chronicled from time to time in the columns of this Journal, but perhaps it is hardly appreciated that within the past three months close upon thirty separate and distinct services have been projected, and in by far the largest majority of cases some vehicles are already in operation on each of the routes selected.

It may be asked, What districts and conditions are most suited for public motor-vehicles services? Speaking broadly, it may be said that such services are suited to every district in which there are signs that the traffic would warrant them. The condition of a district in respect to the character of its roads, its general contour, and the accessibility of various places comprised in its extent have, of course, some influence on its suitability as a profitable field for the running of public vehicles, but these are not "governing" influences so far as its suitability is concerned. Motor-vehicle services will pay quite easily in districts or between towns or villages badly served by railways; they will prove remunerative when towns, although contiguous, are served by railways making long detours, or when connected only by lines having junction at a considerable distance. In such cases as the latter the railway fares are necessarily high owing to the distance to be traversed: but it frequently happens that the distance by road is very considerably less, and as the motor-vehicle is able therefore to negotiate the journey in considerably less time than that taken by the railway train, it follows that it will receive most of the patronage even though the fares charged are equal to those of the railway company. Of course in such cases, if the amount of traffic warranted it, it would be wiser to materially lower the charge for fares, as by this means those who patronised the road service would be pleasantly reminded that they conserved both time and money.

Motor-vehicle services pay also even in those districts that are comparatively well and cheaply served by horse-drawn vehicles. This has been proved to demonstration not only in such places as may be termed "pleasure resorts," but also in busy centres—Sunderland, for instance, where the "omnipotent motor" runs in competition with hippomobiles and at the same fares. The reason for the success of the motor-vehicle is not difficult to find. Its ability to thread its way through congested streets is far beyond that of horse-drawn vehicles running on the roads, whilst those running on rails are left far in the rear. In these days of quick movement time is everything to the busy man, and he will preferably patronise that vehicle which reaches its destination in the shortest time even though its actual running speed may not be greater than that of the hippomobile.

The reasons of the profitable nature of the automobile as a public vehicle as compared with its horse-drawn competitors are many. Let all consideration of the saving in expense owing to it being unnecessary to provide stables, food whilst resting, bedding, shoes, harness, etc., be placed on one side, and it will still be found that the automobile is a greater

money earner than the hippomobile by reason of its ability to travel a distance with a given load in one day far beyond the capacity of a pair-horsed vehicle in two days. This is not due to its quicker travelling only, or indeed, principally, but almost solely to its greater endurance. It will carry out a duty day after day for long periods that the hippomobile is unable to accomplish even for two days in succession; indeed, it will in one day carry out a duty without incapacitation that would entirely "knock out" the finest pair of horses ever foaled.

As to the suitability of districts for profitable motor-vehicle services, it must be conceded without argument that those residing in or having business connection with a district are most favourably situated in regard to forming opinions on this point. It is for this reason that we advocate local enterprise in forming and maintaining motor-vehicle services. An enterprise formed locally and belonging almost solely to those interested in the locality is much more likely to succeed than is a similar enterprise established by the aid of outside capital and influence, as the first will attract support by sympathy as well as by convenience. The needs of a locality are best known to local residents, and most probably will be better catered for by local enterprise than by outside adventurers. Wherever possible, therefore, a public motor service should be established by local influence rather than from the outside.

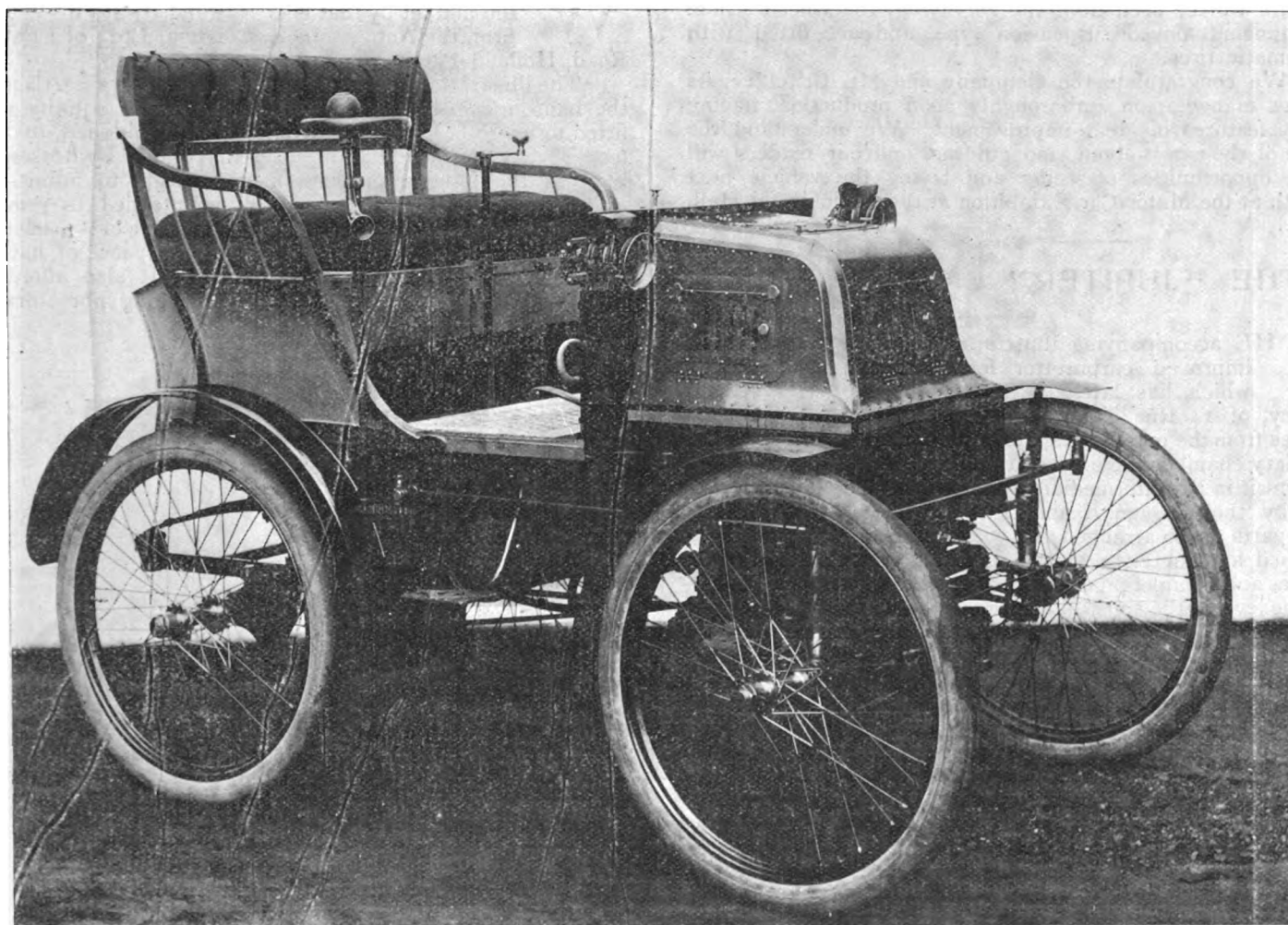
The class or type of vehicle to be employed in conducting these services is of course one of the first questions to be considered. Speaking generally, we think it will be found that in the majority of cases vehicles of a moderate size, carrying a medium number of passengers, will be found to be more profitable than larger and more costly vehicles carrying a greater number of persons. It follows that if a vehicle is properly "powered" it will be more profitable to run it with a full than with a partial load. It generally occurs that full moderate loads at frequent intervals can more easily be secured than larger loads at less frequent periods. Besides this, directly a vehicle becomes unwieldy and unduly heavy, partly owing to its greater capacity, half of the advantages of mechanical locomotion are lost, by reason of its inability to thread its way with such ease as the smaller and lighter vehicle through congested traffic; its greater weight and length, too, make the vehicle less "handy" either in traffic or in turning. It is generally found, also, that the wear and tear of the larger vehicle is proportionately greater than that of the smaller. Again, if one of the smaller vehicles of a frequent service is incapacitated by reason of accident or breakdown, the inconvenience to the public will be less than would be the case if a large vehicle of an infrequent service were unable to carry out its duty.

It is always advisable to have a spare vehicle ready to put on the road in case of breakdown or pressure of traffic, and the capital thus partly idle is of course much less in the case of a vehicle of moderate dimensions than with the larger and more capacious carriage. Except in very exceptional cases, therefore, a vehicle of moderate size and carrying a moderate load is likely to prove more remunerative, as well as more convenient, than a larger conveyance that at the first glance would appear to be more profitable by reason of its greater capacity.

(To be continued.)

FROM all sides complaints are now heard in Paris in regard to the furious speeds of certain motor-car drivers. At Neuilly, in particular, it is on the tapis to prohibit the circulation of motor-cars on the lower side of the Avenue. The shop-keepers complain of the danger that arises from motor-cycles which are driven at full speeds round the corners of the streets adjoining the Avenue. The regulations allow a speed of 20 kilometres a hour through traffic, and the chauffeurs can go at their full speed in the open country if they like, but they must decrease their speed when there is the least obstacle.

## The New Light Daimler Car.



THE DAIMLER MOTOR CO.'S NEW TWO-SEATED LIGHT CAR.

WE illustrate herewith the latest production of the Daimler Motor Co., Ltd., of Coventry and London. The car will fill a long felt want, being light and very speedy, moderately priced, roomy and comfortable, and extremely easy of manipulation. Indeed, its last recommendation makes it an ideal car for a lady's use, as the change of speeds, the guiding of the car, and putting the motor into gear with the road wheels can be effected with ease by the little finger alone.

The engine is of the usual Daimler type, and therefore needs but little description. It is of the double cylinder vertical type, has tube ignition, and develops 4 h.p. effective. It is so placed, contrary to the Daimler Co.'s previous practice, that its crank shaft lies athwart the frame, and not in line with its length as usual. The crank and valve-control gear is contained in an aluminium casing, preventing the outflow of any oil. The crank shaft is extended right across the frame, bearing on each of its ends belt pulleys. The engine itself is suspended in an ingenious manner, and can be adjusted in position by manipulating two tie-rods fitted with bolts projecting in a forward direction through the frame body.

The power is transmitted from the pulleys on the crank shaft by means of belts to an intermediate shaft, and from thence by a chain and sprocket to the rear axle. In this case the rear axle is a live one, the road wheels, of course, being fixed thereto. One, and a leading, feature of this car

is the extreme care taken in providing this axle with sufficient bearing surface to prevent any possibility of it giving way at the differential coupling. At each side of the frame, it is carried in a long sleeve, and has additional bearings at the centre, the whole being firmly tied by upper and lower suspension axle braces.

Primarily two speeds are provided by the two belts, fourteen miles and twenty-eight miles per hour nominal. These speeds, however, are increased to four by an ingenious application of an old form of "tooth-seeking" gear. This permits the low speed to be cut down to one half, and the high speed to be cut down to such proportion as may be laid down. The belt shifting device is controlled by a small hinged lever placed on the left of the driver immediately under his hand and quite close to the front of the seat. It moves over 180 degrees of a circle, but each speed requires its movement only over ninety degrees. When the lever is partially turned in this quarter circle, some amount of "slip" takes place and consequently the speed developed is not quite up to its normal rate; when the lever is placed at less than forty-five degrees, however, it is made to automatically return to dead centre, so that both belts are placed on the loose pulleys. The speed-dividing gear is also worked by a small hinged lever working in slots in the remaining 180 degrees of the circle occupied jointly with the belt shifting device.

Steering is easily effected by a small hand-wheel placed on the right of the driver, immediately under his hand.



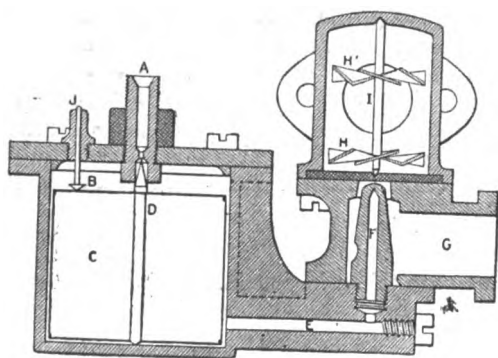
Consequently no straining of the body or reaching forward is necessary in effecting any of the manipulations necessary for controlling the car, and from this point alone it offers great convenience, especially to lady drivers, who can carry out every operation without removing from the comfortable back rests fitted to the carriage.

As will be seen from the engraving, the wheels are of the tangent-spoked suspension type, and are fitted with pneumatic tires.

We congratulate the Company and Mr. Critchley, its work's manager, on a thoroughly good production, having many features of great improvement. We understand the price of the car is about 200 guineas, and our readers will have opportunities of seeing and trying the vehicle next month at the Motor-Car Exhibition at the Agricultural Hall.

## THE "JUPITER" CARBURETTOR.

THE accompanying illustration shows a section of an improved carburettor for petroleum-spirit motors which has lately been introduced by M. W. H. Dovey, of 14 Rue Torricelli, Paris. The petroleum-spirit passes from the main storage tank by the pipe *A* into an intermediary chamber provided with a float *C*. As the level of the spirit in the intermediary chamber rises the spirit passes out by the passage *E* and rises up the vertical tube *F*. The parts are so arranged that when the level of the spirit has reached a point close to the top of the pipe *F* the float *C* rises and the inlet pipe *A* is closed by means of the needle *D*. As the level of the spirit in the apparatus falls the float *C* and the needle *D* fall, so again opening and allowing spirit to pass along the pipe *A*. Air is drawn in through the opening *G* and projected against the piece *F*. The latter is of a special form, its exterior surface being conical, and provided with three helicoidal grooves; the effect is to cause the indrawn



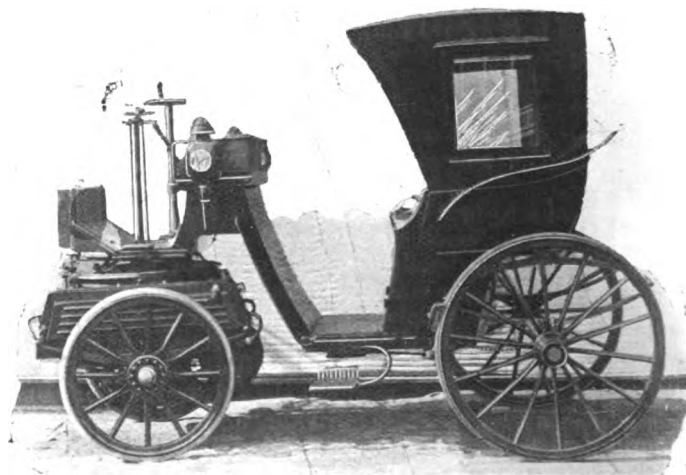
air in rising to travel round the piece *F*, a preliminary mixture of the air and spirit taking place at the top of the piece *F*. Arranged in an upper chamber are two small fans, *H H'*, which under the effect of the aspiration stroke of the motor revolve automatically, further intermingling the air and spirit ere the carburetted air passes out through the opening *I* to the explosion chamber of the motor. The opening *G* can be regulated to allow any desired quantity of air to pass into the carburettor, while a regulating device is provided on the outlet pipe *I* by means of which the quantity of carburetted air allowed to pass to the explosion chamber can be varied as desired. It is claimed that the carburettor, after once being regulated, gives a constant and steady supply of carburetted air, and that it can be employed for different sizes of motors, it only being necessary to enlarge or reduce the spirit outlet in the piece *F*.

Two Glasgow business men are at present making their usual "journey" throughout the South-East of Scotland on a motor-car. They arrived in Hawick the other day from Jedburgh, having covered the distance—including four stoppages—in seventy minutes.

## THE KHÜLSTEIN-VOLLMER MOTOR-TRACTOR.

WE illustrate herewith the latest vehicle placed upon the market by that energetic and always up-to-date firm, the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, W.

The illustration shows the tractor applied to a carriage of the hansom cab type, but it can, of course, be equally well fitted to any other form of carriage body, or, indeed, to any four-wheeled vehicle that is ordinarily drawn by horses, so long as the fore-part is of sufficient height to admit the tractor under it. By this means it is intended to provide automobilists with a means of using a number of vehicles of quite distinct forms, without going to the expense of having more than one set of motor-mechanism. It also affords a ready and cheap means of converting existing horse-drawn carriages or vans into motor-vehicles.



THE KÜHLSTEIN-VOLLMER MOTOR-TRACTOR.

The motor is of the double cylinder horizontal type, developing a maximum of 6 h.p., and its charges are electrically ignited. The power is transmitted from the crank shaft of the motor by belts, and the whole of the motor and transmission and speed-changing gear is contained in the casing shown. As the steering wheels are also the driving wheels, it follows that the turning of the vehicle is effected much more readily than is the case when the driven wheels are other than the steerers. In the present case every impulse of the engine assists the steering wheels on their designed course, whilst on rear-driven and front-steered cars the driven wheels taking the power are not running in strict accord with the curve given to the front or steering wheels. It is also held that in cases where the driven wheels are also the steerers there is very considerably less likelihood of the vehicle "skidding," owing to the fact that any undesired movement of travel can instantly be corrected by the steering device, whilst when the wheels of a rear-driven car skid, it is only possible to correct *their* undesigned movement through manipulation of the front wheels.

Additional power is gained in steering this vehicle by the fact that the construction of the turntable permits a full lock to be obtained.

The device is of German origin, and was used for some time on vehicles employed by the German Post Office for delivering and collecting mails. We are informed by the English agents that when attached to a delivery van this tractor has hauled a load of one ton on ordinary roads at a fair speed with perfect ease.



## The English "Hurtu" Car.



MESSRS. MARSHALL'S ENGLISH-BUILT "HURTU" MOTOR-CAR.

WE illustrate herewith an entirely new production of British manufacture possessing very considerable merits, and of handsome appearance. It is designed to seat two persons primarily, but four may be carried with ease, whilst an emergency seat gives accommodation for a fifth. The origin of the car is French, but the details of construction have been so very considerably improved and strengthened that in its British form it practically becomes a new type of vehicle. The comfort of the passengers has been studied in every way, and freedom from vibration, and comfort in seating are two noticeable features in this respect. The springs are ample in resisting vibration set up by road inequalities, and the fore-carriage is so arranged that, in steering, a  $\frac{3}{8}$  lock is secured, thus giving power to turn in a limited space. All four wheels are of the suspension, tangentially-spoked type, and are furnished with high grade pneumatic tires.

The motor is designed to give 4 h.p. effective, and is of the single cylinder horizontal type, with a bore of 5 ins. and a stroke of  $5\frac{1}{2}$  ins. Its normal speed is about 450 revolutions

per minute. Power is transmitted from the engine crank-shaft to an intermediate shaft by belts, and from thence by sprockets and chain wheels to the rear road-wheels by chains. The carburettor is of the surface contact type, constructed on a special system, whilst ignition is effected by means of an electric spark taken through a coil giving very high tension, from secondary batteries. Arrangements are made for timing the ignition apparatus, so that the explosion of the gases can be retarded or accelerated. The transmission gear gives two speeds, one of eight miles and one about fifteen miles, but these can be varied in either direction by controlling the sparking device. The belt guides for transferring the belts from fast to loose pulleys are fixed to a carrier running on wheels over transverse guides, thus ensuring both ease and rapidity in changing. The belt pulleys are flat-faced, but their faces have a large number of holes drilled in them, this being done to secure greater adhesion of the belts. Two brakes are provided, one a "jamming" brake as distinct from an ordinary band brake, which acts on the wheel hubs, and an emergency or shoe brake acting on the tires.

The overall dimensions of the car are: length, 7 ft. 6 in.; width, 4 ft. 8 in. The valves are easily accessible, and the springs can be quickly replaced, whilst all wear on bearings can be quickly taken up. The provision of a special form of exhaust box ensures silence in running, and the frame possesses great rigidity and strength.

The makers of this vehicle are Messrs. Marshall & Co., of Belsize Works, Clayton, Manchester, whilst the London Autocar Co., Ltd., of Gray's Inn Road, W.C., are the agents for London and the southern counties.

We congratulate both firms on the production of a thoroughly satisfactory, reliable, and extremely cheap motor-vehicle, possessing a graceful appearance, and being constructed on essentially British principles as regards strength, and quality of workmanship and material.

THE Waltham Manufacturing Co., of Waltham, Mass., U.S.A., has secured the rights of manufacture and sale of the De Dion motors in the United States.

MOTOR-CYCLES in Vienna, according to *Motorfahrer*, are to be placed in the same category as motor-vehicles, and cannot be ridden without a licence. The same regulation holds in France and Germany. A stamped request to use such machine must be addressed to the police authorities, after which the vehicle is tested by a commission consisting of an engineer and commissary of police. If all goes well the permit is issued.

A STAMPEDE of cattle in a busy thoroughfare in London is not a sight that can be witnessed every day; but such has occurred, and that, unfortunately, at the distinct expense of an elderly tricyclist who was leisurely riding his machine along Maida Vale, a well-known thoroughfare in the West of London. Everything was quiet and peaceful until a steam motor-wagon hove in sight, and created such a scare that some animals, which were quietly passing, took fright, rushed into the tricyclist, and knocked him down. Both legs were broken, necessitating immediate removal to the hospital. The machine was smashed to pieces.

THE automobile cab is to be introduced upon the broad asphalted streets of Washington. There are now fifty of the vehicles being built at Hartford, and the first will be delivered within a few days. They will be controlled by the syndicate which now owns nearly all the traction lines there. Some carriages will be sold outright and others will be put into service on the Charron plan now in vogue in Paris. By this plan the carriages are rented by the month and are accessible at all hours, being kept charged for immediate service and supplied with motor-men for their operation. The company also proposes to put into service a number of store delivery wagons.

LAST week, at the St. Martin's Town Hall, Mr. Troutbeck, the Westminster Coroner, held an inquest as to the death of a lady, named Mrs. Susan Brookes, aged sixty, who was killed by being run over by an electric motor-carriage in Shaftesbury Avenue on the 29th ult. The evidence was to the effect that at about twenty minutes past seven in the evening an electric motor dog-cart was being driven by its owner, Mr. Leitner, of 207 Piccadilly, W., down Shaftesbury Avenue, when the deceased crossed the road close to the cab-rank near Wardour Street, in front of the vehicle, and was knocked down. Inside the carriage was Major Rolleston, of Newark. The speed of the vehicle was stated to be a moderate one, and it was proved that Mr. Leitner, who himself drove the motor, sounded his "hooter" to warn the deceased when she started to go across the road. The old lady turned back, and then started again, with the result that the fore part of the carriage struck her, although an attempt was made to turn the vehicle aside before it reached her. She was removed to Charing Cross Hospital, where she died from her injuries. The jury returned a verdict of accidental death.

## SCOTTISH NOTES.



### Summer at last.

THE weather of the past week has forced upon one the fact that until recently some had good reason to doubt, namely, that "summer had come." For ten days in the Scottish midlands the sun has shone almost without a cloud to hide its brilliancy and often without a breath of wind to temper its heat. But for one thing the motorist can revel in such weather—no wind to impede the progress of his swift-moving car (the only breeze, caused by the rapid flight over the road surface, being delightfully cool and refreshing), no mud to clog his chains: nothing save the fine powdery dust which ere long mysteriously clothes both the car and its occupants. This, of course, is one of the trifling objections to distance travelling by road on vehicles of any kind, but it is certainly emphasised on a fast-running, rubber-shod motor-car. With suitable dust cloaks, however, the "touring party" suffers little personal discomfort or inconvenience, and he is more than compensated for his trouble at the journey's end in a thousand ways. To any of my readers who may be still undecided as to how and where they will spend their summer vacation I would recommend them to at once decide to spend it on a first-class motor-car in touring through the charming highlands and lowlands of "bonnie Scotland."

### Scottish Tours.

DURING the past week or so reports have reached me of parties engaged in "doing Scotland" by motor-car, and I have been frequently asked for information as to the best routes to be taken for this purpose. I have therefore decided to sketch out a few "Scottish tours" for the benefit of the readers of *The Motor-Car Journal*, to commence with next week's issue.

### Edinburgh Autocar Co., Limited.

THIS Company, the flotation of which I referred to last week, has, I learn, got successfully under weigh, and from the information I have its management does not mean to allow the grass to grow under their feet. They are already in possession of the new and spacious premises in Lothian Road, and the necessary alterations and fitting up of the property to adapt it to the needs of the Company's business are being pushed on energetically, and in a few weeks' time the whole of the concern, it is expected, will be removed from Abbeyhill to the new quarters, where every facility will be at hand for coping with the large and ever-growing business.

### The Scottish Club.

I HAVE this week heard some expressions of disappointment that the *pro tem.* committee which has the matter of the arrangements for an inaugural meeting in connection with the proposed Automobile Club in hand have not been called together since their last meeting on May 10th—more than three weeks ago. I have also heard that if Glasgow does not "hurry up" the go-ahead Edinburgh motorists will proceed to take the lead. Messrs. Mitchell and Smith, please note.

### Glasgow to London by Motor-Car.

I UNDERSTAND there is a proposal on foot to form a "touring party" to "motor" up to London next week to arrive in time for the opening of the Show at Richmond Park on Saturday, 17th inst. This would be a good opportunity for any who desire to have an experience of long-distance motoring. If a sufficient number apply, cars, I am

informed, will leave George Square, Glasgow, on Wednesday morning, 14th inst., at 6 a.m. Intending "tourists" should communicate at once with Mr. J. D. Brimlow, 21 Campbell Street, Hamilton. The fare for the double journey is, I believe, to be fixed at £3 10s., being equal to about the parliamentary railway rate of one penny per mile—certainly a very moderate rate. I understand Mr. John Stirling is driving up to the Show on the same date on the Stirling-Daimler dog-cart which has carried him on all his record rides during the past two years. He is as yet undecided whether he will travel by the East or West route.

**The Late Robert Cox, M.P.**

By the lamented death of Mr. Robert Cox, M.P. for South Edinburgh, the Madelvic Motor-Carriage Co., Ltd., of Granton, have been deprived of the services of a capable chairman and a gentleman who took a keen interest in the development of the motor industry in Scotland. For some time past he had not enjoyed the best of health, but he was always sanguine of his ultimate recovery. Before the business of the fortnightly meeting of the Edinburgh Town Council on Tuesday was begun, Lord Provost Mitchell made reference to the death of the Member for the Southern Division of the City, and dwelt upon Mr. Cox's philanthropic and public spirit, thereafter moving that the Council record its sense of the deep loss it had sustained as a city, and that the Town Clerk be instructed to forward a letter of condolence to Mrs. Cox. The proposal was unanimously adopted.

**Scottish Makers at the London Shows.**

I HAD an opportunity this week of inspecting some of the cars which are being prepared by Messrs. Stirling's Motor-Carriages, Ltd., of Hamilton, for the forthcoming London Shows, and I venture to predict that for elegance of design, quality of workmanship, and high finish, these will take some beating. The Victoria de luxe with the new Pennington motor which I saw in the finishing shop is one of the smartest carriages I have seen, and ought to prove a centre of attraction at the Shows. I understand this Company are exhibiting five Stirling-Daimler carriages and three Stirling-Penningtons. I believe it is also the intention of the Madelvic Motor Co., of Granton, to exhibit several of their elegant electrical carriages, but I have not yet obtained detailed particulars of the same.

**The Stirling-Leyland Steam 'Bus in the North.**

THE Stirling-Leyland 'bus on its journey through Stirling and Perth on its way to Dundee last week caused considerable excitement. It was the first vehicle of such dimensions to visit that part of the country. In the "fair city" it had an enthusiastic reception. Over the whole journey or some eighty miles the 'bus travelled splendidly and gave the utmost satisfaction.

**Motors at Muirkirk.**

THE Ayrshire village of Muirkirk was invaded by motor-cars on Saturday last, four large carriages arriving about noon with some thirty to forty "trippers" from Motherwell. While the "trippers" "picnicked" two of the cars were utilized to give the natives a treat in the form of short motor-car rides, which were, I understand, much liked by the said natives.

**Motor-Car at Hawick.**

A VERY pretty motor-wagonette is this week running in the Hawick district. It is fitted with the Daimler motor and appears to be in private use. The district is one in which motor-char-a-bancs could, I think, be run to some purpose.

"BROWN HEATHER."

**CORRESPONDENCE.**



**THE PANHARD CAR AT THE CRYSTAL PALACE CONTESTS.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having had a number of enquiries as to why my Panhard carriage did not come in for an award at the above contests (Class D), it may be of interest to state that when rounding a sharp corner at high speed one of the chains flew off owing to its being too slack (I had only arrived, by road, shortly before from Paris, *via* Newhaven, and being pressed for time neglected to properly adjust them); I then had to stop to replace the chain, thereby being disqualified and losing the medal. My time over the course, however, although I had to stop the car, dismount, replace the chain, and start again, was 6 min. 59 $\frac{3}{4}$  sec., or but 27 $\frac{3}{4}$  sec. outside the winner's time.

I was afterwards courteously invited to "go for record" at the termination of the van trials, but a marshal detained me at one of the stopping places to argue as to my disqualification, and it took a little while to convince him that I was not claiming a medal but merely going for time. I was also considerably delayed by one or two vans that had not got clear of the course. Yet my time on this attempt was 5 min. 34 $\frac{3}{4}$  sec., being well inside the fastest time of the other cars that took part in *any* of the contests.

Knightsbridge.

Yours truly,

June 3rd, 1899.

CHARLES S. ROLLS.

**IRREGULAR POWER FROM DE DION MOTORS.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I very much sympathise with Mr. Williams, and wish I could help him, as I have often been in a fix with my tricycle, and, being miles away from any one who could put me right, it was only by persevering for hours that I was able to find what was wrong.

For twelve months I rode a Beeston tube-ignition, and at the end of that time I could easily discover anything which was wrong. Now I have gone in for electric ignition, with consequently fresh complaints to diagnose.

Now, I think, Sir, if some of those who have had experience would give us a few tips upon what is likely to go wrong it would be a great help to novices. For instance, in my own experience the following have been sources of trouble:—

1. The gauzes between cylinder and inlet tube have become coated with carbon.
2. The washer at cylinder end of inlet tube getting loose and allowing air to be drawn in.
3. Within the past few days I put too much oil in crank chamber, consequently it got on to sparking plug and machine would not work. After cleaning plug about twenty times I at last took off cylinder cover and found a quantity of oil on top of piston. I cleaned this off and tried machine again, but still oil appeared on the plug. I took the cover off again and worked the machine on a block by means of the pedals, so that I could watch the piston. Oil worked up over the piston, and I thought new rings would be necessary. However, I put the cover on again and tried with three-quarter measure of oil. The machine went for about three minutes at a time, but there was no oil on the plugs, only a little soot; on cleaning this off the machine went for another three minutes, and I came to the conclusion that the batteries had become too weak. As a last resource I put in a third plug and the machine went beautifully. I found that in the other two plugs which I had been trying the platinum point which is inserted in the metal was loose, and I suppose oil had worked down by the side and spoiled the connection.

Will someone kindly answer the following questions:—

1. Should the platinum points be brazed into the plug?

2. How can one tell when the batteries are too weak, or how long they are going to last?
3. Should any oil appear on the top of the piston?
4. What are the internal connections of an induction coil as used on the De Dion tricycle?
5. In case of doubt whether the batteries have run down, could bichromate batteries be tried, and what size?

I must apologise for the length of this letter, but hope you will be able to find room for it.

Twynford,

June 6th, 1899.

Yours faithfully,

"NOVICE."

## MOTOR-CARS ON THE CONTINENT.

### Politics and Automobillism.

It is very much to be regretted that a few members of the French Automobile Club, and amongst them Count de Dion, took an active part in the manifestations which occurred on Sunday at the Auteuil races against the Government and the President of the Republic. Count de Dion was arrested soon after the manifestations commenced, but he was speedily released. Unfortunately, however, he was unwise enough to again take part, and was on these grounds again arrested and conveyed to prison, with many other personalities, in what is called in Paris "le panier à salade"—an entirely shut-up vehicle with very bad springs, which is generally used to carry members of the demi-monde to the police dépôt. More than fifty arrests were made, and amongst those so arrested were, we regret to state, Count Albert de Dion and about twelve other members of the Automobile Club of France. It is very much to be deplored that a few members of the Club should have taken part in such a discreditable affair, which threatens to have such a serious effect upon automobilism in France.

### The Automobile Club Closed.

ON Monday M. Cochefert presented himself at the Automobile Club on the Place de la Concorde at 2 o'clock in the afternoon, and announced that the Club was closed by order of the Police, and requested everyone present to at once depart preliminary to his sealing all the doors. It is certainly very extraordinary and absurd that such a step should have been taken against the Club, which has never taken any part in political questions or public ferments. The private acts of a few members should not be sufficient reason for forcibly closing a club which is, and will remain, let us hope, a purely social, commercial, and sporting affair. It is to be hoped that this extreme measure will not be permanent, and that the Club's handsome hotel, as well as its villa, will soon be permitted to be used again by that large body of members who have joined its organization on thoroughly *bonâ fide* grounds and solely with a view to the advancement of automobilism.

### Concours des Fiacres.

THE Concours des Fiacres which began on June 2nd has not produced any new vehicle, and the competitors taking part are nearly the same as those participating in the trials of last year. The present participants are Jeantaud, Jenatzy, Krieger, and Mildé, with electric vehicles, and Panhard and Levassor with a petroleum-spirit motor-vehicle. It is to be noted that Peugeot has not entered the competition, probably on account of the poor award made him last year, notwithstanding the extremely good performance of his cab. The first three days of the competition are devoted purely to scientific tests made to ascertain the most economical vehicle. The practical test of the vehicles on bad roads and inclines will be reserved for the last days of the competition. So far, the average speeds of the vehicles running through Paris have been a little over

15 km. an hour, which is a good result considering the heavy traffic and the very bad state of the streets, which are now torn up in every direction for works in connection with the Exhibition of 1900.

### Results of the Concours des Fiacres.

THE distance traversed by the cabs and light delivery vans was 60 kilometres, and this had to be negotiated not only through the dense traffic of the Paris streets, but also over roads very badly paved and quite out of ordinary condition owing to the vast operations now being carried on in regard to the Metropolitan Railway and other works in connection with next year's Exhibition. In addition to the time occupied in lunching, which is shown in the following table, each vehicle had an additional compulsory stop of thirty minutes. The results are given in the last column but one, and all stopping times are deducted; the times are therefore net.

| Description.                           | Time of Departure. | Déjeuner. |       | Time of Arrival. | Net Running Time. | Observers.       |
|--|--------------------|-----------|-------|------------------|-------------------|------------------|
|  |                    | From      | To    |                  |                   |                  |
| 1. Coupé Jenatzy 2 pl.                 | 9 4                | 1 8       | 1 50  | 3 13             | 4 57              | MM. Herbet       |
| 2. Victoria Jenatzy, 2 places          | 9 7                | 3 41      | 4 18  | 6 17             | 8 3               | Bardy            |
| 4. Light Parcels Van Jenatzy           | 8 56               | 12 38     | 1 45  | 1 45             | 3 27              | Colardeau        |
| 5. Cab Jeantaud, 2 places              | 8 58               | 12 2      | 1 2   | 2 14             | 3 46              | Tainturier       |
| 6. Victoria Jeantaud, 2 places         | 9 1                | 12 4      | 1 4   | 2 11             | 3 40              | Morin            |
| 7. Mylord Jeantaud, 2 places           | 9 3                | 11 58     | 12 58 | 2 3              | 3 30              | Guillaume        |
| 8. Light Parcels Van Mildé             | 8 24               | 11 50     | 12 54 | 2 12             | 4 14              | Diény            |
| 9. Victoria Krieger, 4 places          | 8 54               | 11 50     | 12 50 | 1 50             | 3 26              | Renaud           |
| 13. Coupé Panhard & Levassor, 4 places | 8 55               | 11 44     | 12 47 | 1 46             | 3 21              | Cte. des Essards |
| 14. Light Parcels Van Panhard & Levas. | 8 31               | 11 49     | 12 51 | 1 54             | 3 51              | MarcoMendoza     |
| 15. Drojsky Jeantaud                   | 9 0                | 12 3      | 1 30  | 2 8              | 3 38              | Plane            |

It will be seen from this table that of the two-seated passenger vehicles the Panhard and Levassor coupé took the least time to travel the course, being five minutes in front of the Krieger Victoria, with four seats, which in turn was four minutes quicker than the Jeantaud "My lord." The Jeantaud vehicles secured the next three places, in the following times: 3 h. 38 m., 3 h. 40 m., 3 h. 46 m. The quickest Jenatzy passenger vehicle took 4 h. 57 m., whilst another took no less than 8 h. 3 m. Most of the passenger vehicles seem to have performed a difficult task within very fair times, the average speed of the first group being over sixteen miles per hour. The light delivery vans also did well, in this instance the Jenatzy electric vehicle beating the Panhard by twenty-four minutes.

### The Antwerp Exhibition.

UNFORTUNATELY it cannot be said that the Salon du Cycle et de l'Automobile at Antwerp has proved successful. The public did not attend at all well, notwithstanding the fact that the prices of admission were reduced by 50 per cent. from those originally laid down. The exhibition was controlled and organized by a syndicate of sporting newspapers, and, judging from all accounts, the syndicate has managed to offend both exhibitors and visitors by insufferable pretensions. As a result only a few of the less important manufacturers have permitted themselves to be bound by the ridiculous regulations laid down. The public, learning that

the exhibition was neither comprehensive nor particularly selective from a first-class standpoint, refused to be induced to visit the show.

### The Voiturette Competition.

THIS competition over 100 kilometres of road between Etampes and Chartres was run off on the 6th inst. The entries were as follows: 1, E. Giraud (Bollée); 2, Jamin (Bollée); 3, Gros; 4, Wilfrid (Bollée); 5, Schmitt (Decauville); 6, Bian (Decauville); 7, Strutz (Bollée); 8, Cornilleau (Decauville); 9, Ravenez (Decauville); 10, Mourier (Decauville); 11, Aubin (Decauville); 12, 13, and 14, Three Nominees (Bollées); 15, A. Coutot. The order of arrival has not reached us up to the moment of going to press.

### The French Automobile Dictionary.

LIKE their English confreres, the French automobilists are considerably hampered by restrictions in language applicable to motor-car matters. They, like the English, as instanced by Mr. Shippey's letter in a recent issue, are on the look-out for terms, or rather words, which will correctly designate special types or styles of cars. M. Pierre Giffard asks that "dionbouton," "daimler," "phenix," "panhard," "bollée," "mors," "benz," etc., shall become common substantives to be correctly used in describing the cars to which they relate. These terms are certainly more harmonious to the ear than some recently suggested by an American *chauffeur*.

### "Le Fête des Artistes."

THE "Fête des Artistes," organized on June 2nd by the *Echo de Paris* proved a success and was favoured with splendid weather. The resulting profits were over 8,000 francs, and this is handed over to the charity fund for distressed dramatic artistes. The fête comprised amongst its attractions frequent processions of the cars all most beautifully decked and garnished with real flowers. The lady's driving championship was won by Miss Lea Lemoure for the second time, whilst Miss H. de Limoges secured second honours, and Miss Emma Montigny was happy in securing third place. We will not attempt to give a full account of the *défilé fleuri*, which was really magnificent—considerably over a hundred cars taking part in it—all the cars being very magnificently yet tastefully decorated. Many of the same cars took part next day in the Longchamps *fleuri* and battle of flowers.

### Mr. Winton's Challenge.

THE well-known American *chauffeur*, Mr. Winton, has challenged any man in France for a 1,000 mile race in the United States. M. Charron has immediately accepted it, and has written to the editor of the *New York Herald* enclosing a cheque for 20,000 francs as guarantee of good faith, accepting all the conditions laid down by Mr. Winton. There is but little doubt that M. Charron will prove the winner. He will be accompanied to the United States by M. René de Knyff.

### The Automobile Club of France.

THE Automobile Club is still closed, and is, as a club, "dissolved" by order of the police, and a guard of policemen surround the entry to the club house and that of the club villa on the Bois de Boulogne. Baron de Zuylen has interviewed the Prefect of Police, and made a request that the Club should be permitted to re-open its doors, giving definite assurances that politics had never been discussed at any of the Club's meetings. The Prefect declared he would transmit Baron de Zuylen's demand to M. Dupuy, President of the

Council. Count de Dion is still in prison, and will probably be severely punished both for his actions in giving utterance to political cries and for his resistance of the police. From the latest intelligence and official information courteously accorded us by the French Government officials, we learn that the Club has only been closed on account of Count De Dion's actions, and thus to punish him for the scandalous way he acted by closing an organization of which he is the leading spirit. It is very probable that Count De Dion will be obliged to resign from the club as vice-president, and also to resign the presidency of the *Chambre Syndicate de l'Automobile*, as well as that of the *Aéro Club*. We certainly think he ought to resign, and now learn that he has offered to do so, but we think also that his resignation ought not to be accepted, for it is nearly impossible to conserve automobilism without the help and strength of Count De Dion. Count De Dion is the one man who has worked and done the most in France for the development of the automobile industry, and no matter how bad may be his private life or actions it should not affect the welfare of the club, where nothing else but subjects connected with the mechanism and theory of automobiles were ever discussed. Fortunately neither the Club's Exhibition nor the *Concours des Fiâcles* will be affected in any way.

### Automobile Club de Belgique.

THE itinerary of the Bruxelles-Spa touring race is now definitely determined. After having ascertained all the particulars of the route the Committee is now dealing with the making up of the map and profile, which will shortly be placed at the disposal of the contestants. The final date for the receipt of entries is fixed for the 15th inst., and all entries should be sent to the Treasurer of the Automobile Club de Belgique, 5 Place Royale, Bruxelles.

D. FARMAN.

LAST week we had the pleasure of a twenty mile spin on the new Hurlu car, built by Messrs. Marshall & Co., Belsize Works, Manchester. The car can travel from sixteen to eighteen miles an hour, and mounts gradients well. Having pneumatic tires it is an easy running car, and being British built it is sure to command a large sale. The London agents are the London Autocar Co., Ltd., 182 Gray's Inn Road, W.C.

### "DRIVING TO THE COMMON DANGER."

AT Bow Street, on the 6th inst., Mr. Sidney Atkins, a director of the Automobile Association, of Prince's Road, Holland Park, and Fred Frenzell, an engineer in the employment of the Association, appeared before Sir James Vaughan to summonses charging them with having driven a motor-car to the common danger on Constitution Hill on May 19th.

Mr. Chaproniere defended.

The car in question was one of those which attended a motor-car meet at Whitehall on May 19th, but, becoming disabled, it was left behind on Constitution Hill, where, according to the police evidence, it caused great commotion and some danger, its erratic movements and the noise of its machinery frightening the horses passing.

Viscount Sudeley, captain of the Royal Horse Guards, now said that he was in charge of a troop of twenty-eight men proceeding from Whitehall to Hyde Park Corner at the time in question. As they passed the defendants' car the horses were frightened by the throbbing of the machinery. The car itself was not moving at the time.

In reply to Mr. Chaproniere, Lord Sudeley said that the horses were not very much alarmed. He had seen them equally frightened by other things.

Mr. Chaproniere called the defendant, Mr. Atkins, who said that the forward driving gear of the car had become fixed, so that it was impossible to drive the machine. They did once move it backwards in order, if possible, to release the clutch, but that was the only time the car moved, and as soon as the inspector spoke to him the machinery was stopped.

Inspector Hamilton, however, said that though the machinery was stopped when he spoke to the defendants at 11.45, at 12.10 it was started again.

Sir James Vaughan said that while he did not think this a case for a heavy penalty, it did not seem that the safety of the public was sufficiently considered by the defendants, and they would each be fined 20s. and costs.



## THE COST OF MOTOR-VEHICLE TRIALS.

IN order that our readers may possess some information of the vast expense incurred in conducting tests of motor-vehicles, we publish herewith the accounts of the 1898 Trials Committee of the Liverpool Self-Propelled Traffic Association. This gives an idea of the expense incurred, but affords no criterion of the vast amount of work involved, the whole of which was voluntarily carried out without remuneration by Mr. E. Shrapnell Smith, the hon. secretary.

### 1898 TRIALS ACCOUNT.

Statement of Receipts and Expenditure to May 13th, 1899.

#### RECEIPTS.

|                               | £    | s. | d. |
|-------------------------------|------|----|----|
| To Subscriptions .. .. .      | 589  | 18 | 0  |
| „ Entry Fees .. .. .          | 35   | 14 | 0  |
| „ Badges, Maps and Diplomas.. | 22   | 6  | 9  |
| „ Light Carriage Tickets ..   | 80   | 5  | 0  |
| „ Reports .. .. .             | 45   | 10 | 2  |
| „ Bankers' Interest .. .      | 1    | 5  | 2  |
| „ Balance* .. .. .            | 47   | 9  | 2  |
|                               | £822 | 8  | 3  |

#### EXPENDITURE.

|  | £    | s. | d. |
|--|------|----|----|
| By Awards .. .. .  | 225  | 0  | 0  |
| „ Report, including blocks ..                            | 113  | 13 | 6  |
| „ Light Carriages .. .. .                                | 95   | 10 | 10 |
| „ Printing and Stationery ..                             | 88   | 6  | 6  |
| „ Badges and Diplomas .. .                               | 50   | 19 | 6  |
| „ Postages and Telegrams ..                              | 49   | 14 | 11 |
| „ Depôts and Offices .. .                                | 41   | 1  | 1  |
| „ Utensils and Equipment ..                              | 36   | 0  | 6  |
| „ Route Maps and Placarding ..                           | 34   | 0  | 0  |
| „ Advertising .. .. .                                    | 22   | 8  | 10 |
| „ Office Staff .. .. .                                   | 19   | 7  | 3  |
| „ Observers' Expenses .. .                               | 17   | 10 | 4  |
| „ Hon. Sec.'s Travelling Expenses ..                     | 17   | 10 | 0  |
| „ Police Attendance .. ..                                | 8    | 11 | 0  |
| „ Bank Charges .. .. .                                   | 1    | 15 | 3  |
| „ Deficiency on Dinner and Entertainment Account .. .. . | 0    | 18 | 9  |
|  | £822 | 8  | 3  |

\*By Balance brought down—

|                     |     |   |    |
|---------------------|-----|---|----|
| Due to Hon. Sec. .. | £35 | 3 | 10 |
| Account owing ..    | 11  | 5 | 4  |
|                     | £47 | 9 | 2  |

### DINNER AND ENTERTAINMENT ACCOUNT.

#### RECEIPTS.

|                                 | £    | s. | d. |
|---------------------------------|------|----|----|
| To Special Subscriptions .. ..  | 110  | 0  | 0  |
| „ Dinner Tickets .. .. .        | 67   | 4  | 0  |
| „ Balance to General Account .. | 0    | 18 | 9  |
|                                 | £178 | 2  | 9  |

#### EXPENDITURE.

|                                | £    | s. | d. |
|--------------------------------|------|----|----|
| By Adelphi Hotel Account .. .. | 150  | 13 | 9  |
| „ Euterpean Orchestra .. ..    | 13   | 18 | 0  |
| „ New Empire Theatre .. ..     | 13   | 11 | 0  |
|                                | £178 | 2  | 9  |

THE American Electric Manufacturing and Power Co. has been incorporated in Dover, Del., to manufacture motor-vehicles to be propelled by air, electricity, gas, etc. The capital is £200,000.

AMONGST many others who laid themselves out to afford accommodation for the members of the Automobile Club on their Whitsun tour was Mr. C. T. Crowden, of the Motor Works, Leamington, who kept his machinery running in order to effect repairs if required or to charge batteries. The visitors were very much surprised to find Mr. Crowden so far advanced in the construction of some half-dozen cars, and were evidently astonished to find such well-equipped works at Leamington. We hope to illustrate some of the most recent of Mr. Crowden's productions in an early issue.

## SOME AMERICAN STEAM-DRIVEN MOTOR-VEHICLES.

By HORACE L. ARNOLD.

(Concluded from page 205.)

THE construction of Whitney's frame can be gathered from Figs. 18 and 19. Fig. 18 is a view of the front axle, which takes the form of a bow-string girder, carrying a tension rod below, and pivoted at the apex of the chevron-shaped top member to the front cross tube of the wagon frame, so as to swing freely in a vertical plane. To give fore and aft resistance, tubular braces are carried from each end of the front axle inward and upward, meeting in an eye which is pivoted to a second cross tube of the frame, in the same axial plane of rotation as the front axle, so that the front axle is perfectly free to vibrate vertically, and is at the same time abundantly braced in all directions. The pivoting of the front axle theoretically reduces the load lift due to road surface inequalities by one half, and is undoubtedly of the greatest value on rough roads.

The Whitney rear axle support is well shown in Fig. 19. It consists of a strong upper tube, bent downward at each end to form pedestals for the axle bearings, and provided on

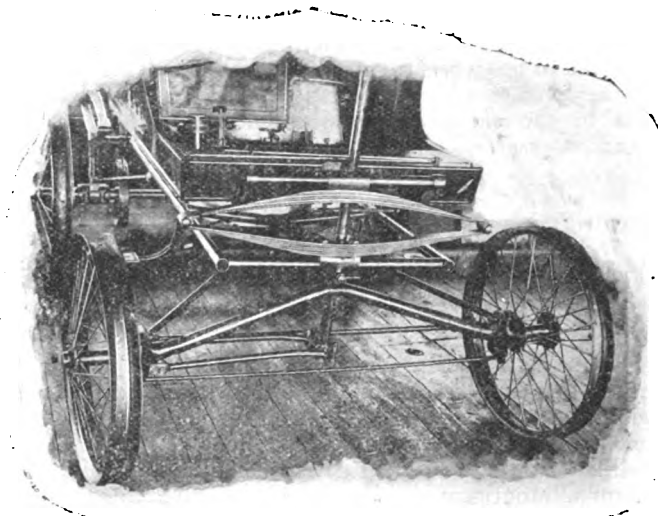


FIG. 18.—WHITNEY'S FRONT AXLE, SHOWING STEERING LINKS AND THEIR CONNECTION TO STEERING LEVER.

the outside of these bent parts with brackets which support the two full elliptic rear springs. The front end of the frame is carried on a single full elliptic spring, as clearly shown. Two hangers dropped down from the rear cross tube of the frame support the rear axle on each side of the compensating gear. The boiler and engine move to give the chain adjustment, which is by a screw strut, as shown in Fig. 19. The Whitney frame is an admirable piece of designing, perfectly adapted to roads of any description, and the Whitney car rides more easily over a bad pavement than any other motor-carriage within the writer's experience. The brake drum and band are shown at the right in Fig. 19, and the brake treadle is shown in Fig. 20. Fig. 20 also shows Whitney's dashboard, with a steam gauge and gasoline tank air-pressure gauge, an index figure and graduated quadrant for indicating the depth of water in the water tank, and a mirror at the upper front corner, which reflects the glass water gauge shown under the seat in Fig. 21, half the seat curtain being turned up, as when driving.

The Whitney steering lever (see Fig. 20) involves highly ingenious devices of the greatest value, as they place the whole control of the wagon in one single spade-handle grip. This is a matter of the first importance. In an emergency, perhaps with death staring a driver in the face, it is not the natural thing to let go of one handle and endeavour to grasp another, nor is it the quickest thing to do. First of all the

spade-handle form of the grip makes the driver's hold secure against accidental displacement. The horizontal bar of the lever slides forward to place the valve gear in forward action, and pulls backward to back the carriage, and a slight rotation of the grip opens or closes the throttle valve. At an intermediate longitudinal position of the horizontally sliding grip bar, it is locked against rotation, and a large bell carried close to the grip can be operated by the thumb to give



FIG. 19.—WHITNEY'S REAR AXLE, SHOWING CHAIN WHEEL AND BAND BRAKE.

warning signals. A ride of some hours' duration through the busy parts of Boston's crowded, crooked, narrow streets convinced the writer that in this universally acting single lever Whitney has produced one of the most valuable of all possible minor adjuncts to the successful use of the motor-car. Whitney can move his carriage a single half-inch forward or backward with perfect certainty. Meeting a wagon in Avery Street, which is not more than 6 ft. wide



FIG. 20.—WHITNEY STEERING LEVER AND PRESSURE GAUGES.

between curbs, Whitney instantly backed the carriage into a cross alley in a manner almost impossible to realize; and the Whitney car can probably be driven across Boston in half the time required by a horse-drawn carriage, because of the absolute perfection of control due to this universal steering lever. Whitney's best speed with this car is a mile in a little less than two minutes. He has driven from Boston to New York, 236 miles, inside of eighteen hours, and the writer believes the Whitney wagon could average 150 miles per day in a trip between Boston and San Francisco, with the roads as they are.

Fig. 22 shows Whitney's boiler, which is made with a projecting steam chamber in which the cylinders are placed as indicated. Whitney threads the tubes into the tube sheets

with a long tap, 50 p.i. double V-thread, which makes the same thread depth as if the pitch were 100 p.i. One end of the copper tubes is enlarged about 1.32 in. diameter, so that the small threaded end of the tube can pass through the

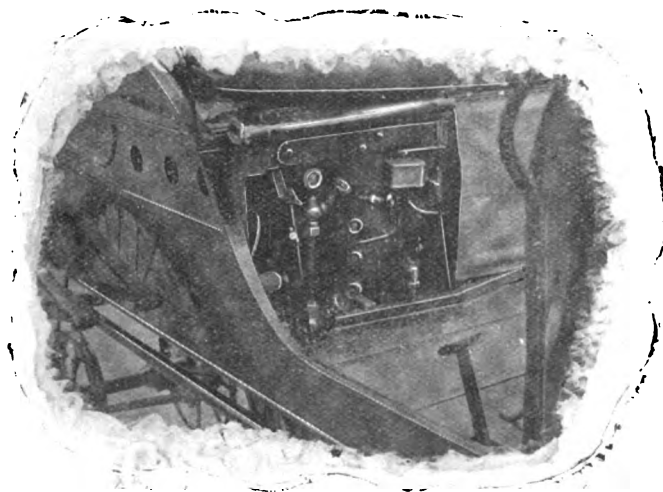


FIG. 21.—VIEW UNDER SEAT OF WHITNEY'S STEAM CARRIAGE, SHOWING GAUGE, GAUGE COCKS, ETC.

larger diameter tube sheet tapped holes without touching. After the tubes are screwed in place, these tube threads being straight not tapered, the tubes are expanded with a 3-roll expander, common form.

Taking these four steam cars together, they burn kerosene, not gasoline, make no noise, show no steam and emit no odour, do not frighten horses, do not require any blower or other forced draughts, and the driver has only one

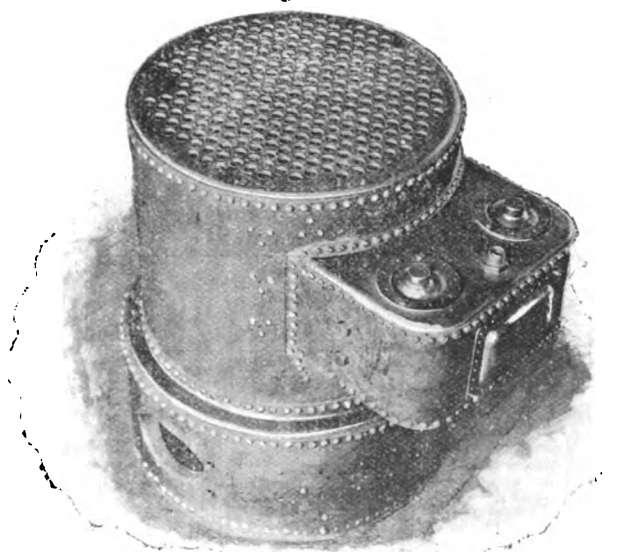


FIG. 22.—WHITNEY'S BOILER. 14 IN. DIAMETER AND CONTAINING ABOUT 300 COPPER TUBES  $\frac{1}{2}$  IN. DIAMETER, 13 IN. LONG; SHELL  $\frac{1}{8}$ -IN. THICK STEEL PLATE; TESTED TO 500 LB. HYDRAULIC PRESSURE.

hand engaged, with one foot ready for action on the brake, leaving one foot and his right hand free.

Taken singly, none of these carriages do all of these things, and it is not certain that the Stanley burner will burn kerosene with any degree of success.

But most unquestionably a steam motor-car, operating on less than one-third of a cent per mile for fuel, and weighing well under 450 lb. empty, under perfect control, absolutely safe, and capable of being sold at a handsome profit for 600 dols., is a long step in advance of anything in the way of mechanically-propelled vehicles of unlimited range previously shown. With such light weights the pneumatic tire is durable, and with such low fuel consumption, and such small first cost as Stanley proposes, the immediate use of a vast number of these vehicles seems certain.

# The New French Steam Motor-Lorry.

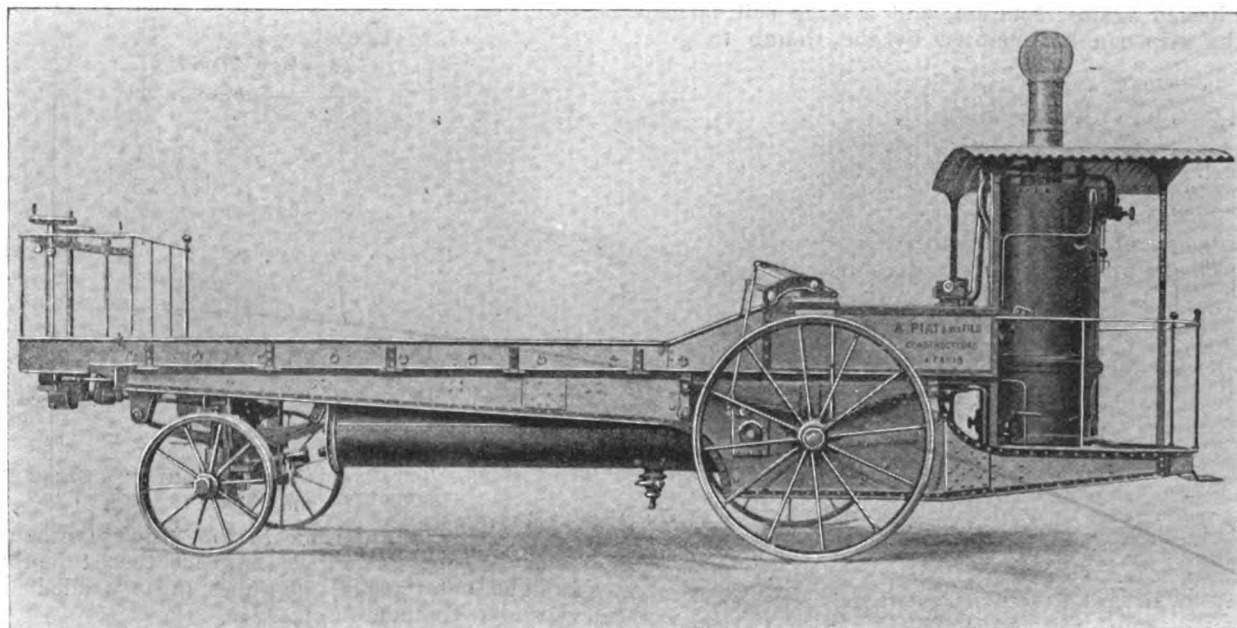


FIG. 1.—MESSRS. PIAT &amp; SONS' STEAM MOTOR-LORRY.

THE accompanying illustrations, Figs. 1, 2, and 3, show a new steam motor-lorry, which has been built by Messrs. Piat & Sons, engineers, Paris. The vehicle is of metal throughout. Its principal dimensions are: Length over all, 28 ft.; wheel base, 13.6 ft.; diameter of front wheels, 3.08 ft.; diameter of rear wheels, drivers, 5.28 ft.; gauge, 6.75 and 8.13 ft.; breadth of tires, 5.9 and 7.0 in. In this vehicle the boiler is located at the rear, the mechanism being in front of it. The total weight in working order is said to be 8 tons,

cent. in both cylinders. The distribution is effected by a single eccentric arranged on the Gooch system.

As will be seen from Fig. 3, the motor shaft is placed longitudinally, and is provided with two fly-wheels *VV*. It transmits motion through the bevel wheel *B* to the intermediate shaft *A* (Fig. 2). Upon this shaft is keyed a wheel *E*, which gears with another wheel carrying the differential *C*, mounted upon the driving shafts *DD*. To transmit the power to the rear road-wheels without using

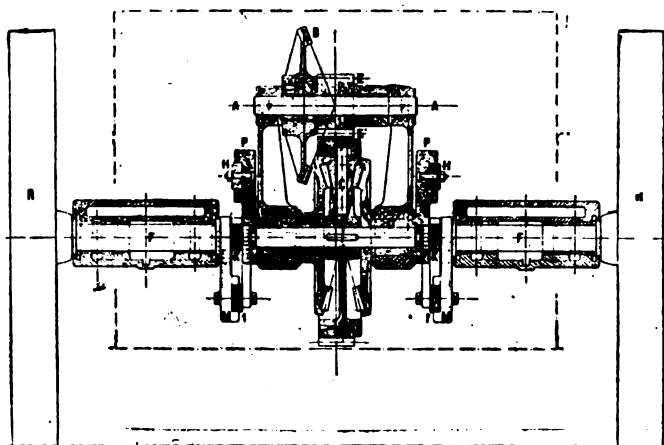


FIG. 2.—SECTION THROUGH REAR OR DIFFERENTIAL AXLE.

the usual load being between 5 and 6 tons; the speed on the level is  $6\frac{1}{4}$  miles per hour. The generator, which is arranged to work with either wood, coal, or coke as fuel, is of the vertical water-tube type, and carries steam at a working pressure of 142 lb. per square inch. There are no less than 117.8 sq. ft. of heating surface, the maximum evaporation being 1,507 lb. of steam per hour. The feed-water tank is carried under the platform, and it has a capacity of 28.6 gallons. The motor is a two-cylindrical one inclined at an angle of 45 degrees. The dimensions of the cylinders are: diameter, 6.299 in.; stroke, 5.9 in. Steam is cut off at 65 per

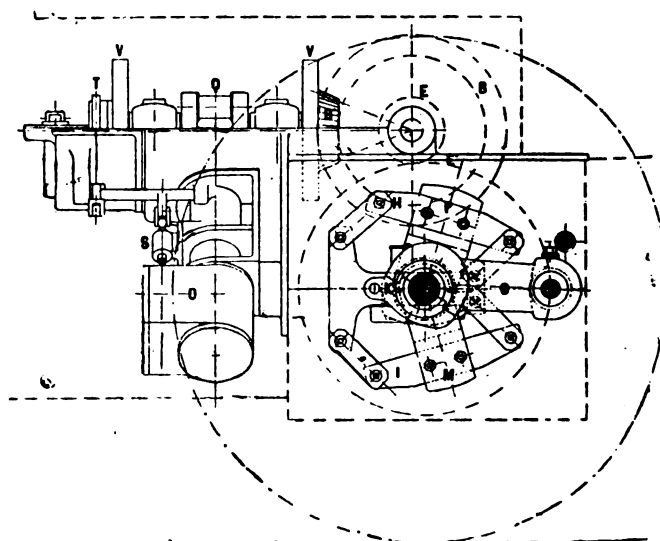


FIG. 3.—DIAGRAMMATIC VIEW OF ENGINE.

chain gear a special mechanism is employed. The road-wheels are of iron, and are keyed to their respective axles *FF*, which run in long axle boxes. Each axle box is attached by means of an arm to a hinged joint *G* (Fig. 3); between the inner ends of the shafts *FF* and the outer ends of the differential shafts *DD* is interposed an arrangement of links and discs *M* and *I* (Fig. 2), thus permitting a certain amount of vertical play to take up road vibrations due to inequalities in the roads.

## PETROLEUM MOTOR-VEHICLES.\*

By JAMES D. ROOTS, M.I.M.E.

(Continued from p. 206.)



About this period Messrs. Petter, of Yeovil, attacked the problem of petroleum road locomotion, and, like the author, endeavoured to use oil for the propulsion of their vehicle. They built a vehicle for the Crystal Palace *Engineer* competition, at which it was exhibited and ran fairly well. Figs. 27 and 28 illustrate this vehicle, except that Fig. 28 shows a balance gear upon the countershaft, and the vehicle at the Crystal Palace had no balance gear, and drove by one back wheel only. *A*, *B*, and *C* are pulleys upon the crank-shaft which drive the pulleys *A*<sub>1</sub>, *B*<sub>1</sub> and *C*<sub>1</sub> upon the countershaft *H*. *A*<sub>1</sub> is the high-speed pulley, *B*<sub>1</sub> the low-speed pulley, and *C*<sub>1</sub> the reversing pulley. *M* *M*<sub>1</sub> are the two cylinders of the motor. *N* *N*<sub>1</sub> are the crank pins. *G* is the balance gear, *J* *J*<sub>1</sub> the chain

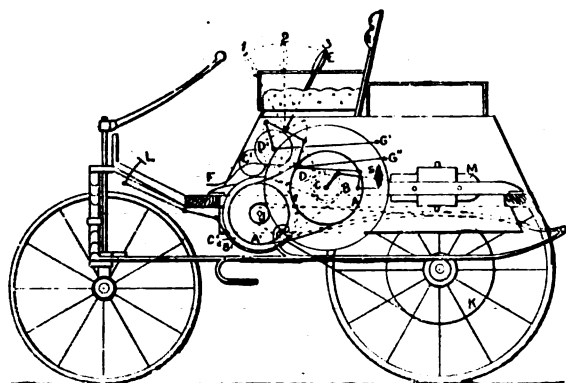


FIG. 27.

pinions driving the chain wheels *K* *K*<sub>1</sub>, which are fixed to the road driving wheels of the vehicle. The jockey pulleys *D* *D*<sub>1</sub> and *C*<sub>1</sub> tighten the straps upon the high speed, low speed, and reversing pulleys respectively. The jockey pulleys are operated by means of the lever *E*. *F* is the pedal to actuate the reversing pulley. *L* is the foot lever for the brake.

Fig. 29 shows the primitive method of vaporisation employed in the cylinder. *A* is the combustion space, *B* the oil cock, *D* the oil channel, *F* the air hole, *E* the inlet valve, *I* the ignition tube, *J* its casing, *M* the

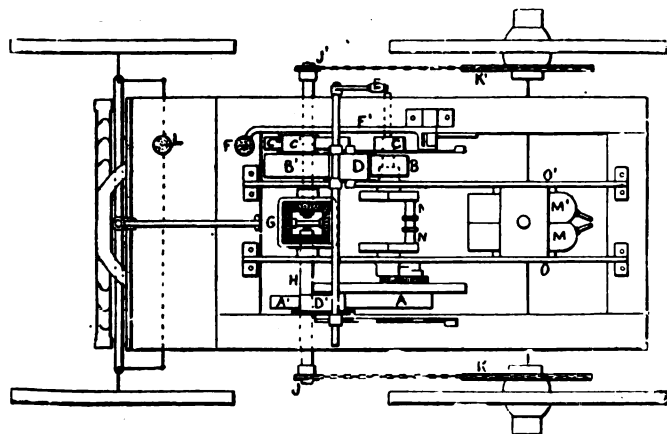


FIG. 28.

burner. The oil cock being turned on the oil is simply swept into the combustion space through the inlet valve by the air. It will be seen that no efficient system of vaporisation was adopted. The oil was swept into the hot cylinder cover, and until the cylinder and the surrounding parts had reached a high temperature it would not be possible to run without much smoke. The author is informed that Messrs. Petter have discontinued their attempts to produce a successful oil motor vehicle †

Fig. 40 shows a recent type of Benz motor-vehicle. Fig. 41 shows the motor in elevation and plan. It is of about 1½ brake horse-power at a speed of about 560 revolutions per minute. *C* is the jacketed cylinder having a steam condenser or receptacle fixed to the top of it. *N* is the crank shaft, *B* the connecting rod, *PP* the driving pulleys fixed to the crank shaft, *E* is the exhaust valve operated by the cam on the half-speed gear wheel. The cylinder end is open to the dust of the road, which cannot conduce to the durability of either the cylinder or piston. The charge is ignited by two cells and an induction coil. There are two ordinary

platinum points inside the combustion chamber. On comparing the Benz first car with the illustration of this car (Fig. 39) the lines of development and improvement will be seen. *A* is the motor, *B* the steam condensing cylinder, *C* the carburettor, *D* the crank shaft, *E* the petroleum spirit tank shown dotted, *FF* the water tanks, *G* the low-speed belt, *H* the high-speed belt, *I* the countershaft, *JJ* the driving chains, *KK* the back or driving wheels, *L* the exhaust box, *M* the steering lever, and *N* the throttle valve.

One of the first of a type of cars which was built by the author's firm in March, 1898, and which since that time has been in continuous use, has in all probability travelled about 7,000 miles without showing undue wear in any part to impair its efficiency or satisfactory working. In fact, only the rubber tires and the varnish on the body show perceptible wear. This

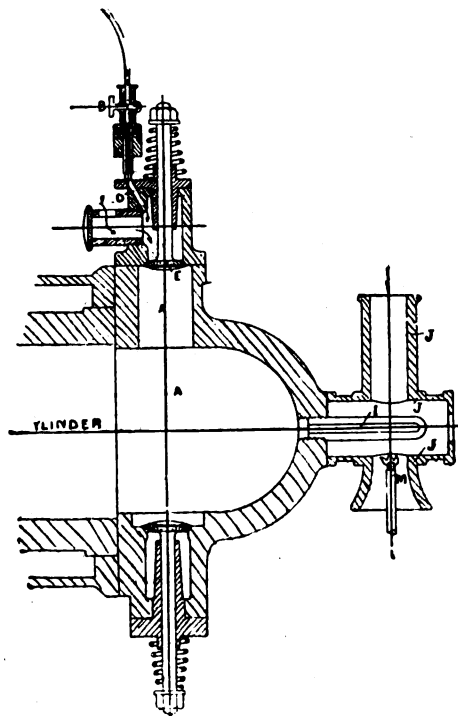


FIG. 29.

car was frequently tested for consumption of oil, which was found to be only six pints of oil (Tea Rose, for which 4½d. per gallon was paid) for every twenty miles. The running cost of this 3-h.p. car, therefore, works out at about 168 pence, or 14th of a penny per mile. The motor driving this car is the same as that shown on Messrs. Roots and Venables' four-seat car previously described, but with a few detail improvements, which have increased the power and eliminated the smell. From this 3-h.p. twin-cylinder motor, 4.2 brake horse-power at 600 revolutions is now obtained with a perfectly clean exhaust. The safety and freedom from explosion of the oil in comparison with the danger and continuous liability to fires in the use of petroleum spirit need not be expatiated upon, as it will be obvious to everyone.

(To be continued.)

## ALLEGED BREACH OF CONTRACT.



IN the Queen's Bench Division of the High Court, the Pneumatic Brake Company, Ltd., brought an action against the Australian Cycle and Motor Company, Ltd., on Wednesday, before Mr. Justice Darling and a common jury to recover damages for breach of a contract to accept deliveries of pneumatic cycle brakes.

Mr. C. A. Russell, Q.C., and Mr. Macleod appeared for the plaintiffs; and Mr. Dickens, Q.C., and Mr. Gore-Browne for the defendants.

On December 3rd, 1896, according to the plaintiffs' case, the defendants by a written agreement, in consideration of being the sole agents in Australasia for the sale of articles manufactured by the plaintiffs, undertook to purchase from the plaintiffs 5,000 pneumatic brakes a year for five years at prices agreed upon for the first year and to be fixed in each succeeding year for the rest of the period. Three hundred brakes were supplied under the agreement in February, 1897, and were paid for. The defendants were dissatisfied with the brakes supplied, complaining, among other things, that the rubber of which they were made was unable to withstand the heat of the Australian climate. A correspondence ensued, the effect of which was, according to the plaintiffs' contention, that the defendants repudiated the contract. The plaintiffs now sued for the loss of profit they would sustain by the defendants' breach of contract. The defendants' case was that the brakes supplied by the plaintiff were defective and unsaleable and unfit for use in Australia, which was known by the plaintiffs to be their

\* A paper read before the Society of Engineers, May 1st, 1899.

† The author next described the well-known Daimler, De Dion, and Bollée vehicles.—Ed. M.-C. J.

destination, being made of inferior rubber; but that they were always willing to accept delivery of saleable goods. They contended in the alternative that they were only liable to pay damages in respect of the first year, because no price had been fixed for the brakes to be delivered during the remaining years. They counter-claimed for damages for the plaintiffs' breach of contract in supplying unsaleable goods. The plaintiffs replied that their brakes were sold under a patent or trade name, and that there was, therefore, no implied warranty that they were saleable. They suggested that the real reason of the defendants' repudiation of the contract was that in 1897 a "slump" set in in the cycle trade and that they were, consequently, anxious to get rid of the liability to take the brakes. The following questions were put to the jury, to which the answers are appended:—(1) Were the 300 brakes supplied by the plaintiffs to the defendants of merchantable quality and reasonably fit for the purpose for which they were supplied (a) when they left this country? Answer.—Yes. (b) When they reached Australia? Answer.—No. (c) Were they ever fit for use in Australia? Answer.—No, through damage in transit. (2) Were the brakes supplied of the same make and quality as those supplied to the plaintiffs' customers generally? Answer.—Yes. (3) Were the brakes supplied made of inferior rubber? Answer.—No. (4) Did the defendants refuse to order more brakes and to finish the contract? Answer.—Yes. (5) If so, what damages were suffered by the plaintiffs (a) in respect of the first year? Answer.—£200. (b) In respect of the remaining years? Answer.—Nil. (6) Were the defendants ready and willing to order goods if reasonably satisfactory goods were supplied, which were reasonably fit for the purpose for which they were ordered? Answer.—No. (7) Were the defendants unable to sell the brakes supplied to them? Answer.—Yes, because they were damaged in transit. (8) If so, what damage did they suffer? Answer.—Nil. Upon these findings judgment was given for the plaintiffs for £200, and the counterclaim was dismissed.

#### UNIVERSAL MOTOR-CAR AND CYCLE COMPANY.

IN the Companies Winding-up Court last week, before Mr. Justice Wright, the petition of Mr. E. J. Morris for the winding-up of the Universal Motor-Car and Cycle Company came on for hearing. Mr. Wheeler, in support of the petition, said the Company had ceased to carry on business. It was formed in June, 1896, with a capital of £200,000, of which £102,000 had been paid up. Mr. Cozens-Hardy, for the Company, said they were carrying on business and had assets. Mr. Wheeler said the Company was originally called the British Motor-Carriage Company, but it had been restrained by injunction from using that name. The petition stated that the whole of the Company's capital had gone, and that there were no assets. Its business had been suspended for more than a year, and for more than six months before there had been no meeting of directors. The petitioner was the owner of fifty fully-paid shares. There was a sum of £16,000 due for calls, and there was also a probability of something being recovered from the directors. The petition, counsel added, was supported by another holder of fifty fully-paid shares. His Lordship enquired what benefit the petitioner would get from an order. Mr. Wheeler replied that the petitioner wanted enquiry into the conduct of the Company's business. The directors had taken £2,000 in fees. Mr. Cozens-Hardy: All of which has been returned. Mr. Cozens-Hardy stated that the affidavit of the accountant (Mr. Perrin) showed that meetings had not been held because the Company were not in a position to know the value of their assets. It was untrue to say that the Company had none, for negotiations were in progress to realize valuable assets, consisting of several patents. The business had not been carried on because of pending litigation. Nor was it true that no meeting of directors had been held for six months, two having been held in March last. He submitted that it would be against the interest of the Company's shareholders to wind-up the Company. Mr. Wheeler said the Company was formed to acquire and work patents for motor-carriages, cycles, flying machines, etc. Certain of the patents were valueless. His Lordship said, as between the petitioners and the Company, it was difficult to say which had the weaker case, but the balance appeared in favour of the Company. In the circumstances, he did not think the holder of fifty shares should say to the Court that the venture was a bad one, and there was great reason to doubt whether he would get anything by a winding-up order. He should dismiss the petition, but without costs.

#### Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797.

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FOR SALE.—Electric Victoria, quite new, made by Thrupp and Maberly of London, the motor by Immish & Co.; in first-class condition. Price £200. For further particulars and order to view apply to C. A. Goffin, Minehead, Ouseley Road, Balham, S.W.

FOR SALE.—Mytholm Motor-Car, double cylinder, 3-h.p. petrol motor, three speeds, ball bearings, rubber tires, £110. Photo, three stamps. Also 8-h.p. two-cylinder Mytholm Petrol Motor, complete with tube ignition and carburettor, £55. 3-h.p. two-cylinder Mytholm Petrol Motor, £32.—Brown & Buckton, Hipperholme, Halifax.

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MOTOR-CARRIAGES, deliverable directly, system Panhard, Benz, Peugeot, Mors, Decauville, Cambier, Rochet, Silmeider; tricycles.—Apply to Géo. de la Nézière, 51 rue Vivienne, Paris.

WANTED.—Situation as Driver and Repairer of Motors. Seven years' experience in making, driving, and repairing explosion engines and cycles.—E.W. Dewbury, High Street, Ware.

#### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.

### The Club Trials.

THE Automobile Club's tests are now a thing of the past, and full particulars of the proceedings will be found in other columns. The weather during the trials has been lovely, and all round the events have been most enjoyable; but it seems astonishing the lack of public interest taken in the proceedings, and also the absence of interest by the members of the Club themselves. At no time, apart from the competitors, has there been above a dozen members present. The success of the trials has been in a great measure due to the keen interest taken by Sir David Salomons, and also the energy of the assistant secretary, Mr. Joy. Mr. Beaumont and Mr. Shrapnall Smith have also busied themselves, and been present daily, doing judges' work, in testing the consumption of petrol, water, steam, etc. Regarding the trials, Petersham Hill, near London, was certainly a convenient spot upon which to have trials, but better hills where greater tests could have been made are to be found elsewhere not very far from London. We fear the tests will not prove much, any more than will the fifty-mile trials. It seems to us absolutely ridiculous that the cars should be limited to the five minutes a mile average. We absolutely saw cars dead-stationary, stopped for the purpose of filling up time. The car we were on—an 8-h.p. Benz—went through without stopping, but it travelled on the Crypto gear a good deal, and we were afraid some of our miles were as fast as 4 m. 40 s. There was one car on the journey we were very anxious to see do the fifty miles under test, but it was impossible under the circumstances for us to get any satisfaction. The Lanchester car, of which were expected great things, inasmuch as it carries no water, we had wished it could have ridden the fifty miles non-stoppage. But the observer, an engineer, Mr. S. Terry, carried out to the letter his instructions, and practically stopped the car at every milestone. The heavy trials were very satisfactory, and the success of every vehicle participating in the event was most gratifying. But here, again, the law stood in the way, and more than one vehicle had to be stopped to prevent it exceeding the legal limit of time. The trials themselves, we consider, will not prove anything, and the lack of interest taken by the public and the press will not have enabled the Automobile Club to have done much good, although of course the Club's intentions were of the best. The members themselves during the trials, as previously stated, were conspicuous by their absence, and considering the circumstances under which the trials have been held it does not augur well for the future of other events which may be promoted by the Club.

### Light Motor-Carriages in America.

Just as in this country, builders of motor-vehicles in America are beginning to devote attention to the production of a light two-seated motor-carriage capable of being sold at what may be termed a popular price. In its recent issue, our New York contemporary, the *Horseless Age*, describes

a new car of this type which has lately been introduced by Mr. W. T. McCullough, of the Back Bay Cycle Co., of Boston, Mass. The general appearance of the vehicle differs considerably from those in use in this country, the body of the car being not only mounted higher than we are accustomed to on this side, but is of an exceedingly light character. The motive power is supplied by a two-cylinder horizontal petroleum-spirit motor of about  $4\frac{1}{2}$  h.p. The motor, which weighs about 100 lb., is located in the front portion of the frame. Radial discs are fitted to the cylinders for cooling purposes, while ignition is electrical. The two cylinders are arranged to work independently of each other, so that when desired one of them may be entirely thrown out of gear. As regards the transmission mechanism, only one forward mechanical speed is provided, intermediary speeds being obtained by the variation of the explosive mixture and the electrical ignition. From the motor shaft to the intermediary shaft, the power is transmitted by means of a chain working on sprocket wheels, while from the intermediary two light driving chains, fixed not at the ends but centrally, transmit the power to the rear road wheel axle. A small friction clutch is arranged to work in conjunction with the sprocket wheel on the motor shaft so that the motor can be entirely disconnected from the transmission gear. Steering is effected by means of a long bar, the vertical standard, instead of passing through the floor of the car as is usual, being fixed just in front of the splashboard directly over the front axle. The frame of the vehicle is constructed of cast steel, and the body suspended thereon by strong springs. The four road wheels are all 32 in. diameter; they are of the cycle type, fitted with pneumatic tires. It is claimed that a speed of twenty-five miles per hour can be obtained by the car, which weighs complete just under 5 cwt.

### Motor-Car Racing.

PENDING the formation of a properly constituted and representative control body of racing motorists the committee of the Motor-Car Club, we are informed, are prepared to investigate claims to record and to certify as to their correctness. All claims, together with timekeepers' certificates, should be sent to the hon. secretary of the Motor Car Club, 40 Holborn Viaduct. The first official timekeepers appointed are Mr. F. T. Bidlake and Mr. F. W. Baily.

### Five Minutes a Mile.

THE Hon. S. C. Rolls' 8-h.p. Panhard has been called a fire engine, a "hippopotami," and other wicked names, but as a fire engine it will no longer be known. Mr. Rolls has gone in for something sweet—chocolate, in fact—and in future the car's progress will not gain notoriety from the brilliancy of its colour—or its speed, we should imagine, judging from the delicious look of calm contentment on the owner's face during the five-minutes-a-mile contest on the Oxford Road. It was almost worth the misery of the "cripto gear" speed to enjoy the sight.

### A Motor-Car Paper Chase.

ON Saturday last the Motor-Car Club held an inaugural and most successful paper chase. The journey was started near Coulsdon on the main Brighton road, and was continued through some miles of devious lanes over Banstead Heath, and after many twists and turns finished up at a point on the Brighton road. The course was an exceedingly difficult one, and some tremendous hills had to be negotiated; consequently, speed was out of the question. The hon. sec., Mr. F. W. Baily, arrived home first on a De Dion tricycle, with Mr. Miles second on a Benz car. The fast tricycles, ridden by such flyers as Messrs. Jarrott and Wridgway, overran the trail several times, and arrived in—well, at the tail end. It was very amusing at a spot near Banstead Heath, where a false trail led down a steep hill, to see a number of members flying down and having to wearily push their machines up again, as the hill was too steep to ride. The last man eventually turned up some three hours after the winner, and everyone had experiences to recount of the difficulties of the course. A number of the members afterwards dined at Reigate in the evening, and proceeded on the Sunday through Dorking on to Shire for luncheon, from thence on to Ripley, and so back to town, terminating an exceedingly enjoyable outing. It is intended to hold another paper chase very shortly, and any motorists wishing to take part are requested to communicate with Mr. F. W. Baily, hon. sec., Motor-Car Club.

### FURIOUS DRIVING AND A SPILL ON THE STAFFORD ROAD.

At the County Petty Sessions, Wolverhampton, on Monday last, before Messrs. Dickinson and J. Marston, Joseph Lisle, a young gentleman, and son of Mr. Edward Lisle, of Mosely Hall, Wolverhampton, was summoned for driving a light locomotive on the Stafford Road at a faster rate than twelve miles per hour. Mr. T. P. Haslam (Messrs. G. R. Thorne and Haslam) defended.

Police-Constable Poulson said that on Sunday, May 28th, he was in the garden at his station when he saw the defendant driving a motor-car along the Stafford Road towards Wolverhampton. The defendant and his father were in the car, which was being driven between sixteen and twenty miles an hour. Witness subsequently saw the father and son at Mosely Hall, and in the course of a conversation the remark was made, "We were going above the average rate."

Thomas Webberley, butcher, Chapel Ash, said that on May 28th he was driving a mare attached to a trap along the Stafford Road, and after getting past the "Ball Inn" at Coven he saw a motor-car coming towards him at a rate of about twenty miles an hour. Witness's horse became restive, and he put up his hand before the car reached him. The motor-car was being driven along the middle of the road, and Mr. Lisle and his son were in it. Witness pulled his horse up almost to a standstill, but the defendant did not slacken the pace, and the horse turned the trap over. Witness was thrown out, and his daughter was thrown into a ditch. The trap was damaged and the horse's legs cut. He had instructed his solicitor to write for damages.

John Griffiths, of 306 Prestwood Road, Heath Town, who was cycling on the Stafford Road on the occasion, said the motor-car was driven about sixteen miles an hour. Witness rode from ten to twelve miles an hour, and the car left him. The motor-car did not collide with Mr. Webberley's trap, but must have frightened the horse when it passed close to it.

Harry Brown Birch, of 391 Prestwood Road, Heath Town, another cyclist, said the motor-car was being driven at sixteen miles an hour.

Mr. Haslam said it appeared that another claim was going to be made against them in another court. The motor-car was going, perhaps, at a faster rate than ten miles an hour, and Mr. Webberley was trying to urge his horse past and never gave a signal to those in the motor-car. Afterwards Mr. Lisle saw that an accident had happened, and he stopped and got out of the car, but thinking that the car might frighten the horse again he did not go back.

Mr. Edward Lisle, called as a witness, said that the pace of the motor-car fluctuated. They had gone up to a canal bridge, and on descending the other side the pace increased. If a signal had been given they would have pulled the car up at once.

Mr. Dickinson said that the magistrates believed the car was being driven at more than twelve miles an hour, and defendant would be fined 40s. and costs.

Mr. Marston said they did not wish to discourage the motor-car industry in Wolverhampton; they were glad to see it; and hoped it would remain, but motor-car drivers must obey the law.

### NOTES FROM THE MIDLANDS.

By "VERAX."



#### An Impostor.

"THE world was ever thus," and at last we have to encounter the professional beggar as an "inventor" of a system whereby motor-cars can be propelled at thirty miles an hour without "oil, steam, smoke, smell, heat, stink, or noise." This gentleman has, of course, a shabby appearance but a highly persuasive manner about him, and produces (inventor fashion) a roll of drawings from his pocket; they are very roughly drawn, of course. The drawing presented to me represented a sort of Pelten wheel with sliding weights, etc.; in fact, a sort of perpetual motion device, with a large weight shown at the end of a long lever, which acted on the brake drum. This powerful brake was absolutely necessary to stop the motor, owing to its great power. In fact, I was told that a car had been fitted with such a motor, and was travelling at thirty miles an hour along the Brighton road when the unfortunate accident took place, for want of brake power, that had cost the persuasive gentleman three ribs, and shock to nervous system, etc. After this has been explained at full speed, an opportunity arises for the victim to explain that this all sounds very nice, but of course is absolutely useless in practice, and so on; and then the persuasive gentleman becomes sorry that you are unable to grasp the utility of his invention, and hopes you will not be unwise enough to let slide the grand opportunity you have of becoming one of the syndicate, which, of course, is to be formed of the most influential gentlemen in the motor-car world, who have notified their intention, etc., of securing the patents for every country. It is at the end of this explanation that the persuasive one comes to the real object of his visit, which is to inform you that he is very sorry but having come all the way from some important town not far away especially to see you, and on the instigation of some large firm really interested in motors, he has unfortunately run short of petty cash, and would be so much obliged if you would lend him five shillings just to pay his fare back, and so on. Of course, the money will come back to-morrow, when he purposes to bring his powerful models for your inspection. Needless to say, this is simply a begging scheme, as in my case I had the opportunity to prove it, and advised the persuasive one to leave the town at once. I hope readers will be on the look-out for this gentleman, who is a little old man, with his subject at his fingers' ends. I presume he has an enormous number of names, and the various towns he is so very anxious to return to would in the course of a day's work be numbered by hundreds. His motor is, of course, "applicable" to everything, from chaff-cutting to record Atlantic passages; so he has would-be victims in every walk of life. The best way to deal with him is to afford him the opportunity of describing his invention before a magistrate, which would give him the notoriety and subsequent retirement from business which he deserves.

#### Motor Exodus from Coventry.

ON Thursday last some cars of Coventry production went up for trial and exhibition at the shows in London, and thirteen or fourteen cars started away for London via Dunchurch. The "procession" was, to say the least of it, a very imposing one at the start, and various types fitted with Daimler motors were represented. The huge Post Office vans went along very gaily and looked fairly smart in appearance, though, of course, very heavy. There was also the light Daimler carriage for two people. Coming along in the distance this carriage does not strike one as being so small as it really is, presumably caused by the massive appearance of the motor bonnet in front. However, this car with its 3-h.p. double cylinder motor is capable of a very good speed, and is a good hill-climber, and will no doubt cause much

attraction at the show. The Daimler ordinary type of car still seems too heavy altogether, and surely could easily carry a 6-h.p. motor instead of the 4-h.p. usually fitted.

#### Motor-Car Experiments.

COVENTRY manufacturers are very busy and keen on the development of the smaller motor-car, and at present do not care for others to know exactly what they are doing, as naturally they do not want to give their ideas away.

For this very reason several really good little cars will probably not find their way to the shows this year, and will not be allowed out of sight until they are absolutely out of the experimental stage. This is as it should be, as it is evident that many firms have been too premature in selling or offering for sale their cars before they were really in a reliable state for selling, and, of course, this sort of thing is bad for the industry at large. However, steady progress is being made, and on the quiet Warwickshire lanes are to be seen all sorts of cars, in all conditions of finish, being tried and perfected for the market. It is by no means an easy matter to make a satisfactory motor-car, as many firms have found out; and as faults, which render a whole frame or engine absolutely useless, only become evident on the road and not in the drawing office, it stands to reason that a great amount of money is being sunk, which, I am afraid, some firms will never see back again. On Friday last Mr. C. G. Wridgway was in Coventry, and it will be interesting to note that Messrs. Pennington & Baines have secured his services for five or seven years in their Continental branch. In the course of conversation we understood that Mr. Wridgway was leaving for Paris, to take up his duties there, and that he had already disposed of seventeen motors. Nothing has been seen in the Midlands of the new Pennington motor, but perhaps it will come, all in good time. I understand Mr. Wridgway returns to England shortly to engage in another competition at, presumably, the Crystal Palace, where he has already competed with success.

#### Motors and Prejudice.

THE Automobile Club's visit to the Midlands was of course an event of importance to all interested in the development of motor traffic, but it did not succeed in removing all the prejudice which exists, and in some cases

only increased it. One gentleman, who is well known in Leamington, informed me that the air was so thick with smoke and obnoxious fumes as the cars left the Regent Hotel yard, that every resident had to clear out; in fact, the place was untenable during the three days' stay of the Club! Had he anything to do with the Legislature he would prevent such intolerable nuisances, etc. Happily, these gentry are now very few and far between, but their opinion is still looked for and carries a certain amount of weight, as this sort of rubbish is talked in certain local Council meetings, and over the everlasting cup of tea with Mrs. Grundy. Of course, the reverse was really the case, as the streets were lined with an admiring crowd, some of whom had come a considerable distance to see the cars, and throughout Warwickshire the greatest disappointment was evinced by people who had just turned up too late to see the "procession," as they thought it was intended to be. Warwickshire is, of course, a very horsey county, most of our highways having horse tracks as well as footpaths, which is quite a feature of the county. One old farmer said he was quite unable to see the use of these mechanics' carriages, as he called them, which took you along so fast that it was quite impossible to look at the country, which he apparently considered was the sole reason why the roads were made at all. A great many people object to motors on account of the dust they create. People naturally ask: "Why should a motor make more dust than an ordinary carriage when there are no horses to kick up the dust?" One reason, and the

most important one, is that as a rule the exhaust outlet is placed in such a position and so near the ground that every discharge strikes the ground with considerable force, therefore raising up a little cloud of dust with every explosion. This, of course, can be modified either by putting a plate or other contrivance to prevent the exhaust gases from striking the ground; and it would be found that this would greatly increase comfort not only to the occupants of one's own car but to the unfortunate people one passes in tow of the slower but more certain (?) animal, the horse. With pneumatic tires it is impossible to prevent the raising of dust, owing to their resiliency. A good instance of this may be seen in the case of a steel-tired and a pneumatic-tired brougham both travelling along the same road at the same pace; one would scarcely believe the difference in the amount of dust raised unless one saw the same personally. It is this class of annoyance, trifling as it may seem to the motorist, which does so much in maintaining the prejudice which exists against the motor, and which every motor driver is called upon personally to try to reduce by showing due consideration to the comfort of others.

#### A Doctor on Motoring.

THE ancient town of Stratford-on-Avon at last boasts of a privately owned motor-carriage, supplied to a leading doctor by Messrs. Hewetson's district agent. The car is a three-speed Benz "Ideal." The doctor is very

much enamoured of his car, and, in the course of conversation, told me that he found much more enjoyment and much less fatigue in doing his daily country rounds than he used to experience with his horses and dog-cart. "I can," he says, "lean back comfortably in my seat and become quite rested. I can get over the ground and up all the hills—and there are some very stiff hills around Stratford—in half the time that a horse would take to do the same distance, and I feel at all times that I have no tired horse to consider, and that the machine is equal to any demand I may make upon it." There are one or two doctors in Warwickshire using cars, and they are all of much the same opinion and admit that they are reducing their expenses considerably by using motors. The gentleman above mentioned is a very well-known sportsman and a keen horseman, but for his work prefers a motor, so that he can reserve his horses solely for sporting purposes.

#### A Motor Launch.

WHILE mentioning Stratford-on-Avon it may be interesting to note that there is an original German Daimler launch running on the river. The engine is at least ten years old, and is of the old V type, which was

the original type used for carriages. There is the same type of starting and reversing gear, by means of a clutch, and bevel face wheels, which is now fitted in launches by the English Daimler Co. Although the boat has seen considerable service, on the Norfolk Broads amongst other places, she is still doing her work admirably, and can easily overhaul the various steam launches which are to be seen on the river. I had a trip on this launch last week, and was very pleased with the working of the engine, which as I said has stood her ten seasons' wear admirably. It must be remembered, of course, that the engine in a launch is not subject to the same strains as are set up on a car by the unevenness of a road, all of which, of course, is in the engine's favour. The launch is kept at the Swan's Nest Hotel, where, although not stocked for sale, the ever obliging manager, Mr. Rose, will supply auto-carists with petrol.

"VERAX."

On Saturday afternoon a man named Stainer, residing in Newsham Square, Sunderland, was knocked down by a motor-car at the corner of High Street and Bridge Street. His knee was injured.

## THE ESTABLISHING OF RURAL AND OTHER MOTOR-VEHICLE SERVICES.—II.

**B**ESIDES all these reasons there exists another and perhaps more important one. The leading feature of a motor-vehicle service should be its ability to carry out a specified duty within reasonable times—in fact, in such times that horse-drawn vehicles are unable to accomplish. If a vehicle is selected whose weight, unladen, is over two tons the law imposes such restrictions as to its speed, width of tire and other details that the vehicle is unable to carry out its duties in the same rapid and prompt manner that a lighter and more moderate-sized vehicle would be capable of doing. The aim in establishing motor-vehicle services should be to employ such vehicles as are just within the almost prohibitive restrictions of the law, and that are, at the same time, capable of carrying a paying load.

Having decided upon the type of vehicle, its seating capacity, etc., the next step is to secure the delivery of such vehicles from the manufacturers. Unfortunately, projectors of motor-vehicle services, as well as the members of the general public, are much too prone to think that motor-vehicles when ordered can be delivered at once, or that vehicles of the type selected can be had *on hire* from manufacturers. In regard to this latter, it may at once be remarked that manufacturers are, at the present time, so overflowing with orders for purchased vehicles that they can afford to give no time to the consideration of constructing vehicles for hiring out either for public service or to private users. Moreover, they cannot afford to sacrifice their capital in manufacturing cars which are, after all, solely to be used in financing the promoters of motor-vehicle services. If they could afford to do this they could afford to run these public services themselves and to take the profits accruing therefrom. A motor-vehicle service, if properly projected and managed, is a profitable undertaking, but manufacturers have sunk such vast sums in equipping their works and in carrying out experiments that they are unable, in the majority of cases, to undertake the additional capital liabilities arising from the establishing of such services. The undertaking being profitable, it follows that such a scheme must be provided with sufficient capital to enable it to be worked with credit and profit to the owners and convenience to the public, and this is best provided either by large independent companies or, preferably, by small local concerns having the confidence of that section of the public for whom the projectors desire to cater.

To secure delivery of vehicles from the manufacturers, therefore, the promoters of a public motor-vehicle service must have sufficient capital to firmly order the type or types of cars selected. The position must be such that they can obtain the best discount by reason of their paying cash, and can further bind the manufacturer down to a reasonable time for delivery by their ability to hold out a threat of taking their orders elsewhere unless they are well treated in this respect.

So soon as the vehicles are ordered, if not before this time, the promoters must secure suitable buildings for the housing, washing, and overhauling of the vehicles. Unfortunately, in some respects, motor-vehicles are such willing servants that the necessity of taking care of them is frequently overlooked. Indeed, this overtrust in motor-vehicles is one of the curses of the present expansion of their use. A motor-vehicle doing twice or three times the work of a horse-drawn carriage requires at least twice the amount of care and attention. To keep it "spick and span" it is necessary that on its return from a journey it should be thoroughly well cleaned so far as the body, wheels, and frame are concerned, and carefully sponged and rubbed dry with leather. So far as the mechanical parts of the car are concerned, these require even greater care. We have known instances of owners running vehicles for 4,000 miles and never even thinking of putting grease upon the chains. Such treatment as this will certainly not answer. The chains must be

examined each day, carefully cleaned and re-lubricated, their tension adjusted (if need be), the sprockets freed from all encumbrances, and care taken that everything is in good order. Gear boxes should be opened at least once a week, the gearing examined, and, if necessary, adjusted and tightened; whilst the box should be filled up again with grease and carefully closed for fresh work. The clutch and its shaft should be carefully examined and overhauled, whilst the jet, burners, carburettors, and lubricators should all receive careful overlooking every week. Each day the lubricating devices should be filled and tested, and (an even more important point) examination should be made to secure that the circulating pumps are working efficiently and are throwing the requisite amount of cooling water.

In regard to the speed gears, these, together with the differential gear, should receive the utmost attention possible. We have seen cars that have run for several thousands of miles, in which the speed gears are practically unworn; and we have seen other cars, equally well-made in every respect, in which the speed gears have been worn almost to a knife-edge after a run of 200 miles. This wear is principally due to faulty driving; some drivers will get the gear into position quietly, quickly, without strain, jar, or grinding, whilst others are so clumsy that they can never engage a pair of gear-wheels without setting one's teeth on edge in the operation, owing to the terrific grinding action set up. As a result some drivers can show the gear-wheels of their vehicles almost as perfect as when turned out from the factory, whilst others practically grind a set of gears away in a week. It will be seen from this, then, that not only is it necessary to pay careful attention to the gear, on which depends the quiet and safe running of the car, but that it is also necessary to employ properly qualified and skilful men to handle the cars on the road. If owners of cars would only recognise that a careless or incompetent driver can do twenty pounds' worth of damage to a car's gear in almost as few minutes, they would be much more careful as to the selection of those whom they entrust with the manipulation of their cars on the road.

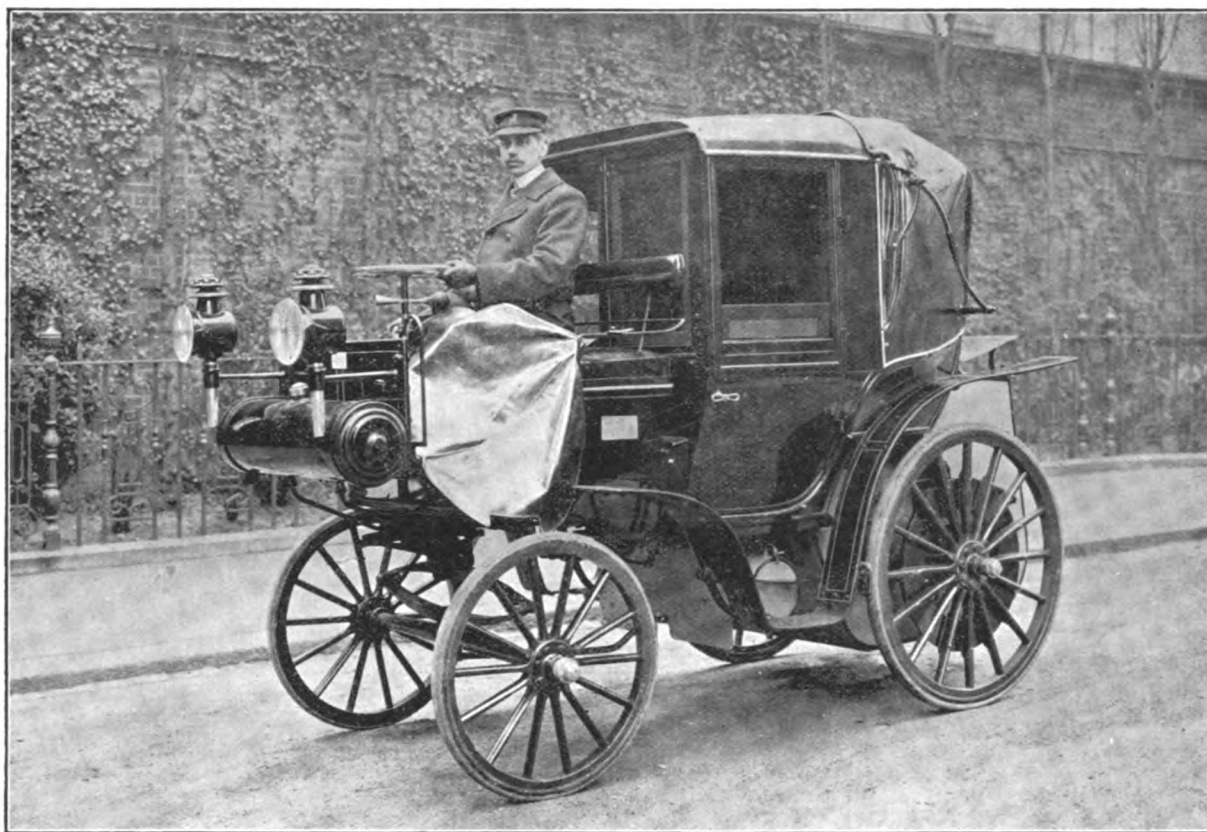
It follows, if careful inspection and efficient controlling of the driver's treatment of the cars are to be secured, that capable and properly trained men must be employed to inspect and overhaul the vehicles. This also necessitates the provision of a properly equipped, though not necessarily extensively fitted, repair shop being provided. Spare parts should always be in stock, in order that replacements of faulty parts can be made at once without laying up the vehicle, and if frequent inspection be resorted to it will be found that the expense incurred by some of these replacements is fully compensated by the vehicle's ability to run on the road over longer periods without "docking" than would otherwise be the case.

These remarks are equally applicable in regard to brakes and steering gear. The links and levers of the latter will need frequent inspection, more especially in the case where the wear and strain is on connecting pins rather than on the levers or links themselves. Brakes are so essential to the safety of the car and its passengers that every possible examination and every necessary replacement should take place at frequent intervals. In fact, if the service is to be profitable the "stitch in time" policy must prevail; no carelessness must be permitted in regard to details, and inspection must be frequent and thorough.

There are proper and improper ways of doing such simple things as putting the burners of lamps out. If the proper way is followed the wicks will last twice as long, the lamps will burn better and with more regular heat, and consequently the engine itself will deliver a given power more regularly and consistently owing to the better heating of the ignition tubes. Promoters of motor-vehicle services would do well to pay attention to these by no means complete hints. They will find that the slight expenditure incurred in going over, tightening up, examination, and, if necessary, replacement, will be fully repaid by the longer life of the car and its greater reliability and freedom from mishap.

(To be continued.)

## Motor-Vehicles on Hire.



MOTOR COUPÉ CO.'S CLOSED CAR.—(See p. 230.)



MOTOR COUPÉ CO.'S OPEN CAR.—(See p. 230.)



## MOTOR-CARS ON HIRE.

ON the preceding page we illustrate two of the handsome vehicles which the Motor Coupé Company are now letting out on hire for private use in town or country for short or long periods. The cars are of the Daimler (Canstatt) type; the engine (4 h.p. nominal) being placed at the rear of the carriage, and motion communicated to the rear road wheels by means of internal gearing wheel and pinion. They are certainly the most luxuriously fitted vehicle yet let on hire, and the Company should have no difficulty in readily placing every vehicle in active work. They are capable of travelling very long distances, being provided with ample water supply and also *refroidisseurs*.

It is a leading feature of the Company's operations that those attending balls and theatres, etc., will be specially catered for. The tariff is a low one, and it is only fair to state that thoroughly competent drivers are employed. The charges quoted, for reference for others letting motor-vehicles, we reproduce:—First two hours 10s., each hour after 4s. 6d.; dinner or theatre (single), 7s. 6d.; to and from theatre, 15s.; balls or receptions or opera, £1; one day not exceeding nine hours, £2 2s.; one week of six days (hired to pay for all oil used), £7 7s.; Saturday afternoon to Monday morning, £4 4s.

## THE GROUVELLE-ARQUEMBOURG WATER-COOLING TUBES.

A WATER-COOLING device or condenser which is now being very largely used by builders of petroleum spirit motor-carriages in France is that made by Messrs. Grouvelle & Arquembourg, Ingénieurs-Construc-teurs, of 71 Rue du Moulin-Vert, Paris (XIV. Arron-

can be either of iron or aluminium, as desired (the latter affording the advantages of lightness, and the feature that mud does not adhere to them), measure 40 mm. by 40 mm. in the smaller size and 50 mm. by 50 mm. in the large size. The weight of the serpentine is: small size, with iron radiating plates, 2.8 lb. per metre; ditto with aluminium plates, 1 lb. 14 oz.; large size, with iron plates, 4 lb.; ditto with aluminium plates, 2 lb. 11 oz. The makers claim that by means of their water-cooling apparatus it is possible for a petroleum motor-car to be driven a distance of 200 kilometres at an average speed of 20 kilometres (12½ miles) per hour without it being necessary to take in a fresh supply of cooling water.

DR. VON STERN, the representative of the Austrian Touring Club at the International Cycling Congress last week, is stated to have travelled the whole of the way, with the exception of the crossing of the Channel, from Vienna to London in a motor-car.

AT Leamington recently Josiah W. Thompson, of the Star Motor Works, Wolverhampton, was ordered to pay 30s. to William James Allen, coach-builder, 1 Regent Grove, Leamington, for quitting his service without notice. Complainant said he was entitled to a week's notice. Defendant, on the other hand, said he was engaged by the hour, and that an hour's notice was the custom of the trade.

MESSRS. H. A. CLARKE & Co., of 31 Rutland Street, Leicester, inform us that they are now stocking Pratt's motor spirit, and that, being the engineers to the Leicester Motor-Car Co., Ltd., they are in a position to execute any repairs required by tourists passing through Leicester. Messrs. Clarke & Co. are also sole agents in Leicester and district for the Daimler Motor Co., Ltd., and keep a number of necessary parts in stock.

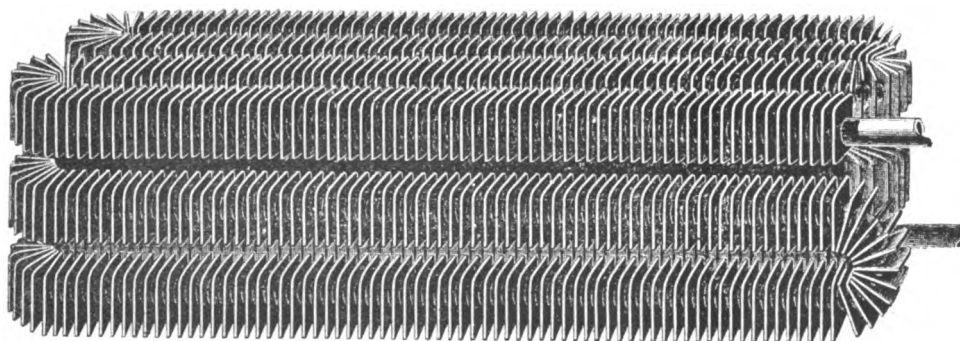


FIG. 1.

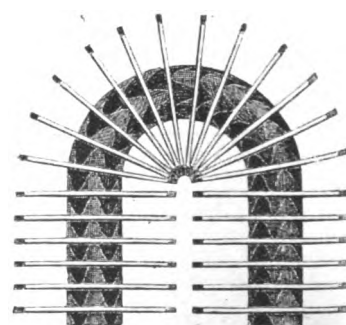


FIG. 2.

dissement), and of which illustrations, Figs. 1 and 2, are given herewith. It consists of a serpentine of copper tubes to the exterior of which are affixed *ailettes* or radial plates of iron or aluminium. Although not necessarily restricted to a serpentine, that form as shown by Fig. 1 is generally adopted, the distance between the centres of the pipes in the serpentine being either 60 mm. or 80 mm., according to the diameter of the pipes. In order that the air shall be free to circulate over the cooling plates of the serpentine, the latter is generally attached to the front portion of the frame of the car below the "body," its position in the water circulation being usually between the water-tank and the circulating pump, the heated water thus passing in at the top of the serpentine, and the cooled water emerging at the bottom. The device is made with pipes of two sizes—for motors indicating up to 8 h.p., pipes 15 mm. internal diameter are employed, the length of the serpentine required being 2 metres per h.p. of the motor; for motors above 8 h.p. a serpentine with pipes 18 mm. diameter is made and recommended, the length per horse power being only 1.35 metres. The radiating plates, which

A COMPANY has just been formed in Paris (7 Rue Brunel) with a capital of £20,000, and with the title *La Société des Voiturettes L'Créanche*, to manufacture and deal in motor-cycles and motor-cars, etc.

ON Saturday Mr. Clarke held an inquest at Shrewsbury on the body of Thomas Williams, drayman, who died in the infirmary from injuries received on May 2nd. The horse which the deceased was driving was startled by a motor-car driven by Mr. E. Robbins, of Moseley, Birmingham, and in trying to stop the animal deceased fell under the wheels of his van. A verdict of accidental death was returned.

FIVE motor-cars are now running regularly at Sunderland—to the west end of the town and to Roker—and two others are kept in reserve in case of breakdowns. Further cars are being built for the Wearside borough at Coventry, and by the Otto Motor-Car Company, London; and when the orders now on hand are executed there will be about twenty of the self-driven vehicles on the present and on new routes. It is intended, in the course of a few days, to open a service between Sunderland and Grangetown.

## The Automobile Club's Trials.



"STAR AND GARTER" YARD, RICHMOND.

THE first of the trials held in connection with the above Club duly commenced in glorious weather on Richmond's beautiful heights on Friday last, and although there was practically no attendance of the public, there was a fair muster of something like thirty motor-cars. The start was somewhat slow—in fact, rather behind the announced time; but this no doubt was owing to the fact that every passenger had to be weighed, the petrol tested, and the

however, midday when the first car got away, and the proceedings afterwards seemed somewhat slow; but the trials were satisfactory, inasmuch as nearly every vehicle succeeded in performing the tests appointed.

The apathy of the public seemed rather astonishing to us, also the lack of interest taken by members of the Club in the trials; for at no time during the day was there on the hill more than forty people, and in this number we include the officials, etc. Besides the cars actually taking part in the



JUDGES AND OBSERVERS, PETERSHAM HILL.

electricity noted, etc. There were a multitude of officials, and no doubt their presence will give something in the nature of perfection to the results arrived at. The earliest car arrived at the "Star and Garter" yard about 9 o'clock, and thereafter the cars came up in quick succession until, about 11 o'clock, every vehicle had arrived. It was,



DE LA HAYE CAR, PETERSHAM HILL.

competitions, there were present Sir David Salomon's Peugeot, Mr. Hargreave's "twin" Daimler, and Mr. Roger Fuller's De Dion tricycle.

The instructions to competitors in the hill-climbing trials were that each competitor had to assemble in the yard of the "Star and Garter," not later than 10 a.m., then get weighed

along with the passengers, and afterwards proceed in the car down Petersham Hill. At the "Dysart Arms," at the foot of the hill, the competitor had to ride up the hill again at his



PETERSHAM HILL.

best speed for time purposes, then turn and come down hill at good speed for the purpose of car being stopped suddenly, by whistle, to test brake power. Reaching the foot of the hill, the competitor once more turned, and rode forward with a view of being stopped at the steepest part, within about thirty feet of the summit, to test the speed of the starting of the car. At this point several failed, in more than one instance the motor stopping; but we think the value of the test of the brake power was neutralized to a great extent by some of the competitors proceeding down hill very cautiously, not to say warily, evidently having had the "tip" to watch for the man with the whistle in his mouth.

1.—BARRIÈRE TRICYCLE.—Ridden by patentee. Sprinted up the hill in fine style; stop and start also good.

23.—INTERNATIONAL CAR.—4½-h.p. English-made car. Went up hill first time well, travelled down slowly, and failed at the re-starting.



LANCHESTER CAR, PETERSHAM HILL.

16.—CANSTATT DAIMLER.—Driven by Mr. Hankinson. Three passengers. Failed at the re-start, passengers having to dismount.

22.—BENZ NO. 1 IDEAL.—Driven by Mr. Campbell. Performed all the tests well.

20.—NEW SMALL DAIMLER.—Driven by Mr. Critchley. Three on, the extra passenger sitting on the "bonnet." Did very well, and caused general admiration at its cob-like appearance.

34.—HERCULES (DUCROISSET) WAGONETTE.—Driven by Mr. S. Atkins. Three passengers. Went up hill splendidly; but in our opinion, through brake lever being too short and out of reach of driver, the "pull up" was slow. The re-start was very good. A second trial with "six up" was also successful.

31.—VALLÉE.—Had two trials; in both instances slow at stopping through difficulty of reaching brake handles.

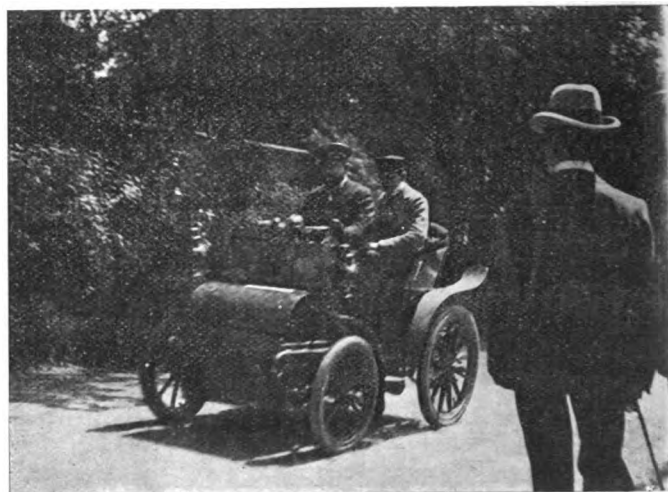
14.—RIKER ELECTRIC CAR.—Seat one, beside driver. Built by Messrs. Mackenzie & Co. Performed the tests beautifully, its silent running causing general admiration.

36.—TOURIST.—French car, on Bollée principle.

32.—MORS.—Driven by Dr. Lehwiss. Went up hill first time very well, and also travelled down hill fast, but did not stop at sound of whistle. At the dead stop, car failed to start for some time.

35.—ORIENT EXPRESS.—Driven by Mr. Frentzel, Mr. Buttemer passenger. Performed the tests creditably, travelling up the hill at fair speed and pulling up under fifty feet.

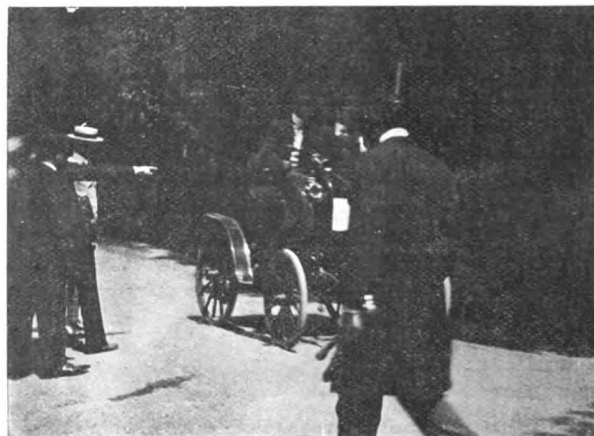
10.—ELECTRIC FOUR-WHEELED BUGGY.—Built by Electrical Undertakings, Ltd. Two passengers. Fastest



MORS CAR, PETERSHAM HILL.

car of all up hill—so fast, indeed, that for confirmation sake driver was asked to do second trial. Reputed to have performed the journey up the rise twenty seconds faster than any other car.

19.—DAIMLER WAGONETTE.—Driven by Mr. Van Toll, with five heavy passengers, weighing in all 79 st. 9 lb. The car reached the top first time all right, and in descending came down the hill at a great rate. When the whistle was sounded, the brake was put hard on, skidding the wheels and cutting up the roads. The strain, we should imagine, was about the greatest that could be applied to a vehicle.

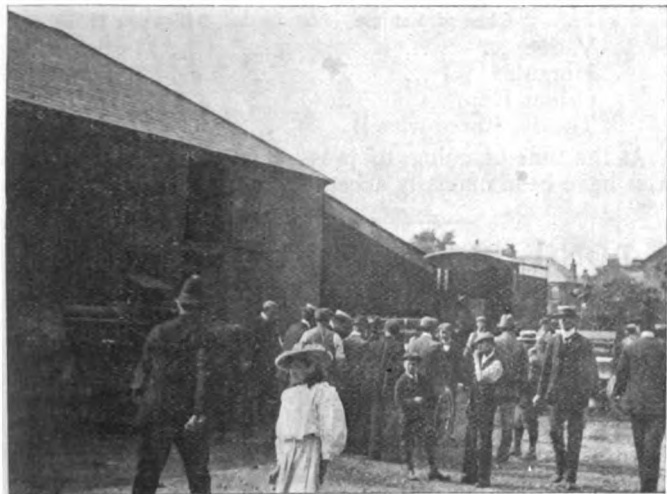


PETERSHAM HILL.

The car was brought to a standstill within fifty feet. On the return journey, after the stoppage, there was a great struggle to get a start, but ultimately the car reached the top, without any of the passengers dismounting.

18.—DAIMLER SIAMESE CAR.—Driven by Mr. Mayer. Three passengers. Went up and down the hill; stopped and started, and drew up within fifty feet.

21.—8-H.P. BENZ DOG-CART.—Driven by Mr. Coles. Three passengers. Rather slow up the rise, but in the



AN INN YARD.

descent a cart was in the way and the whistle was not heard. A second trial was allowed, and a phenomenally sharp stop was made. The stop and start on the hill was very satisfactory.

24.—LANCHESTER 10 H.P.—Driven by owner. One passenger. Went up hill at very fair speed, but not as fast as we anticipated, considering the power of the motor. Came flying down hill, and brake, being sharply applied, caused car to swerve. Took nearly 150 feet to draw up. The starting test was very satisfactory.



BAYLEY'S CAR, UXBRIDGE.

26.—DE LA HAYE.—A four seated vehicle, shown for the first time in this country. Driven by a Frenchman, and with Mr. Heyermans and two passengers on board. Travelled up hill very well, but came down slowly. Performed other test satisfactorily.

29.—8-H.P. PANHARD.—Driven by the Hon. C. S. Rolls, accompanied by a passenger. Travelled up the hill very well, but not fast. Slowed up leisurely, no doubt out of respect for car.

27.—IVEAGH PHÆTON.—Five seated. Went up first time all right, but passengers had to dismount at final test.

30.—SMALL BENZ.—Mr. Beevor. Driven by owner, who travelled well down the hill to starting point; then went round the base of the hill back to the yard.

Mr. Butler's (No. 28) car also refused to face the rise.

25.—HURTU.—Driven by Mr. Rush. Failed at the stopping and starting test.

Regarding Saturday's trials, only two electrical vehicles started, and particulars of results will be found in another column.

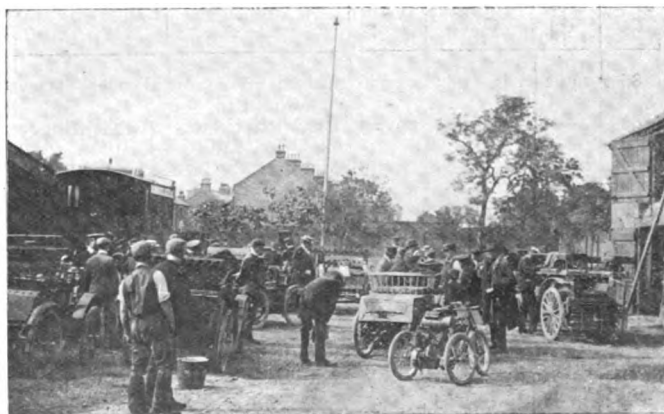
Referring to the fifty-mile trials, speed was, of course, limited to the Board of Trade regulations of twelve miles per hour. Twenty-two vehicles took part in the contest, and the drivers and passengers on these had a very miserable time. The day was a beautiful one, and most of the cars went through without stopping for adjustment, but many were pulled up by the observers for exceeding the limit of five minutes per mile. The average was found most difficult to maintain, and several cars had to loiter by the milestones until the necessary seconds—in more than one instance, minutes—had passed. The whole affair was weary, and to see Mr. Lanchester's car, the 8-h.p. Benz, the du Croiset, and the



INTERESTED SPECTATORS.

fast "Mors," along with the "hippopotami" on wheels, crawling along was an object deserving of reproduction by photographic process, but unfortunately the episodes are lost.

Some twenty-two cars took part in the function, and all but two or three came through satisfactorily. The "Mors," however, punctured a tire and slipped a belt. At the Great Dashwood Hill most of the cars "got up," and very creditably, too, but the Barrière tricycle was stopped for exceeding the limit of twelve miles an hour on the hill, and the patentee had to walk up, much to his disgust. Mr. Crompton, jun., the cyclist observer, probably enjoyed the rest. One of the cars, the new light Daimler, very fast speeded, driven by Mr. Critchley himself, got half way up the hill, but the car being absolutely a new one, and without a third speed, would not mount, and rather than push it up



SOUTHALL.

the driver turned round and did some of his miles on the return journey well within the "legal" limit.

On Tuesday another of the announced trials took place. We unfortunately, through a breakdown on the Metropolitan



Railway, missed our train, and did not reach the Chequer's Inn, at Uxbridge, till nearly 12 o'clock. Outside was, to us, a new vehicle; it was labelled E. H. Bayley's van, but on examination we found the engineers' work was by Owen Brazil & Holborrow, engineers, Bristol. It was of lorry style, and had a De Dion boiler, Straker's compound engine, and the under gear seemed to us a very good facsimile of the Daimler gear.

There was considerable delay in the starting of this vehicle, and when apparently ready for going it was found that the car had to be weighed. Coal and coke then had to be removed from the vehicle, and it was past one o'clock before a start was made. We had missed the other vehicles, but after luncheon, in a car driven by Mr. Sturme, we had the opportunity of journeying over the course of twenty miles which the heavy vehicles had to travel.

The first vehicle we passed was Bayley's, travelling remarkably well with its load of three tons. Afterwards we passed the Daimler post office van, carrying thirty cwt. This car was travelling very finely, and immediately behind, within fifty or sixty yards, was the Thornycroft, using Welsh coal, and carrying three tons. The other two vehicles were Canstatt Daimlers, owned by the Motor Supply Company, and carrying respectively three and five tons. All the cars came within, we are informed, the legal allowed time, but more than one had to slow up at the milestones through being too fast.

An incident during the journey of twenty miles was the passing by the Thornycroft of the Daimler, which was religiously kept within the time limit by Mr. Critchley, who was driving. But the Daimler had its revenge afterwards when the Thornycroft vehicle stopped to obtain water, and thereafter the latter vehicle was content to follow within forty or fifty yards of the Daimler the remainder of the journey.

The drivers and passengers were not only white from the extreme dust but were also sore from the hardness of the seats which they occupied, nails and stones not being conducive to comfort.

## THE HILL-CLIMBING CONTEST.

THE hill-climbing contest of the Automobile Club took place on Friday last at Petersham Hill. The length of the hill is 817 feet, and the total rise 73 feet, the average gradient being 1 in 11.19. The following table gives the details of the result as compiled by the Club's officials:—

| Official No. | Stopped in Feet. | At a Speed of Miles per Hour. | On a Gradient of | Ascended Hill at a Speed of Miles per Hour. | Name of Entrant.                | Class of Vehicle.       |
|--------------|------------------|-------------------------------|------------------|---|---------------------------------|-------------------------|
| 1            | 86               | 14.62                         | 1 in 13.85       | 13.926                                      | Automobile Association, Ltd.    | Barrière Tricycle       |
| 10           | 90               | —                             | 1 .. 13.85       | 10.965                                      | Electrical Undertakings, Ltd.   | 4-wheel Buggy           |
| 14           | 98               | 15.47                         | 1 .. 12.9        | 5.719                                       | Mackenzie's Carriage Co., Ltd.  | Hooded Phaeton          |
| 16           | 96.75            | 14.88                         | 1 .. 12.9        | 4.00  | Motor-Carriage Supply Co., Ltd. | Convertible Wagonette   |
| 18           | 47               | 15.43                         | 1 .. 12.9        | 5.35  | Daimler Motor Co., Ltd.         | Siamese Phaeton         |
| 19           | 48               | 14.65                         | 1 .. 12.9        | 4.41  | Daimler Motor Co., Ltd.         | Rougemont Wagonette     |
| 20           | 95               | 12.47                         | 1 .. 12.9        | 5.46  | Daimler Motor Co., Ltd.         | Critchley Light Car     |
| 21           | 103              | 15.03                         | 1 .. 12.9        | 5.98  | Hewetson's, Ltd.                | Benz Dog-Cart           |
| 22           | 82.5             | 16.23                         | 1 .. 13.85       | 9.77  | Hewetson's, Ltd.                | Benz Ideal              |
| 23           | 38               | 10.41                         | 1 .. 12.9        | 6.99  | International Motor Car Co.     | 4-wheel "International" |
| 24           | 131              | 21.28                         | 1 .. 12.9        | 5.75  | F. W. Lanchester                | 4-wheel Car             |
| 25           | 74.25            | 6.99                          | 1 .. 12.9        | 7.42  | Marshall & Co.                  | 4-wheel Car             |
| 26           | 37               | 15.96                         | 1 .. 12.9        | 7.91  | De la Haye Co.                  | 4-wheel Phaeton         |
| 27           | 68.6             | 14.09                         | 1 .. 13.8        | 4.58  | Motor Mfg. Co., Ltd.            | 5-seated Phoenix        |
| 29           | 94               | 13.11                         | 1 .. 12.9        | 8.75  | Hon. C. S. Rolls                | Panhard 8 h.p.          |

In this contest the Automobile Association also entered but owing to some informality in the entry—a point to be finally decided by the judges—the details of their vehicles were not included in the official list up to Wednesday evening. The speed at which their vehicles ascended the hill was, however, as follows:—

| Class of Vehicle.            | Miles per Hour. |
|------------------------------|-----------------|
| Vallée ... ..                | 7.8             |
| Hercules ... ..              | 6.11            |
| Orient Express ... ..        | 5.17            |
| Tourist (three-wheel) ... .. | 4.95            |

At the time of going to press we learn that the above entries have been officially accepted.

## LONG DISTANCE TRIALS FOR ELECTRIC VEHICLES.

THIS contest was decided over a course commencing at Richmond and going through Kingston, Esher, Leatherhead, Epsom, Ewell, and back to Richmond. There were two competitors, the Electrical Undertakings, Ltd., entering a four-wheel buggy, and the Mackenzie Carriage Co. a hooded phaeton. The former weighed 16 cwt. 2 qr. 16 lb. unloaded and 19 cwt. 2 qr. with two passengers, and covered a distance of 33½ miles in 3 hr. 14 min., the average speed being 10.36 miles per hour. A moment's delay through a horse being in the way and the fact that a wrong turning was taken on two occasions were among the incidents of the journey, the others being the stoppage for a few minutes because of hot bearings at the twelfth mile, and for three minutes at Epsom. Never did the car exceed a speed of twelve miles an hour, and there was a marked absence of noise and vibration.

The Mackenzie Carriage Co.'s entry weighed 18 cwt. 3 qr. 10 lb. unloaded, and 21 cwt. 2 qr. with two passengers. In 3 h. 50 m. it covered twenty-nine miles at an average speed of 7.56 miles per hour. Three stoppages were made ere the charge finally run out, causing the stoppage of the car altogether. One was occasioned by the traffic, and at the twenty-fifth mile four minutes were spent in pushing the car fifteen yards to the top of the hill. Later, a quarter of an hour's rest was given the cells, which had nearly run down, and then came the end.

## LONG DISTANCE CONTEST.

TWENTY vehicles took part in the fifty-mile petrol contest of the Automobile Club. Commencing at Southall, the course was twenty-five miles along the Oxford road and back again. In the table on page 235, giving full official details of the results, the abbreviations m.s. indicate milestones, these being counted from London.

The Motor-Carriage Supply Co.'s wagonette (No. 16) weighed 27½ cwt. and only required 2½ oz. of water during the journey. At the twenty-fifth milestone the first stoppage was made, and again on Stokenchurch Hill it was necessary to attend to the friction clutch. It kept a uniform speed throughout the contest.

The Daimler Co.'s Siamese phaeton (No. 18) went through the contest without a stoppage at an average speed of 12.29 miles per hour, with a water consumption of 1½ gallons, but most of the other cars had delays for various causes. One of the Critchley light cars (No. 17) turned back between the thirty-third and thirty-fourth milestones, but the other car of that type (No. 20) went the whole 50 miles in 4 h. 25 m., only stopping twice, once for half a minute at the hill near the ninth mile and again at the tenth to make some minor adjustments. Its consumption of water was 2 gallons 1 pint. The same Company's Rougemont wagonette (No. 19), weighing 27½ cwts., was stopped at the twenty-fourth milestone for two minutes, the burner requiring relighting; but no



| Official No. | NAME OF ENTRANT.                   | Time of Start. | Time taken up to 21st. m.s. | Time between 25th & 26th m.s. | Time between 33rd & 34th m.s. | RETURN.                       |                               | Total Time. | Speed miles per hour. | Petrol consumption per hour. |
|--------------|------------------------------------|----------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------|-----------------------|------------------------------|
|              |                                    |                |                             |                               |                               | Time between 26th & 25th m.s. | Time between 21st & 26th m.s. |             |                       |                              |
| 16           | Motor-Carriage Supply Co. .. ..    | h. m.          | m. s.                       | m. s.                         | m. s.                         | m. s.                         | m. s.                         | h. m. s.    |                       | pints                        |
| 17           | Daimler Motor Co. .. ..            | 10 56          | 59 30                       | 5 0                           | 15 30                         | 8 30                          | 8 0                           | 4 27 30     | 11'21                 | '4                           |
| 18           | " .. ..                            | 11 31          | 54 0                        | 4 15                          | Turned back.                  |                               |                               |             |                       |                              |
| 19           | " .. ..                            | 11 13          | 58 30                       | 5 0                           | 6 45                          | 6 0                           | 5 25                          | 4 4 30      | 12'29                 | '24                          |
| 20           | " .. ..                            | 11 33          | 54 0                        | 6 0                           | 9 50                          | 6 40                          | 6 15                          | 4 18 30     | 11'62                 | '36                          |
| 21           | Hewetson's, Ltd. .. ..             | 11 7           | 61 0                        | 5 50                          | 8 30                          | 7 0                           | 6 0                           | 4 25 0      | 11'24                 | '24                          |
| 22           | " .. ..                            | 10 57          | 51 0                        | 5 0                           | 7 0                           | 6 0                           | 4 30                          | 4 4 0       | 12'29                 | '36                          |
| 23           | International Motor-Car Co. .. ..  | 11 3           | 57 0                        | 4 30                          | 10 0                          | 6 0                           | 6 0                           | 4 6 30      | 12'19                 | '2                           |
| 24           | F. W. Lanchester .. ..             | 11 14          | 62 0                        | 4 5                           | 24 0                          | 7 0                           | 15 0                          | 6 3 0       | 8'26                  | '48                          |
| 25           | Marshall & Co. .. ..               | 10 42          | 60 0                        | 5 0                           | 5 0                           | 5 0                           | 5 0                           | 4 10 0      | 12'                   |                              |
| 26           | De la Haye Co. .. ..               | 11 39          | 48 0                        | 4 0                           | 2h. 45m.                      | 6 30                          | —                             | 8 11 0      | 6.11                  | '52                          |
| 27           | Motor Manufacturing Co. .. ..      | 11 19          | 48 0                        | 4 0                           | 6 0                           | 3 5                           | 4 0                           | 3 23 0      | 14'77                 | '24                          |
| 28           | T. H. Butler .. ..                 | 12 59          | 44 0                        | 4 0                           | 8 30                          | 7 0                           | 4 30                          | 3 28 0      | 14'42                 | '4                           |
| 29           | Hon. C. S. Rolls .. ..             | 11 27          | 63 0                        | 4 30                          | 12 0                          | 3h. 13m.                      | 4 45                          | 7 23 0      | 6'77                  | '56                          |
| 30           | Automobile Association, Ltd. .. .. | 11 35          | 53 0                        | 5 0                           | 5 0                           | 5 0                           | 5 0                           | 4 8 30      | 12'09                 | '36                          |
| 31           | " .. ..                            | 11 20          | 49 0                        | 3 0                           | 7 0                           | 4 0                           | 5 30                          | 4 2 30      | 11'53                 | '52                          |
| 32           | " .. ..                            | 10 59          | 55 0                        | 5 0                           | 12 0                          | 4 30                          | 4 30                          | 4 52 0      | 10'25                 | '2                           |
| 33           | " .. ..                            | 11 22          | 68 0                        | 4 0                           | 12 0                          | 4 20                          | 5 7½                          | 5 12 0      | 9'6                   | '2                           |
| 34           | " .. ..                            | 11 12          | 53 0                        | 4 30                          | 8 15                          | 5 0                           | 5 0                           | 3 53 0      | 12'87                 | '68                          |
| 35           | " .. ..                            | 11 16          | 56 0                        | 5 0                           | 11 45                         | 5 45                          | 9 0                           | 5 32 0      | 9'03                  | '56                          |
| 36           | " .. ..                            | 10 47          | 57 0                        | 5 20                          | 6 55                          | 8 30                          | 5 0                           | 4 46 0      | 10'49                 | '26                          |

person left the car, and an average speed of 11'62 miles was attained, one gallon of water being required. Neither the Benz dog-cart (No. 21) nor the Benz Ideal (No. 22) made a single stoppage, doing the journey at average speeds of 12'29 and 12'19 miles per hour respectively, the water consumption being 2 gallons 5 pints in the case of the former, and 1 gallon 5 pints in the case of the latter.

No. 23, a four-wheel "International," weighing 11½ cwt. (42 lb. short), had a series of misadventures, and although the speed when running reached fifteen miles per hour the rate for the journey only averaged 8'26 miles per hour. At Wycombe two gallons of water had to be obtained, and then a stoppage was necessary at the seventeenth milestone owing to faulty ignition. The same cause delayed the car twelve minutes four miles further on, and then at the twenty-second mile twenty-three minutes were occupied in adjusting the exhaust opening. Various other stoppages were made to refill the tanks during the next few miles; and then at the thirty-third milestone loosened crank bearings necessitated a delay of seven minutes, while three minutes were occupied in making the ignition certain, and a similar time to clean the cylinder lubricators. The tap being left open caused a leakage of water from the tanks, which became apparent later, and six minutes were occupied in refilling, the total consumption of water on the journey being 6 gallons 4 pints. Mr. Lanchester's three-seated car (No. 24) used no water, and was slowed down before each milestone in order to keep within the twelve-mile limit. The four-wheel phaeton (No. 26), which attained an average speed of 14'77 miles per hour, was stopped two seconds on account of the traffic; otherwise it had a straight run, with a water consumption of 1 gallon 1 pint. No. 27, a five-seated Phoenix, made a uniformly fast pace, and the only difficulty was that the burner required re-lighting on three occasions. It weighed 1 ton 8½ cwt., and consumed 6 gallons 7 pints of water. The Hon. C. S. Rolls went through on his Panhard without stopping, the speed being uniform, and only 4 pints of water being required. This car weighed 20½ cwt. Two stoppages were made by the four-wheel car of Messrs. Marshall & Co., the first at the fifteenth mile to see to the ignition, and again at the hill near the twenty-second milestone owing to a wrong mixture. The car had to be helped up Stokenchurch Hill, and on the return journey the vibration was very noticeable, and on three occasions the driver had to get off. Ultimately it stopped, and oil had to be borrowed to assist the final attempt to get home. The average speed when running was twelve miles per hour, but this was materially reduced so far as the

average rate of progress over the whole distance was concerned. Mishaps attended Mr. Butler's two-seat Benz car (No. 28) from the eighteenth mile, and at the twentieth it stopped for repairs at a blacksmith's shop. At the twenty-sixth mile it was delayed three and a quarter hours for a new cotter and pin.

Several vehicles were entered by the Automobile Association, Limited. Their Vallée car (No. 31), weighing 13 cwt., had a minute's stoppage to adjust a detail, and at the thirty-third milestone was delayed four minutes while the ignition was being attended to. This again gave trouble later, and on reaching the twenty-seventh milestone a stoppage of nine minutes was made to allow the bearings to cool. When running the car was uniformly too fast. Fairly uniform results were attained by the Mors car (No. 32). At Wycombe a stoppage was made on account of a puncture, and there a gallon of water was taken. The slipping of a belt on the brow of a hill occasioned a further stoppage, and later the friendly act of giving petrol to another car caused a slight delay. Several stoppages were made by the Lynx car (No. 33), the speed of which was uniformly too fast when running. At the fourteenth milestone the tire required pumping, and water was again required at the twenty-third mile. Changing the gear four miles further on caused another wait of nine minutes, and later four minutes were occupied in taking in water. Three short stoppages on the way back were also made. The Hercules car (No. 34) had an experience with frightened horses, resulting in a collision, and consequent delay of two minutes one minute having previously been lost on Stokenchurch Hill. Another of the Automobile Association's vehicles, the Orient Express (No. 35), also stopped on this hill, the lubricator having become blocked. This again caused a delay at the thirty-second milestone, while on the return journey several stoppages, one of twenty-six minutes at the sixteenth milestone, were necessary. The Tourist car (No. 36), weighing 7¾ cwt., had two stoppages, the first (at the twenty-third milestone) being to lubricate the crank chamber, and the second at Wycombe for the refreshment of the driver, and oil for the crank joint.

## HEAVY TRIALS.

THE trials for heavy vehicles were run from Uxbridge, the distance being ten miles, and back again, making a course of twenty miles. In studying the official details on next page, it should be remembered that the time occupied

| Official No.                               | Name of Entrant.           | Total Weight. |      |     | Weight Carried. |      |     | Water used. | Fuel.     | Fuel used.     | Fuel used per mile. | Time in Turning. | Time for 20 Miles. |       |    | Average Speed per hr. |      |        |
|--|----------------------------|---------------|------|-----|-----------------|------|-----|-------------|-----------|----------------|---------------------|------------------|--------------------|-------|----|-----------------------|------|--------|
|  |                            | tns.          | cwt. | qr. | tn.             | cwt. | qr. |             |           |                |                     |                  | lb.                | Mins. | h. | m.                    | s.   | Miles. |
| 41   | Steam Carriage & Wagon Co. | 6             | 19   | 0   | 3               | 8    | 0   | 18          | 136 gals. | Coal.          | 197 lbs.            | 9'85 lbs.        | 24                 | 3     | 42 | 20                    | 5'4  |        |
| 42   | Motor-Carriage Supply Co.  | 8             | 13   | 0   | —               |      |     |             | 1 gal.    | Petrol.        | 4 gals.             | '2 gals.         | 27                 | 5     | 19 | 0                     | 3'76 |        |
| 43   | "                          | ..            | 4    | 6   | 0               | 2    | 4   | 1           | 0         | 11½ oz.        | Petrol.             | 2 gals. 6 pts.   | '1375 gals.        | 21    | 3  | 27                    | 0    | 5'84   |
| 44   | Daimler Motor Co. "        | ..            | 4    | 1   | 3               | 1    | 18  | 1           | 0         | 2 gals. 7 pts. | Petrol.             | 3 gals.          | '15 gals.          | 23    | 3  | 59                    | 0    | 5'02   |
| 45   | Bayleys, Ltd. "            | ..            | 6    | 12  | 2               | —    |     |             | 99 gals.  | Coke.          | 122 lb.             | 6'1 lb.          | 66                 | 5     | 13 | 0                     | 3'83 |        |
| Including stops.<br>4'81<br>when steaming. |                            |               |      |     |                 |      |     |             |           |                |                     |                  |                    |       |    |                       |      |        |

in turning really represents a run of two miles in addition to the turn, as the time was taken from the moment the car commenced to travel a certain mile and, having turned, got back to the starting point. The longer time occupied by Messrs. Bayley's van was due to a misadventure in getting into the ditch, and hence two average speeds are given, one including stoppages and the other only taking account of the progress when steam was up. The two vans of the Motor Carriage Supply Co. (Nos. 42 and 43) were 10 and 6 h.p. respectively, and that of the Daimler Co. was one designed for post office service.

## SPEED TRIAL.

THE speed trial fixed for Wednesday only attracted one entrant—the Delahaye Co.'s four-wheeled phaeton. A course was selected outside Colchester, and in the local arrangements for judges, as well as competitor, Mr. Stokes took considerable interest, materially assisting the convenience of all concerned. In the result the phaeton covered the mile in 2 m. 13½ s.

## SCOTTISH NOTES.

### The Motor-Car's Growing Popularity.

THIS week I observed a striking illustration of the growing interest in the motor-car among a class of people who have, undoubtedly, a strong bias in favour of the "noble horse." The "Queen's Own" Yeomanry Cavalry (Lanarkshire) have, during the past ten days, been undergoing their annual drill at Hamilton, and the ancient town has for the time worn a more than usual military aspect, and has been altogether more animated. During their visit it appears that the "gallant knights" in large numbers have sampled the delights of motoring for the first time, and I learn that on all hands the motor-car has conquered. One gentleman who is a capable horseman and has driven and ridden much, assured me that the runs which he had been able to secure on the Hamilton motor-cars had vastly astonished him, the idea of real enjoyment in driving a mechanical vehicle being apparently quite new to him. He expressed himself surprised at the smoothness and regularity in the motion of the cars, the sense of comfort and genuine pleasure he so unexpectedly experienced—so much so, that he had decided to purchase a car for himself. During the whole week the cars of the local company were in great demand, and quite a crowd of them were in attendance at the annual sports and races in connection with the "Queen's Own" on Saturday last, alongside the usual turn out of horse-drawn landaus, wagonettes, etc., etc.

### Motors and Marriages.

JUST as it was the proper thing for the Hamilton motor-car makers to employ only mechanical vehicles on the occasion of their excursion a week or two ago, it was in the natural fitness of things that motor-carriages should be in evidence last week on the occasion of the marriage of

Miss Stirling, sister to Mr. John Stirling, of Hamilton. In the afternoon the wedding party were taken out on some half-dozen motor-cars of various types. The use of mechanical carriages at Scotch weddings is not at all uncommon, and appears to be appreciated by the guests.

### Edinburgh to London.

ON the eve of sending my "notes" to the press, Mr. Stirling advises me that he left Edinburgh this (Wednesday) morning on his Stirling-Daimler dog-cart to run up to London. He has selected the East Coast route for a change, and expects to get somewhere near York (203 miles) before "drawing bridle."

### Another Edinburgh Car.

THIS week another elegant Stirling-Daimler car has been added to the stud of the Edinburgh Autocar Co., Ltd. It is described by the makers as a "sociable-wagonette." In place of the entrance being by a door at the back, as in the case of the ordinary wagonette, access is had by the front, the usual front seat being divided in the middle for this purpose. It appears to be somewhat after the style of Mr. Sturmeys "John-o'-Groater," only of larger capacity. This form of carriage is certainly comfortable, and the view ahead is uninterrupted by the box seat.

### The Shows.

I UNDERSTAND that that enthusiastic motorist, Mr. P. Drummond, of Stirling, is riding up to the Richmond Show on his De Dion tricycle this week, and everybody else who can are finding their way South to take part in the Exhibition functions.

### A Favourite Scottish Route.

STARTING with the City of Glasgow as a centre from which to work, one of the most charming runs for the "touring" motorist is to take the Dumbarton Road out of Glasgow, and following the Clyde for several miles run down through Dumbarton (noting by the way Dumbarton Castle) and Alexandria to the shores of Loch Lomond—the Queen of our Scottish lakes. The road all the way is excellent, and the scenery the most varied and delightful to be found in the country. For miles the road winds along the shores of the Loch, at every turn bringing new and exquisite views of "mountain and flood." At Tarbet, about half way up the Loch, is a first-class hotel where both the wants of man and motor-car can be supplied. To thoroughly enjoy this trip speed should not be attempted, especially as there are many awkward right-angle turns to be negotiated, requiring considerable care, and Tarbet may be made a suitable stopping place for the night.

"BROWN HEATHER."

It is announced that the construction of motor-cycles is being taken up by the Veldidena Cycle Works at Junsbruck, Austria.

## A DOCTOR'S CAR.



**T**HE Yorkshire Motor Company of Bradford have designed the Jackson doctor's car to meet what they consider are the essential requirements of those who are looking to the motor-car either to save money or time, or to be a source of pleasure and health.

This carriage is a four-wheeled one, running on strong tangent wheels, which, it is stated, will withstand both vertical and side strains. They are fitted with 3-in. pneumatic tires of such design as will be almost unpuncturable, and will reduce the vibratory wear and tear of the car to a minimum.

The frame is of channel steel which makes the lightest and at the same time the strongest frame known.



YORKSHIRE MOTOR CAR CO.'S "DOCTOR'S CAR."

The body is hung on laminated steel springs, so that in combination with pneumatic tires a most comfortable car is obtained. The body of the carriage can be of any design; either back-to-back dog-cart, vis-a-vis phaeton, Stanhope phaeton, small coupé, or tradesman's van; but all are of the same uniform excellent workmanship, and finished and upholstered in the best style, and are interchangeable, so that, with two bodies, at a slight extra cost a summer and winter vehicle can be obtained, or a car for light goods delivery (up to 5 cwt.) or pleasure.

The motor is in the front, thoroughly cased in and protected, and is on the De Dion principle, with balance and fly-wheels running in an oil case and very silent in working, the exhaust being carried low down under the car and being quite free from smell or vapour. The Narling gear is a notable point, being affected from the driver's seat, so that there is no need to let the motor continue running when the car is standing, a turn of a handle being sufficient to again set it working. There are three speed gears, the makers using belts actuated by jockey pulleys, whereby the exact tension necessary for driving can be obtained by the position of the hand lever.

The cars can either be driven to each hind wheel from the counter shaft which contains the balance gear for two light roller chains, or can be fitted to drive centrally on a driving

axle fitted with balance gear by means of a pinion and sprocket wheel for the counter-shaft.

There are two band brakes on the driving wheel hubs, as well as tire brakes, on each driving wheel—and also the braking action of the belts can be used to stop the car.

An endeavour has been made to use ball bearings in every part in order to minimise friction and to enable easy adjustment, and all the wheels, steering gear, counter shaft and intermediate shaft, and even the jockey pulleys, are run on well-designed ball bearings. The steering and driving handles have all been placed in the most convenient positions, the former, a wheel at the driver's left hand close against the seat edge, the latter at his right, also against the seat edge, so that in wet weather his hands can be entirely under cover of the apron, and not stretched out in front. The manipulation of the car in traffic, by means of the foot-brake and the ignition switch, makes it absolutely under control.

A leading feature of the Jackson doctor's car is that by undoing a few bolts the entire body of the car can be lifted off in a few minutes and another one substituted, so making the car suitable either for business or pleasure purposes, or it can be supplied with an open and a closed body, so that in bad weather or at night a closed carriage may be used, while by day or in summer the car has all the advantages of an open carriage. This makes the one car equal to two separate carriages at a small extra cost.

Coach-building and motor-car making are two entirely distinct professions, and yet so many coach-builders are naturally anxious to be connected with the newer industry. Now, the Yorkshire Motor Co. are motor builders and by supplying the frame, wheels, motor and gearing complete in running order they hope to work with the coach-building trade. They therefore intend to make a special feature of supplying the coach-builders with that part which is their special department, and hope to have a leading carriage-builder in each town as their agent ere long.



THE title of La Société d'Automobilisme et de Cyclisme, of 32 Rue Caumartin, Paris, has been changed to La Société d'Automobilisme (Société d'Etudes).

THE young man, Diamond, who was so seriously injured in the motor-car accident at Alnwick last week, is now progressing satisfactorily, and is out of danger, although it will necessarily be some weeks before he has the use of his limbs.

WE are informed that Mr. F. W. Heaton, of Heaton, Smith & Co., electrical engineers, of Sidney Street, Salford, Manchester, is open to buy three motor-cars. Manufacturers please note, especially those making electric or steam vehicles.

HENRY JAMES WIMSHURST, of Coventry, held his first meeting as a bankrupt on Friday in last week. He had been experimenting with a motor, and had got a patent, but these experiments, it would seem, were the chief cause of bankruptcy.

MESSRS. HOWARTH & Co., of Bradford, builders of steam motor-vehicles, have removed to more commodious premises at 178 Garnett Street, Leeds Road. Automobilists who may be visiting the district should make a note of the address so that in case of need they may visit Messrs. Howarth.

ON Thursday week last the case, Leach v. Hewetson's Ltd., came on for hearing at the Westminster County Court, the plaintiff claiming £50 damages for injuries alleged to have been caused through collision with defendant's motor-car. Counsel were engaged on both sides, counsel for Messrs. Hewetson being instructed by their solicitor, Mr. Woodhouse, of the firm of Stanley, Woodhouse and Hedderwick, Ludgate Hill. After a hearing lasting from 2.30 to 5 o'clock, the jury returned a verdict to the effect that the plaintiff had not made out his case.

## NEW BELGIAN TYPES OF LIGHT MOTOR-CARS.

—88—



**I**N our issue of April 7th last we mentioned that a new two-seated light motor-carriage had been put on the market by the Fabrique Nationale d'Armes de Guerre, of Herstal, near Liège. We are now able to publish two general views (Figs. 1 and 2) of this elegant little car, together with a few additional particulars. As will be seen, the motor is located in the front position of the car, so as to be readily accessible. It is of the vertical petroleum-spirit type; it comprises two cylinders set side by side, and is stated to be capable of

around the cylinders, these, combined with the location of the motor in the front of the vehicle, rendering the use of a water-jacket unnecessary. The ignition is electrical, an induced spark effecting the ignition of the explosive charge. Passing to the transmission mechanism, from the motor shaft to the intermediary shaft the power is transmitted by belts, and from the intermediary to the rear road-wheel axle by means of the usual chains and sprocket wheels. Two mechanical forward speeds are provided, the variable speed gear being controlled by a single handle mounted on the steering standard. It is claimed that, by means of the variable speed gear and the variation of the electrical ignition, any speed from zero up to 35 kilometres per hour can be obtained. The road wheels are of the cycle type, fitted with pneumatic tires. Steering is effected by the front wheels, which are fixed on the usual short vertical pivots. The steering hand-wheel and the speed-control handle are mounted on a standard in con-

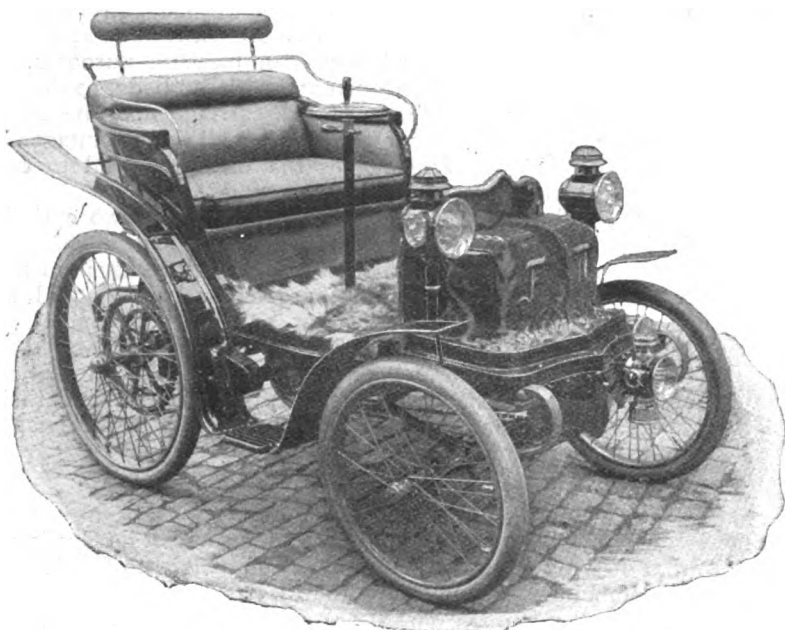


FIG. 1.—GENERAL VIEW OF THE FABRIQUE NATIONALE'S NEW CAR.

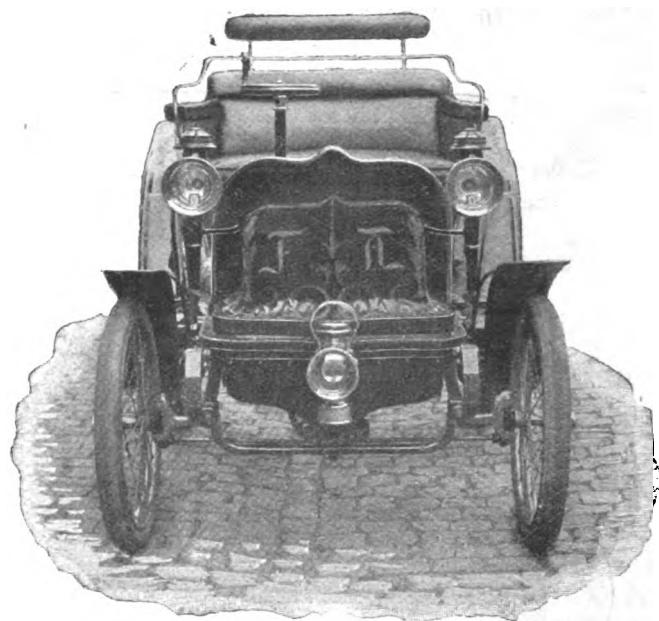


FIG. 2.—FRONT VIEW OF THE FABRIQUE NATIONALE'S NEW CAR.

working up to 3 h.p.; while its weight is given as 55 kilogrammes, or just over 1 cwt. Radial discs are provided

venient reach of the motor, provision being also made for the starting of the motor from the driver's seat. The petroleum-spirit storage tank has a capacity of 25 litres. The carriage complete weighs from 4 to 5 cwt., according to the class of carriage-builder's work desired. The car has only been on the market for about a couple of months, but orders have come in so rapidly that the Fabrique Nationale inform us they cannot book any more orders for delivery this year. The price of the car is, we understand, 3,000 francs, or about £140.

Fig. 3 gives an illustration of another new light motor-carriage which has lately been put on the market by the Société des Ateliers Vivinus, of 244 Rue du Progrès. The motor is of the vertical petroleum-spirit type, and is arranged in the front portion of the vehicle; it is stated to be capable of indicating up to 3½ h.p. The ignition is electrical, while for cooling purposes the cylinder is provided with radial ribs; these, combined with the location of the motor in the front portion of the

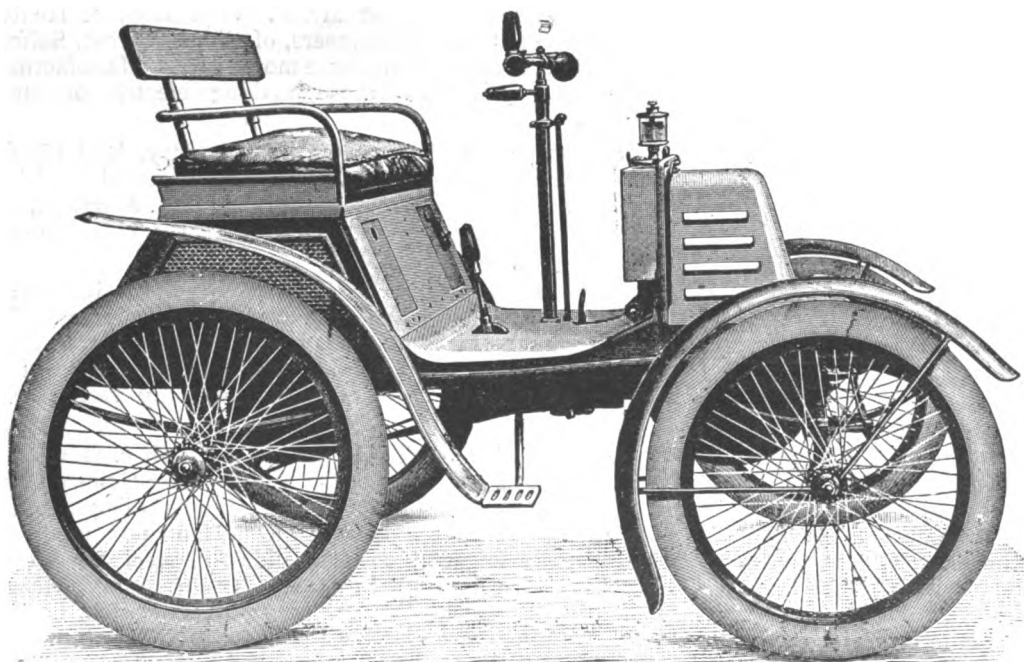


FIG. 3.—GENERAL VIEW OF THE "VIVINUS" CAR.

car, rendering, it is claimed, the use of a water-jacket unnecessary.

As regards the power transmission gear, two speeds are provided, the transmission from the motor shaft to the intermediary being by means of a single belt and two pairs of pulleys. The belt normally runs slack, and when shipped on to one or other pair of pulleys is tightened and consequently made to grip by means of a jockey pulley controlled by a foot pedal within convenient reach of the driver's foot. From the intermediary shaft to the rear road-wheel axle the power is transmitted through spur wheels, the one on the rear axle surrounding the differential gear, the ordinary driving chains and sprocket wheels being thus dispensed with. Although only two mechanical speeds are provided, any intermediary speed can be obtained by advancing or retarding the electric ignition. A petroleum-spirit storage tank is provided of a capacity sufficient for a run of about ninety miles. The road wheels are of the suspension type fitted with pneumatic tires. Steering is effected by the front wheels from the steering standard in the usual way. The weight of the "Vivinus" car complete is stated to be just under 3 cwt. Although it has only been on the market a very short time, we learn that the makers have already close upon 150 cars on order, this no doubt being owing, to some extent, to its relative low price—£120.

## CORRESPONDENCE.

### 1899 TRIALS OF MOTOR-VEHICLES FOR HEAVY TRAFFIC.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am not in a position to furnish you with a list of the entries, as there are several which may be excluded by the judges, who have not yet met to consider them. It is also possible that further entries may arrive from America, since I have been in correspondence with several firms there, to whom, in consideration of the time occupied by corresponding, I have allowed a little grace.

I am pleased, however, to be able to assure you that we shall have a larger number of vehicles taking part this year than last, probably not less than eight, of which two or more will carry loads of five tons and upwards.

As regards the arrangements for the trials, at present I can give you the following outline:—

Friday, July 28th.—Vehicles arrive at the show-yard of the Royal Lancashire Agricultural Society, Wavertree Recreation Ground, Smithdown Road, Liverpool. Inspection by the judges at 3 p.m., and preliminary records by the observers.

Saturday, July 29th.—Completion of observers' records of weights, capacities, dimensions, etc., etc.

Monday, July 31st.—The vehicles will leave the show-yard about 10.30 a.m. for the manoeuvring, hill-climbing, and other special tests, which it is expected will last until about 5 o'clock p.m.

Tuesday, August 1st.—Run of about thirty-five miles, starting from the show-yard at 10 a.m., chiefly over route "A" of last year.

Wednesday, August 2nd.—Second run of about thirty-five miles, starting from the show-yard at 10 a.m., chiefly over route "B" of last year.

What may be termed the trials proper will occupy Monday, Tuesday, and Wednesday, July 31st to August 2nd inclusive, upon which days light motor-carriages will be provided at fixed charges to carry visitors who desire to witness the behaviour of the competing vehicles upon the road.

It is particularly requested that all intending visitors will at once put themselves into communication with the honorary secretary, L.S.P.T.A., Mr. E. Shrapnell Smith, Royal Institution, Liverpool, so that they may be entered on the list of those to receive notices. During the continuance of the trials the headquarters of the Association will be at the

Adelphi Hotel, Liverpool, where rooms should be engaged in advance.

It is expected that the Post Office, the War Office, and all bodies who were represented last year will send delegates again, in addition to which numerous county, municipal, and other authorities have notified their intention of visiting the competition.

As your coming issue will be put before many new people at the show, and as it is not generally known that Lord Derby takes the interest he does, will you please make some reference to his being our president. It is a coincidence that he is this year's President of the Royal Lancashire Agricultural Society.

Yours faithfully,

Liverpool,  
June 10th, 1899.

E. SHRAPNELL SMITH,  
*Hon. Sec.*

## MOTOR-CARS ON THE CONTINENT.

### Motor-Cars in Spain.

So far the automobile movement has made relatively but little progress in Spain. The subject is, however, beginning to attract attention in all the large towns, and from Barcelona we learn that the municipal authorities of that town have appointed a committee to draw up a series of regulations relating to the control of motor-car traffic. It is also announced that Messrs. Benz & Co., of Mannheim, Germany, are establishing a dépôt in Barcelona for the sale of their well-known motor-vehicles.

### A Hungarian Automobile Club.

AUSTRIA has for some time past had its Automobile Club, and has in this respect been in advance of its neighbour, Hungary. However, the deficiency is about to be removed, for a meeting of automobilists has just been held in Budapest, when the formation of a Hungarian Automobile Club was decided upon and a committee appointed to draw up the necessary rules.

### Motor-Car Race from Amsterdam.

ENCOURAGED by the success of the recent motor-car race at Aix-la-Chapelle, the recently-formed West German Automobile Club has decided to organize a race between Amsterdam and Aix-la-Chapelle, to be run off on Sunday, the 25th inst. The race will be divided into two classes—motor-cycles and motor-cars. The distance is about 260 kilometres, and one of the conditions provides that no competitor will be eligible for a prize who exceeds fourteen hours for the journey.

### The Fontainebleau Rallie Papier.

THE paper-chase competition organized at Fontainebleau by M. P. Lafitte, which took place last Sunday week, was a great success. The track was marked out by M. Tampier and M. Delizy, the contest being run by M. René de Knyff, followed by MM. Leys, Mas, Marcotte, George Prade Audresset, Pinson, Bernheim, De Lueensky, Diligeon and Colomb. In the motor-cycle category, the order was as follows: 1 Cormier, 2 Coldas, 3 Chauveau, 4 Guyenet.

### A Panhard-Levassor Banquet.

THE victory of MM. Charron, de Knyff, Girardot, Gilles, Hourgières, etc., in the recent Paris-Bordeaux motor-car race was celebrated the other day by a banquet, to which the directors of the Panhard-Levassor works invited a number of friends. A very pleasant evening was spent.



**The Volturette Competition.**

As stated in our last issue, the voiturette competition over 100 kilometres of road between Etampes and Chartres was run off on the 16th inst. Of the fifteen entrants only ten started.

The order of arrival was as follows:—

1, Wilfrid (Bollée), 1 h. 59 m. 14 $\frac{3}{4}$  s.; 2, Thery (Decauville), 2 h. 17 m. 13 $\frac{1}{4}$  s.; 3, Strutz (Bollée), 2 h. 18 m. 22 s.; 4, Aubin (Decauville), 2 h. 32 m. 20 s.; 5, Gabriel (Decauville), 2 h. 46 m. 30 s.; 6, Dumond (Decauville), 3 h. 6 m.; 7, Cornilleau (Decauville), 3 h. 39 m.; Ravenez, Balray, and Yamin, did not finish.

**The Concours de Fiacres.**

We are now able to give the times occupied by the competing vehicles on the first six days of the trials.

| No. | Competitors.     | Type of Carriage.   | Nett Running Time. |             |             |             |             |             |
|-----|------------------|---------------------|--------------------|-------------|-------------|-------------|-------------|-------------|
|     |                  |                     | 1st day            | 2nd day     | 3rd day     | 4th day     | 5th day     | 6th day     |
| 1   | Jenatzy          | 2-seated Coupè      | h. m. h. m.        | h. m. h. m. | h. m. h. m. | h. m. h. m. | h. m. h. m. | h. m. h. m. |
| 2   | Jenatzy          | 4-seated Victoria   | 4.57.4.5           | 4.9.4.12    | 4.9.3.45    | 4.9.3.45    | 4.9.3.45    | 4.9.3.45    |
| 3   | Jenatzy          | 2-seated cab        | 8.3. —             | 3.36.4.39   | Brk dwn     | —           | —           | —           |
| 4   | Jenatzy          | Light delivery car. | —                  | 4.42. —     | —           | —           | —           | —           |
| 5   | Jeantaud         | 2-seated cab        | 3.27.4.40          | —           | 4.34.4.40   | 4.40.4.45   | —           | —           |
| 6   | Jeantaud         | 2-seated Coupè      | 3.46.4.9           | 8.8. —      | 3.18.3.43   | 3.20. —     | —           | —           |
| 7   | Jeantaud         | 2-seated Mylord     | 3.40.3.40          | 3.38.5.31   | 3.19.3.27   | —           | —           | —           |
| 8   | Mildé            | Light delivery van  | 3.30.3.24          | 4.37.4.30   | 2.59.3.47   | —           | —           | —           |
| 9   | Krieger          | 4-seated Coupè      | 4.14.4.12          | 4.26.3.12   | 4.19.4. —   | —           | —           | —           |
| 10  | Clement          | Light delivery van  | 3.26.3.21          | 3.21.3.28   | 3.15.3.7    | —           | —           | —           |
| 11  | Panhard-Levassor | 2-seated Coupè      | 3.21.3.12          | 3.3.3.3     | 2.59.3.26   | —           | —           | —           |
| 12  | Panhard-Levassor | Light delivery van  | 3.51.3.33          | 4.22.4.22   | 3.15.3.35   | —           | —           | —           |
| 13  | Jeantaud         | 2-seated drossky    | 3.38.3.29          | 3.37.3.37   | 3.16.3.24   | —           | —           | —           |

So far as the trials have gone, the opinion is held that although in general appearance the vehicles are unaltered from last year, yet considerable improvements have been effected in the motors, and transmission and control gear, the result being a greatly enhanced efficiency.

**A Motor-Car Fete in Paris.**

LA Fête Automobile des Tuileries, which took place in Paris on Monday afternoon last, was a brilliant success. Under a scorching sun a large crowd gathered on each side of the central avenue of the Tuileries Gardens. The proceedings commenced at 3 o'clock when half-a-dozen motor-cyclists careered off down the avenue tilting at rings, and came back, having caught them all, and beaming with the triumph of a not very arduous victory. Then came a so-called obstacle race. The course had been strewn with painted wooden dummies, and the competitors had to thread their way at full speed in and out and around them. This event had been arranged "to reassure pedestrians, and show them that there is no vehicle safer in street traffic than an automobile," and was a great success. After this M. Jenatzy gave an exhibition of the speed of his electric racing car the "Jamais Content" electric motor. But the *clou* of the meeting was the procession of floral auto-cars. Most of the theatres were represented, a number of private individuals also taking part in the procession with cars and motor-cycles, which were marvels of good taste in floral decoration.

**The Re-opening of the Automobile Club.**

EVERYONE interested in the motor-car movement will be pleased to learn that on Monday the French Automobile Club was authorised to re-open its doors. The step is stated the result of a visit paid to President Loubet by Baron van Zuylen.

**Trade Announcements.**

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797.

LARGE STOCK of Motor-Car Tricycle Frames, with all latest improvements; two band brakes, cased in pattern axle, free chain, hubs and pedals, and all connections ready to attach to motor; electric connection in handle-bar; highly enamelled and plated.—Brown Brothers, Ltd., Great Eastern Street, London, E.C.

MOTORS ON HIRE.—Daimlers, Panhards, Benz, New Beestons, etc., in good order, by day, week, or month.—The Yorkshire Motor-Car Co., Ltd., Bradford.

**SALES, WANTS, Etc.**

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

FOR SALE.—Electric Victoria, quite new, made by Thrupp and Maberly of London, the motor by Immish & Co.; in first-class condition. Price £200. For further particulars and order to view apply to C. A. Goffin, Minehead, Ouseley Road, Balham, S.W.

FOR SALE.—Mytholm Motor-Car, double cylinder, 3-h.p. petrol motor, three speeds, ball bearings, rubber tires, £110. Photo, three stamps. Also 8-h.p. two-cylinder Mytholm Petrol Motor, complete with tube ignition and carburettor, £55. 3-h.p. two-cylinder Mytholm Petrol Motor, £32.—Brown & Buckton, Hipperholme, Halifax.

WANTED to Hire, by a Dental Practitioner in Ireland, a small Motor-Car or Tricycle, suitable for two persons. De Dion preferred.—Apply Box 101, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

FOR private use or passenger traffic.—Benz Phaeton with box seat for driver, handsome carriage, leather hood and aprons; seat six; been little used; in good order; will accept £195.—Apply by letter to H. S. Eyre, 6 Grosvenor Gardens, St. Leonards-on-Sea.

3 H.P. COVENTRY MOTETTE, carry two persons, English manufacture; cost £150, will accept any reasonable offer; good condition.—C. Watson, 97 Upper Stone Street, Maidstone.

MOTOR-CARRIAGES, deliverable directly, system Panhard, Benz, Peugeot, Mors, Decauville, Cambier, Rochet, Silmeider; tricycles.—Apply to Géo. de la Nézière, 51 rue Vivienne, Paris.

WANTED.—Situation as Driver and Repairer of Motors. Seven years' experience in making, driving, and repairing explosion engines and cycles.—E.W. Dewbury, High Street, Ware.

FOR SALE.—Beeston Motor-Tricycle, almost new; owner going in for Motor-Car. Will accept £55.—Nesham, 25 Bright Street, Middlesbrough.

FOR SALE.—Benz 5-h.p. Dog-Cart, nearly new; written guarantee given as to condition; many improvements added.—Price and full particulars to Box 72, *The Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

BOLLÉE, in good order, £60; Motor-Tricycle, tube ignition, £50. Both fast machines.—Owner, 83 Cautsfield Street, Liverpool.

FOR SALE.—Benz Ideal Car, only used a few weeks. Can be seen by appointment at Maidstone or Richmond next week.—A. Clark, Soham.

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# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, JUNE 23rd, 1899.

[No. 16.]

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## COMMENTS.

### The Agricultural Hall Exhibition.

By the time our next issue is published, arrangements will be approaching near completion for the opening of the Motor-Car Exhibition at the Agricultural Hall. The ground floor is fully let, and we shall have at least twenty-five additional exhibitors to those that were to be seen at Richmond. The Agricultural Hall is an ideal place in which to hold an exhibition. It is easy of access from all points of the compass, and the exhibits will be compactly arranged and attractive in form. A first-class band will play afternoon and evening. A strong committee of the most expert "motorists" in the kingdom has been formed to arrange for motor sports and competitions every evening, and demonstrations will be continuous in the arena all day long. The "commercial efficiency" tests will start and finish daily from the Hall, and the London Motor-Van and Wagon Co. will have a fleet of vehicles for hire in the court-yard. The Exhibition will be open from 10 a.m. to 10 p.m.

### "Terrors."

Engineering seems to forget its function when it alludes to motor-cars, and ceases to remember that it is an organ representative of the industries reflected by its own name. In its last issue, commenting on the Automobile Club trials, it says: "Some of the carriages under way were simply terrors from the rattle and noise they made, and the reckless way they were driven. A great deal remains to be done before the average motor-car approaches the horse-drawn carriage simply as a pleasure vehicle; unless it be, perhaps, in the eyes of mechanical cranks or amateur engineers who desire to pose as scientific experts." The whole report, nearly two columns long, is garbled and incorrect, and the writer has not even the ability to correctly copy information when it is supplied him. He states, referring to the fifty-mile trials, that it was difficult to distinguish between spectators and competitors, but that from a list kindly lent him by the assistant secretary he found there were ten competitors. That same list was shown us, and we counted twenty-one competitors (starters); and again, the former were distinguished from spectators by having affixed to the front of their machines a number at least a foot square.

### Eight Thousand Motors.

The financial papers do not like either motors or motor-car companies, judging from the fact that rightfully or wrongfully they never lose an opportunity of attacking one or the other—yet the industry progresses. More cars are being ordered than can be supplied, and, speaking generally, people who have once ridden are usually keen on having a second ride, and if their means permit a car is ultimately purchased. One patentee has such confidence in the future that he is placing orders to the extent of eight thousand motors, all to be supplied before the end of 1900, and

engineering firms of repute are pleased to accept from the same patentee orders to the extent of a thousand motors each!

### Unfortunate.

THE Rev. Mr. Grindle, of Cold Ash Vicarage, Newbury, has been writing to a local paper suggesting that there is need for some special regulations concerning motor-cars. His reason for thus writing is that one day last week his daughter nearly had a serious accident through a motor-tricyclist not stopping, when signalled to, until he was close upon her. The horse bolted, but fortunately no harm was done. The same day a motor suddenly turned a corner while the lady was still on horseback, and this time she was thrown, but escaped without injury. The Rev. Mr. Grindle bitterly complains, as a heavy ratepayer, that the roads cannot be used with safety by horse-riders, and charitably calls upon the County and District Councils to make stringent bye-laws and to see that they are enforced. Mr. Grindle seems to forget that possibly those who ride motor-cars pay rates, and that some of them may pay even heavier rates than he does, also that it strikes motor-carists that people who ride untrained horses are also somewhat of a nuisance; and it is not always the owner of a thoroughbred who gives the most trouble. In fact, in many instances it is not the horse at all that is nervous; the horse is mostly curious. It is the driver or the rider who frightens the horse by communicating his own fear.

### Falkirk Motor-Car Co.

At the last meeting of the Stirling County Council the Clerk stated that as to the speed of the motor-cars enquired into at last meeting he found from the Highways Act of 1896 that the limit was fourteen miles an hour, but the Local Government Board might make other regulations. Mr. Hunter said if the Motor Car Company's business was managed in the future as it had been during the last month he would not complain. Everybody seemed satisfied that the few words he had spoken at the last meeting had done a great deal of good.

### Road Maps.

MR. HARRY R. G. INGLIS, whose "Contour" road books have previously been noticed in these columns, has now brought out capital maps of the Brighton and Ripley roads, each 20 in. long, but folded in book form and so arranged that fourteen miles are exposed to view at any opening. The lettering is exceedingly clear, and the contour plan is placed by the side of the ordinary map, so that the two references to any particular place can be seen at a glance. Messrs. Gall and Inglis, who publish this very convenient road map for motorists and cyclists, also send their Bath road and Southampton road maps, likewise compiled by Mr. H. R. G. Inglis, whose knowledge of British roads is becoming extensive. In both of these the same conscientious regard for accuracy is observable, the gradients being given as fully

as in the case of the Brighton and Ripley roads. The road map to Southampton is extended through Christchurch and Bournemouth to Poole, thus including some of the best scenery in the New Forest. In addition to this map and contour plan the gradients at various distances are given in the letterpress, which has also a description of the road and a brief summary of the objects of interest on the way.

### III-Luck.

THE big Daimler Post Office vans seem fated to have ill-luck, and it was certainly unfortunate that one should have been allowed to "run amuk" while in charge of a drunken driver. What might have happened had there been much traffic it is serious to think about, but we are glad to state the only damage done was the smashing of a large plate-glass window. The van had its front board cracked, but was otherwise uninjured, and was driven back to its depôt the same night. The driver was lightly let off with 40s. or a month.

### "Get Off."

A CORRESPONDENT writes to an Edinburgh paper complaining that, being in a hurry, and seeing a motor-car with only four occupants in it standing at the side of the road, he jumped in, and was considerably hurt at being rudely told to "get off." He thought the car was one of those plying for hire between the Haymarket and Salisbury Road. The suggestion is that the lettering at the sides on the public vehicles should be bolder.

### M.P.'s and Motor-Cars.

THE motor-car has invaded Palace Yard, and to the weary M.P. the chance of a ride on a friend's automobile will have an exhilarating effect. Several legislators saw the "meet" on Saturday last, and on Tuesday evening a popular Scotch Member motored to the House. Sir Samuel Montagu, M.P., has also favoured the latest form of road locomotion, he being the possessor of two dainty cars, the envy of the less wealthy legislators who keep to the cab or the cycle. Mr. William Allan, the poet-Parliamentarian, may also yet be found among the motor-carists of St. Stephen's.

### The "Lifu" at Work.

SURELY one of the busiest and most industrious vehicles ever constructed is the "Lifu" wagonette. On the Whitsuntide tour of the Automobile Club it was always the smartest and tidiest vehicle; always ready for the start, and invariably did its journey without trouble. Since then it has been employing its leisure by making frequent trips between London and Portsmouth; while at Richmond it must almost have restored equilibrium to the coffers of the Show Committee. The number of journeys taken out of the ground must, we imagine, have totalled nearly a hundred. The charge for passengers has been one shilling per head, and the car has not only been full, but at times passengers have had to wait their turn. The "Lifu" is English in construction, and, typical of its country, suffers from thirst, and takes an occasional sixty-gallon drink—but it is a wonderful vehicle.

### A Sad Accident.

It appears that the Altrincham disaster arose from the breaking of a faulty casting in connection with the steering. The car was an old one, and had been in use for a long time, not having been overhauled for many months. It was kept in constant service, and was reputed to have done the work of two horse-drawn vehicles. Not only the body of the vehicle but the hind wheels were burnt

as well. The car fell sideways on to its nose, then turned into a ditch, burying the driver underneath. The driver, although burnt and badly bruised, is doing well.

### Richmond Awards.

AT the moment of going to press we received the following wire from Mr. Johnson, Secretary of the Automobile Club:—"Following awards made: Gold medals to Daimler, Lanchester, Delahaye, Thornycroft, Motor-Carriage Supply; silver medals to Hewetson's, Daimler, Automobile Association, Motor-Carriage Supply."

A NEW firm has just been registered at Puteaux, France, under the style of Messrs. Patin & Requillart, to construct electrical motor-vehicles.

THE Sampson Engineering Company, Limited, has been registered with a capital of £5,000 in £1 shares, to carry on the business of cycle, motor-car, and accessory manufacturers, etc. The registered office of the Company is at 19 Sampson Road North, Birmingham.

WITH reference to the water-cooling tubes of Messrs. Grouvelle & Arquembourg, of Paris, illustrated and described in our last issue, we learn that the sole licence for the manufacture of the same in Great Britain and Ireland has been secured by Messrs. Lawrence & Co., of 132 Latimer Road, London, W.

As a motor-carriage was proceeding towards Victoria Station on Friday morning last, when outside the Grosvenor Hotel, Buckingham Palace Road, S.W., a horse attached to a brake containing several ladies and gentlemen took fright, and dashed into the motor-car, smashing the front of that vehicle. One of the occupants of the brake, Mrs. Nightingale, of Notting Hill, was thrown out and so severely injured that she had to be removed to Westminster Hospital, where she was found to be suffering from concussion of the brain.

THE Newcastle and District Motor-Car Co. has just been registered with a capital of £10,000, in £10 shares, to carry on the business of motor-car proprietors, carriage, cab, omnibus, tram, coach, perambulator, bath-chair, and cycle manufacturers and dealers, electric and general engineers, iron and brass founders, tire manufacturers, rubber merchants, etc. The subscribers are: John Duncan, 22 Blackett Street, Newcastle, wine and spirit merchant; J. Daglish, 44 Percy Gardens, Tynemouth, brewer; F. Graham, Bank Chambers, Newcastle, iron and steel merchant; F. G. Scott, Queen Street, Newcastle, engineer; W. Bird, 8 Latimer Street, Tynemouth, engineer; T. W. Rowe, Ridley Street, Newcastle, merchant; J. A. Williamson, St. Nicholas Chambers, Newcastle, solicitor. The number of directors is not to be less than three nor more than five; the subscribers are to appoint the first; qualification, £100; remuneration as fixed by the company.

A MOTOR-CARRIAGE trip of 700 miles, from Cleveland, O., to New York has just been completed in less than 4½ days. The trip was made by Messrs. Alexander Winton and Charles B. Shanks, of Cleveland, in a Winton petroleum-spirit motor-phæton. The vehicle complete weighed 1,800 lb., and it was fitted with large pneumatic tires. The start was made from Cleveland at 7 a.m. on May 22nd, and Buffalo, 218 miles away, was reached by 9.15 p.m. of the same day. Between Buffalo and Freeport the front axle broke, and another was received from Cleveland and put in place. From Freeport to Syracuse, 80 miles, the running time was 8 hours; the 147 miles to Albany took 13 h. 55 m.; the remaining 161½ miles from Albany to New York required a little less than 11 hours. The 707½ miles were made in 4 d. 11 h. 45 m. running time, an average of 6.56 miles per hour. The roads from Cleveland to Buffalo were fairly good, but between Buffalo and Albany they were heavy, and no great speed could be made. At times on the trip a speed of 30 miles per hour is stated to have been attained.

# The Automobile Club Show.

## THE OPENING DRIVE.

A BRILLIANT contrast between the old and new methods of fashionable locomotion on ordinary roads was presented to a roving gathering of pedestrian club-men, M.P.s, and others in the neighbourhood of Whitehall, London, on Saturday last. In front of the great hotels in Northumberland Avenue many coaching parties assembled shortly before eleven o'clock, and they went on their way in splendidly horsed coaches, and to the accompaniment of the horn which has been associated with such equipages from time immemorial. Round the corner another gathering, even more representative of the higher aspect of social life and fashionable precedence, was assembled to journey to Richmond by means of mechanical power, the hooter providing the warning sounds and the Automobile Club giving a prestige that raised the motor-car high above ordinary commercialism and business. For the appearance of the ladies revealed the fact that this was no ordinary assemblage, and as the procession in which they were conspicuous passed the clubhouse shortly after eleven o'clock the aristocratic character of the event was obvious.

Lord Rothschild, Lord Suffield, and Lady Muriel Paget were among those who drove on motor-cars. The Earl of Rosse, the Hon. Clare Parsons, the Hon. Gerald Lascelles, and Mr. F. R. Simms were on a Canstatt Daimler; Sir Francis Jeune, Lady Jeune, and Miss Stanley were on a Daimler, as was also the Hon. J. Scott Montagu, M.P., with Lady Cecil Scott Montagu of Burleigh, Mr. Ernest Beckett, M.P., and Mr. Lionel Phillips; the Hon. C. S. Rolls drove Lord and Lady Llangattock; the Hon. Evelyn Ellis, with Mrs. Evelyn Ellis and General Sir Arthur Ellis, were on a Panhard car; Sir Richard Paget and Mr. Roger W. Wallace, Q.C., on electric-cars; and Mr. and Mrs. J. R. Hargreaves were on their twin Daimler; the Duke of Newcastle and Lord Henry Pelham Clinton were on a Delahaye car; Lord Loch on a Daimler; the Hon. Alfred Mulholland and Mrs. Mulholland on a Panhard, as were also Mr. and Mrs. Weguelin, and Mr. Alfred Bird; Sir David Salomons and Mr. A. Barr were on a Peugeot car, with a seat for the attendant on the lower front of the splashboard; Mr. Roger H. Fuller and Mrs. Fuller were on a Daimler car; a 5½-h.p. Iveagh phaeton contained Mr. John S. Gretton, Mr. and Mrs. Max Lindlar, Miss Teresa del Riego, and M. Ernest Cuenod; Mr. C. Friswell drove the Mors car that won the Paris-Amsterdam-Paris race; Madame Zacharias was on a Hercules; and General Sir Arthur Willis, Captain and Mrs. Langrishe, the Hon. J. H. Berkeley, Mr. Lionel Phillips, Mr. Arthur Mulliner, and Mr. Critchley were among others whom we noticed.

A few minutes after eleven the start took place, a string of seven vehicles leading the way. Thirteen others followed in succession a few minutes later, so rapidly that it was impossible to distinguish all the occupants, some of whom had arrived at the last moment, but among those who had previously signified their intention to be present, and whose names do not appear in the foregoing list, were the Earl of Shrewsbury, Sir W. Neville Abdy, Bart., Mr. W. Carlisle, M.P., Professor Boverton Redwood, and Mr. Frank Butler.

Everything started well, without hitch or mishap, the lessened vibration and noise, as compared with earlier meets, being one of the most noticeable features. Just as the last car turned into the Horse Guards Avenue one of the vehicles of the London Steam Omnibus Company came round the corner, and the crowd, which, though select had never been large, having gazed on this demonstration of "commercial possibility," dispersed. Mr. William Allan, M.P., who had been observing the various vehicles as critically as if they

had contained Belleville boilers likely to form the basis of another criticism on the navy, was among the last to leave the scene; and then Whitehall resumed its normal aspect while the procession of motor-cars wended its way through Trafalgar Square, Pall Mall, St. James's Street, Piccadilly, Hyde Park, Queen's Gate, Brompton Road, Redcliffe Gardens, Fulham Road, Putney Bridge, Norrey Road, Manor Road, Kew Road, thence to Richmond.

The opening ceremony duly took place in the midst of a large assemblage of members and friends. In addition to a number of horse-drawn vehicles, some seventy to eighty motors were on the ground. The weather was of the brightest, and remained so up to the time of going to press. During the week various races were held between a trotting horse and motor-tricycles, etc., and efforts were made to keep matters lively. The cinder track was badly cut up the first day, and afterwards the grass track was used. The attendance during the week did not come up to expectations. Below is a full description of exhibits.

## THE EXHIBITS.

One of the first exhibits to attract attention on entering the Exhibition is that of the Motor Manufacturing Co., Ltd., of 47 Holborn Viaduct, E.C., and Coventry. The display is of a very varied character, comprising no less than five distinct types of vehicles. First we find motor-tricycles fitted with a 1½-h.p. English-built motor of the De Dion type, one of the machines shown having a frame adapted for a lady. A two-seated motor-quadracycle is also displayed, while the second type is to be found in a three-seated Bollée voiturette adapted to seat two persons in the front, with the driver at the rear. Class No. 3 is to be found in the Panhard-Daimler type vehicles fitted with a 5½-h.p. motor on a standard frame. Of these several are shown, ranging from a neat four-seated dog-cart to a nine-seated *chairs-a-banc* of the kind which is now being employed for public services in various parts of the country. In this class must also be included two motor parcels vans capable of carrying loads up to close upon one ton. Type No. 4 is to be found in the Sandringham phaeton. This is a four-seated vehicle of the type introduced towards the end of last year. It is fitted with a 6 h.p. Iden horizontal motor, four forward speeds and one reverse motion being available. The principal novelty at this stand is, however, the Princess two-seated sociable car. As this vehicle was illustrated in our issue of May 26th, it is unnecessary to describe it at length. It may be mentioned, however, that the motor is of the two-cylinder horizontal type of 4½ h.p., with tube ignition and water-jacket. The power is transmitted from the motor shaft to the counter shaft by spur wheels and from the latter to the rear road-wheel axle by a central single chain drive. Three forward speeds and two reverse motions are provided, while a special feature is the provision of a governing device by means of which when the car is at rest the motor may be kept in motion, but slowed down to the extent of but one explosion per minute. The vehicle, which weighs complete only 8½ cwt., is provided with a detachable splashboard, in place of which a small additional front seat can quickly be fitted. The new car is very handsomely finished, and altogether is a vehicle which should rapidly attain popularity in the automobile world.

Although at first glance the vehicles exhibited by the Daimler Motor Co., Ltd., of Coventry and Shaftesbury Avenue, London, W.C., would seem to show but little change from those of a year ago, yet closer inspection brings to light that a good many modifications and improvements have been adopted with the view of increasing the efficiency of this well-known type of motor-vehicle. Of the standard 5½-h.p. type six vehicles are shown, viz., a "Universal" sporting car,

convertible to dog-cart, phaeton, or wagonette, a Cranford wagonette, two Rougemont wagonettes, a "Marseilles" phaeton, and a parcels delivery van capable of carrying a load of 15 cwt. Most of the foregoing vehicles are provided with four speeds, ranging from four to sixteen miles per hour, together with a backward motion. Stronger gearing is now being fitted into the vehicles, while larger bearings generally are being employed. The Daimler Company are also now fitting their vehicles with a water-cooling coil, by the use of which the amount of water to be carried for cooling purposes is reduced to four gallons, sufficient, the makers state, for an ordinary day's run, without it being necessary to refill the water tank. The vehicles of this Company which have undoubtedly attracted most attention during the week are the new light two-seated carriages illustrated in our issue of the 9th inst., to which we refer our readers for further particulars. One of these is fitted with a 4-h.p. motor, and the other with a motor capable of working up to  $5\frac{1}{2}$  h.p. The latter car weighs complete only 9 cwt., and is fitted with two speeds, eight and sixteen miles per hour, a hill-climbing gear giving four miles per hour, and a reverse motion. The Daimler Co. also exhibit two huge G.P.O. delivery vans and a six-seated Siamese phaeton. The latter is an interesting vehicle; it is adapted to carry six persons, and is fitted with a four-cylinder motor of  $11\frac{1}{2}$  b.h.p. Four speeds are provided, the maximum being twenty-eight miles per hour. The steering is controlled by means of a hand-wheel, the shoe brakes being also actuated in the French style by a hand-wheel and screw gear. On this car, we also note the employment of a neat patent-leather cover to the driving chains. The Daimler Co. is also, we understand, now arranging to build large wagonettes and *chairs-a-bancs* to accommodate from sixteen to twenty passengers, the vehicles being specially adapted for public motor-car services.

So large and varied is the exhibit of the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, London, W., that it is difficult to know where to begin and where to end. It is simply impossible to attempt to fully describe all the vehicles on view, the brief epitome given in the catalogue alone occupying nine pages. We must confine ourselves, therefore, to a mere mention of the better known types, and to a brief description of the newer vehicles, deferring to a later date a more complete account of at least one of the new types of cars shown at Richmond for the first time. Dealing first with motor-tricycles, two types are shown—the Autocycle (a German-made machine), and the French-made Barrière. In addition to the ordinary tricycle, two new forms of the latter are shown, one arranged, with a longer base than usual, as a parcel carrier, and one, a motor-sociable-tricycle, arranged to seat two riders side by side. Trailers for motor-tricycles are shown in a great variety of forms. Coming now to petroleum-spirit motor-cars, the first to be noticed is the "Tourist," a Belgian-made, three-wheeled, two-seated vehicle. The motor is of  $3\frac{1}{2}$  h.p., with radial discs for cooling, and electric ignition. Three speeds are available, the maximum being about twenty miles per hour. The "Orient Express" type of car is shown in three forms—the Duc, the Victoria, and the Vis-a-vis, the two first-named seating three and the latter four persons. The "Duc," which was illustrated in our issue of April 21st last, to which we refer our readers for further particulars, is fitted with a 4-h.p. motor, the Victoria ditto; while the Vis-a-vis has a motor capable of working up to 6 h.p. The ignition is magneto-electrical, the cylinders are water-cooled, and the transmission is by means of belts with jockey tighteners. The "Orient Express" cars, which are of German construction, are exceedingly elegant in design, and by reason of their relatively low cost should soon become very popular. Several of the well-known Mors four-seated vehicles are shown, as also one of the new Mors two-seated 4-h.p. "Ducs," illustrated and described in our issue of March 10th last. The productions of Messrs. Ducroiset, of Grenoble, France, are represented by a twelve-seated

"Hercules" wagonette. This car is fitted with a 15-h.p. horizontal double-cylinder motor, located in the front portion of the car. The ignition is electrical, and the cylinders are water-jacketed. The transmission is by means of belts, which normally run slack and are tightened by jockey pulleys. Three forward speeds—6, 12, and 20 miles per hour—and one backward motion are provided. The car appears to be built on sound lines, and seems likely to fulfil the requirements of any one needing a motor-vehicle of so large a character. Quite a new car to this country—in fact, the one shown only arrived from France a day or two before the Exhibition opened—is the "Silent" car, made by Messrs. Gobron & Brillié, of Paris. It is claimed that these are the first cars driven by a petrol motor, which are absolutely free from vibration. The frame of these vehicles is built up of tubes, and the body attached through the medium of indiarubber springs, in addition to the ordinary plate springs. In the motor there are two vertical cylinders; each cylinder has two pistons, the explosion taking place between each pair. The two lower pistons are connected by the rods to the cranks in the usual way; the connecting rods of the two upper pistons are bolted to the crosshead, at the extremities of which are the two double connecting rods, which work on the cranks, fixed 180 degrees from the others. There are thus in this motor four pistons, and in effect four cylinders, four cranks, and four connecting rods. Notwithstanding this large number of moving parts the motor is stated to run remarkably smoothly, this being due to the great care that has been taken in the design so as to secure absolute balance as far as possible, there being an impulse to the motor shaft every revolution. The admission and exhaust are operated in the usual way, but a special device is used to graduate the admission of petrol to the carburettor. The cylinders are water-jacketed, and the water circulated by means of a small plunger pump. The hot water passes through a radiator coil in the front of the car. The water tank holds about 4 gallons. As regards the gearing there are three forward and one astern speeds. The top speed is about 20 miles. These vehicles are good hill climbers, the Chanteloup being surmounted at an average speed of 5·8 miles per hour.

The motor, which is of 6 h.p., runs normally at 700 revolutions per minute. Three forward speeds, ranging up to twenty miles per hour and one backward motion are provided. The transmission is effected by gear wheels, there being two intermediary shafts, a friction clutch being arranged on the fast one, the connection between the second intermediary and the rear road-wheels being effected by chain gearing. The car, which is very elaborately and comfortably finished, takes the form of a five-seated wagonette. It comprises so many novel features as regards both the motor and the transmission gear that we propose to refer to it again at greater length in a subsequent issue.

Other exhibits comprise the Koch heavy oil motor-phaeton, illustrated and described in our issue of March 17th last, a Cambier dog-cart, a 16-seated 15-h.p. Benz brake, a couple of Vallée cars, a Lynx dog-cart, and a Lynx light parcels van, pressure on our space preventing us from doing more than briefly mentioning their names. The Automobile Association is also showing an "Imperial Star" 2-seated carriage built by the Star Motor-Car Co., of Wolverhampton, the car being an English facsimile of the well-known Benz carriages. The Association had also hoped to be able to show a De Dion 2-seated 4-wheel voiturette, the Swan (Elieson) electric dog-cart, and a Waverley Stanhope, the latter being a new electrical car of American construction, but at the time of writing (Tuesday morning) these had not put in an appearance.

In addition to vehicles, the Automobile Association display a large range of motor-car and cycle accessories, including magneto-electric ignition devices, carburettors, batteries, etc. They have also taken up the agency for the Dorey petroleum-spirit motor, illustrated in our issue of April 21st last, of which several sizes are shown. They are



also exhibiting a new instantaneous steam generator for motor-cars, designed by Mr. J. H. Knight, of Barfield, Farnham. The generator is constructed to burn either coke or oil, and will, it is claimed, evaporate 70 lb. to 75 lb. water per hour, equal to 3 or  $3\frac{1}{2}$  i.h.p. with a good compound engine. The boiler consists of a coil of steel tubing heated in a suitable furnace. To obviate the choking of the tubes, Mr. Knight fills them with small balls which can move freely in the tube for a short distance. These, by checking the flow of water through the lower coils of the tube, cause, it is asserted, the steam to come off very quietly, while, as the balls are in constant movement, all scale and deposit is, it is claimed, cleared away.

The popular little Benz motor-cars are kept well to the front by Messrs. Hewetsons, Ltd., of Dean Street, Oxford Street, London, W., who have about a dozen cars of different types on view. It is difficult to say much that is not already known of these cars. It may be mentioned, however, that the 1899 type of "Ideal" two-seated car is fitted with three forward speeds, including a hill-climbing gear, by means of which it is claimed the vehicle can readily mount gradients of 1 in 4. The various details of the car have also been modified and strengthened as experience has shown to be necessary, the result being a little carriage which is well intended to maintain the already great popularity of this firm. One of the cars shown is provided with a detachable front seat so that it can readily be adapted to accommodate three persons. A Benz dog-cart is also on view. This is capable of seating four passengers, and is fitted with a double-cylinder motor of 5 h.p. Fitted with three speeds forward and one astern, this car will, it is claimed, maintain an average speed of eighteen miles per hour, and mount gradients of 1 in 6. Messrs. Hewetsons have also on view a large Benz brake capable of accommodating ten persons. The mechanism of this car is on the same lines as the other Benz vehicles, the counter-shaft being belt driven, with three forward speeds and one backward motion. The motor of this vehicle is a double-cylinder one, capable of working up to 8 h.p.

Another large stand is that of the International Motor-Car Co., of 15 High Road, Kilburn. It includes, of course, a number of their well-known little International cars, which are now being fitted with petroleum-spirit motors of  $4\frac{1}{2}$  h.p., of English make, and a crypto gear, which enables them to mount even the steepest of hills. This Company have also recently adapted these cars to seat three persons, by arranging an additional seat in place of the ordinary splash-board; the seat is so fitted that it can readily be removed and the splash-board re-attached when desired. A car on the stand which has attracted considerable attention during the week is a five-seated Parisian Victoria, built in Paris to the order of Baron de Zuylen de Nyvelt. The car, the carriage-builder's portion of which is of a high-grade character, is fitted with a two-cylinder Benz motor, capable of working up to 9 h.p. The transmission gear is also of the Benz type, three forward speeds and two reverse motions being provided. Another car which is claimed to be suitable for public motor-car services is a French-built brake, on the Benz system, capable of accommodating fourteen passengers. The motor is of the two-cylinder petroleum-spirit type of 12 h.p. The transmission is effected by means of belts; three forward speeds, including a hill-climbing gear being provided. The cylinders are water-jacketed, a double water tank, a circulating pump, and a water-cooling coil being provided. The wheels are fitted with rubber tires, while brakes of the Lehut type are arranged to act on the hubs of the rear wheels. The International Co. are also showing a

light parcels van fitted with a 3-h.p. Benz motor, claimed to be capable of carrying a load of 3 cwt. at speeds ranging from three to sixteen miles per hour, and a new Victoria. The latter, which has seating accommodation for five persons, is provided with a single-cylinder motor of  $7\frac{1}{2}$  h.p. The transmission gear is arranged to give three forward speeds and one reverse motion, a clutch mechanism being also provided by means of which the motor can be instantly thrown out of gear.

A car which, although it has been on the market for some time in France, where it is built, but which is new to this country, is the "Delahaye," exhibited by the Delahaye Motor-Car Co., of Donington House, Norfolk Street, London, W.C.. The vehicle on show at Richmond, which has come in for a large amount of attention during the week, is a four-seated phaeton (Fig. 1), a detachable seat being also provided so that it may accommodate five persons. The motor is a two-cylinder one of 8 h.p.; it is of the horizontal petroleum-spirit type, with water-jacket and electrical ignition. The transmission of the power is effected by means of belts to an intermediary shaft, three forward speeds and one astern motion being provided. A hill-climbing gear is also fitted, by means of which gradients of one in six can, it is claimed, be mounted. From the intermediary shaft to the rear road-wheel axle the power is transmitted by the usual driving wheels and sprocket chains. The cylinder-cooling water-circulation is maintained by a pump, a special condensing coil being arranged under the fore part of the carriage. A feature of the Delahaye car is that the speed of the motor is not regulated as desired by the electrical ignition device, but by varying the quality of the explosive mixture allowed to pass to the explosion chamber, the control being by means of a small foot pedal. The road

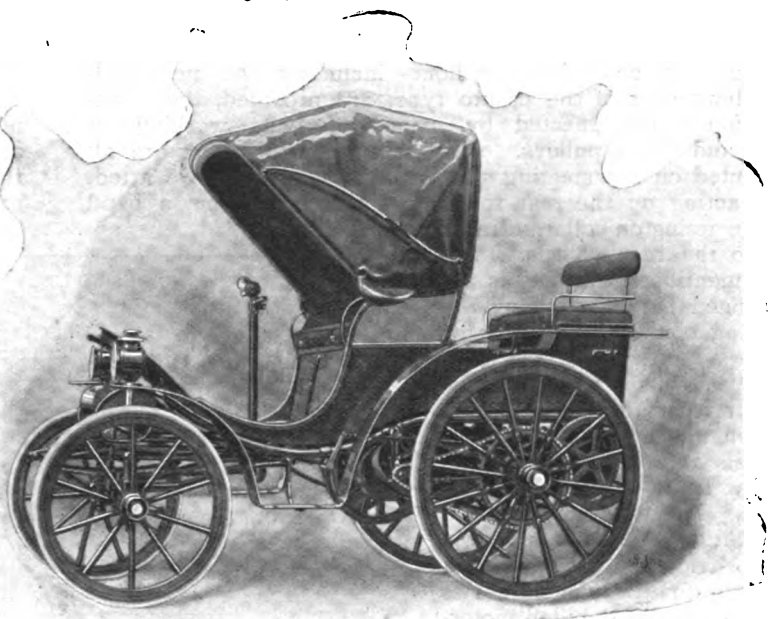


FIG. 1.—THE DELAHAYE PHAETON.

wheels have wooden spokes, and are fitted with stout pneumatic tires. The steering is of the ordinary type, while as regards brakes three are provided—band brakes on each of the rear wheel hubs, and a band brake around the differential gear. The car, which can attain a maximum speed of twenty-seven miles per hour, weighs complete about 19 cwt., the frame being built of steel tubing.

The main feature of the exhibits of the Southern Motor-Car Co., of 59 Brixton Road, London, S.W., is the "Georges Richard" light two-seated petroleum-spirit motor-carriage known as the "Duke" (Fig. 2). The car, which has a neat and attractive appearance, is French built, and is very much on the lines of the well-known Benz carriages so far as the motor and power-transmission mechanism is concerned.

The motor is of the single-cylinder type, capable of working up to  $3\frac{1}{2}$  h.p. It is located in the rear portion of the vehicle; its normal speed is 750 revolutions per minute, but it may be varied from between 300 and 1,200 revolutions by means of a

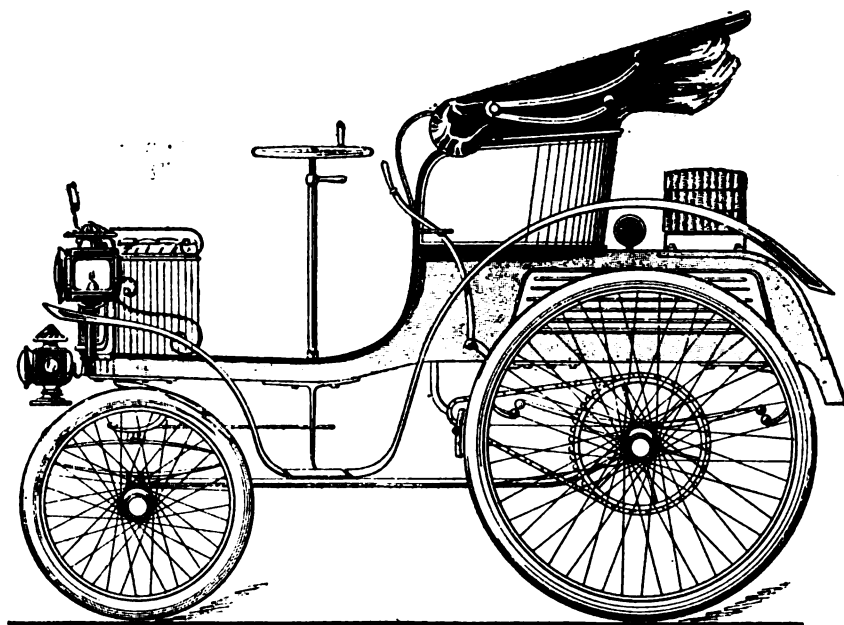


FIG. 2.—HE "GEORGES RICHARD" DUKE CAR.

button controlling the quantity of carburetted air admitted to the explosion chamber and also by advancing or retarding the electrical ignition. The cylinder is water-jacketed, a series of tubes for cooling the heated water being contained in the rear portion of the body. Three changes of speed—5, 12, and 20 miles per hour—including the new hill-climbing gear of the crypto type, are provided, the transmission being effected by means of belts working on fast and loose pulleys. The speed control-levers are all mounted on the steering standard. Two brakes are fitted, one acting on the rear road-wheel tires, and one, a band brake acting on collars attached to the rear wheels. The last-mentioned brake is so arranged that when applied the driving belts are at the same time shipped on to the loose pulleys, thus disengaging the motor from the power transmitting mechanism. The road-wheels are of the suspension type, fitted with pneumatic tires. The Company are also exhibiting a De Dion  $1\frac{1}{2}$ -h.p. motor-tricycle, a De Dion motor-quadricycle for two persons, and a Papillon motor-tricycle, while in addition they have on view a large range of motor-cycle and motor-car accessories, such as horns, tool bags, dry batteries, mudguards, etc., etc.

La Société des Voitures Automobile des Etablissements Decauville Ainé, 13 Boulevard Malesterbes, Paris, exhibit half a dozen of their voiturettes (Fig. 3), which have become very popular in France, and which are now being prominently brought before the notice of the English automobile world. The motor is of the petroleum-spirit type on the lines of the well-known De Dion; it is fitted under the rear portion

of the vehicle, and is enclosed in an aluminium casing. It comprises two cylinders, and is capable of developing up to 3 h.p. Electric ignition is adopted, while the cylinders are cooled by means of a series of radial discs fitted around them.

Two oil-storage reservoirs, with one of which the carburettor is combined, are provided, their capacity being 17 litres, or sufficient, it is stated, for a run of 150 kilometres. The cranks are set at an angle of  $180^\circ$  to each other. The ignition of the charge in each of the two cylinders is effected by means of a single cam. The starting and stopping of the motor is affected by means of a little hand wheel on the right, which controls a small bevel wheel gearing with a similar bevel wheel on one end of the motor-shaft. The power is transmitted from the crank shaft to the rear road-wheel axles through bevel gearing, two rates of speed being provided, although a three-speed gear is now being fitted to some of the cars. Intermediary speeds can be obtained by advancing or retarding the electrical ignition. The front portion of the carriage is connected to the front wheels by a special arrangement of springs. A chest at the front, which also forms a seat for a child, contains the accumulator, the induction coil, and a small lubricating oil tank capable of holding 5 litres. The frame of the carriage is built up of steel tubing. The wheels, which are all 27 in. in diameter, are of the cycle type fitted with pneumatic tires. The steering is effected through a handle-bar of the bicycle type, on one branch of which a commutator is fixed to make or break the electrical circuit, and so control

the engines. The over-all length of the carriage is  $7\frac{1}{2}$  ft., the width 4 ft., while the weight is about  $4\frac{1}{2}$  cwt. Ample brake-power is provided, there being a double band-brake on the differential gear, and band-brakes working on small drums fixed at each end of the rear axle. A peculiar feature of the vehicle, and one which is, we think, rather a drawback, is that the whole of the transmission gear is open to view at the back, and in the front it is protected only by plaited cane work. At the same time the car is of an attractive appearance. One of the vehicles exhibited is arranged as a light parcel carrier, in addition to

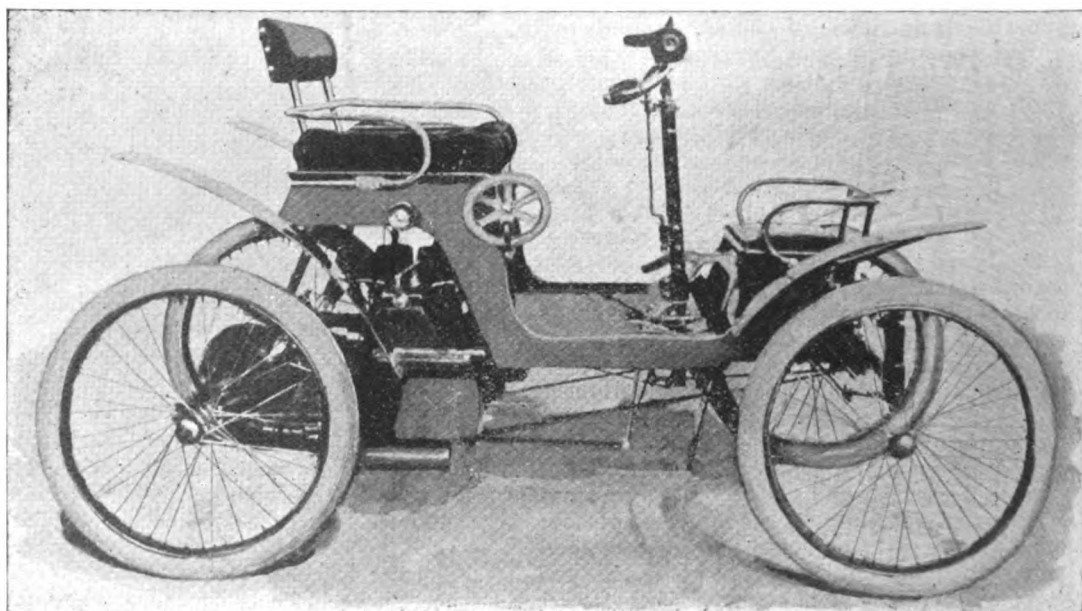


FIG. 3.—THE DECAUVILLE VOITURETTE.

having accommodation for [two persons, while] another is arranged with an additional seat located over the motor and transmission gear at the rear.

Messrs. Friswell, Limited, of 18 Holborn Viaduct,

London, E.C., have a large exhibit of motor vehicles, and motor cycles. The former comprise cars of the well-known Mors, Benz, Hurtu, and Decauville types, and the latter are of Messrs. De Dion and Bouton's construction. One of the Benz cars on view is fitted with a detachable coupé body, of which Messrs. Friswell are making a speciality. Although the coupé presents a somewhat odd appearance, there is no doubt that for those who use their cars in all weathers it is a convenience. A novelty so far as this country is concerned

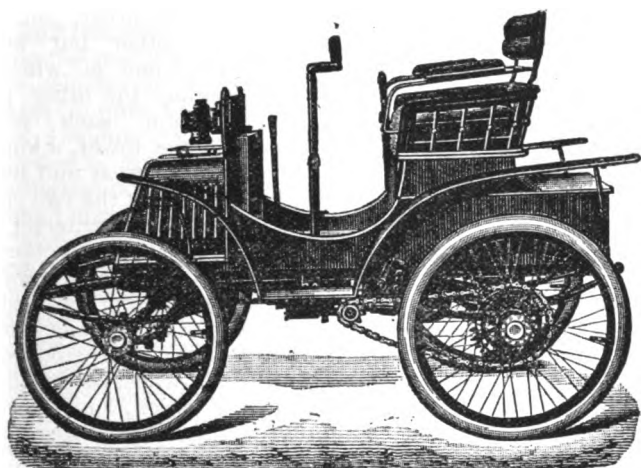


FIG. 4.—THE ELAN VOITURETTE.

is the "Elan" two-seated carriage, a French-built car of neat design (Fig. 4). The motor is of the vertical petroleum-spirit type; it comprises two cylinders, with electrical ignition, and is capable of working up to 3 h.p. (Fig. 5). For cooling purposes, radial discs to the cylinders are relied upon, aided by a small fan driven off the motor, which is located in the front portion of the car. As regards the transmission gear, in line with the motor-shaft, and connected with it by a friction-clutch

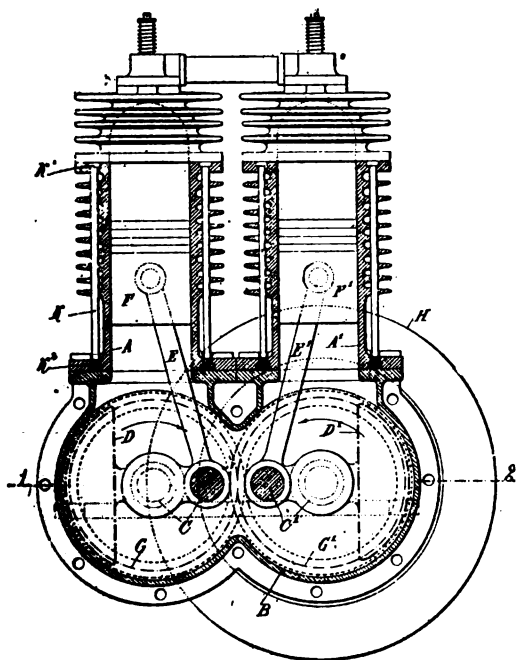


FIG. 5.—SECTION OF ELAN MOTOR.

working inside the fly-wheel, is a variable speed gear shaft, suitably enclosed. Four forward speeds—6, 12, 24, and 35 kilometres per hour—and one backward motion are provided, all controlled by a single lever within convenient reach of the driver. From the variable speed shaft the power is transmitted through bevel wheels to the differential shaft, and from the latter to the rear road wheels through the usual sprocket wheels and chains. Three brakes are provided, a

band brake on the differential shaft and shoe brakes on each of the rear road wheels. The wheels are of the tangent-spoke type, fitted with pneumatic tires, and running on ball bearings. The weight of the carriage complete is a little over 6 cwt. Messrs. Friswell, Limited, also exhibit a large range of accessories for motor-car users.

A vehicle which has come in for a large amount of attention during the week is the Jackson "Doctor's" car of the Yorkshire Motor-Car Co., Ltd., Albert Buildings, Bradford. As we illustrated and described this car in our last issue it is only necessary to briefly refer to it on the present occasion. We may remark, however, that closer acquaintance with it bears out the fact that the car is neatly and practically designed, the only drawback being, in our opinion, that it is safely underpowered. On this point, however, the makers assure us that the car has been driven up some very stiff gradients in Bradford at a fair rate; three forward speeds—4, 9, and 15 miles per hour—are provided, the transmission being by means of belt. These normally run slack, the tension being applied by jockey pulleys, controlled by three small handles at the side of the driver. Another feature of the vehicle is that the "body" can be readily detached from the frame, and a small box van to carry about 6 cwt., which the firm are making, can be fitted in its place.

Messrs. Marshall & Co., of Belsize Works, Clayton, Manchester, are present with a couple of their English-built "Hurtu" cars. As we illustrated and described this neat and elegant car so recently as our issue of the 9th inst., it is unnecessary to further refer to them on the present occasion, except to state that they have excited general admiration. Mr. Rush, of the London Autocar Co., was in charge of the exhibit.

Our Scottish correspondent, "Brown Heather," has kept our readers very well posted as to the progress made by Stirling's Motor Carriages, Ltd., of Hamilton, N.B. The present occasion is, however, the first time the writer has had an opportunity of inspecting a Scotch-built motor-car, and without undue flattery it may be safely stated that rarely, if ever, has he seen such high-class work as is to be found in the five Daimler cars exhibited by this Company. The motor and transmission mechanism of these vehicles is of the Daimler standard type, and needs no description at this time.

The "Hamilton" dog-cart, to seat four persons, is fitted with a 5½-h.p. Daimler motor. The body of the vehicle is of varnished walnut, while the under-carriage is painted umber, lined out in straw colour. The road wheels are fitted with 2½-in. solid rubber tires. The upholstering work is in morocco leather, the whole turn-out being of a handsome kind. The next vehicle is what is known as the Miniature Tourist Car. It is fitted with a 5½-h.p. Daimler motor, and arranged to seat four persons, there being a comfortable arm-chair front seat, and two seats at the back on wagonette principle, accommodating two persons. Accommodation for baggage is provided, while the car is furnished with extra storage tanks, so rendering the vehicle, as its name implies, particularly well adapted for touring purposes. We next inspected a motor mail-driving phaeton, which is also arranged to seat four persons. This car is painted olive green, with wheels and undercarriage in vermilion, and lined out in black. It is luxuriously upholstered in green morocco, and fitted with a portable folding enamel leather hood, and will, no doubt, appeal to a certain class of automobilists. Many attempts have at times been made to produce a motor-brougham, and the Stirling Company are to be congratulated on the handsome vehicle they have produced in the "Brandon" brougham they have on view. The entrance to the brougham is arranged at the front next to the driver's seat; provision is made for two inside passengers, although two folding seats for children are also provided. The interior of the vehicle is upholstered in old gold silk plush, the body is painted black and brown, the wheels and undercarriage being grey, lined out in old gold colour. The last of the Stirling-Daimler cars to be noticed is a family omnibus to

seat eight persons. The roof of this vehicle is made detachable so that it may be readily converted into an open wagonette. The motor is of  $5\frac{1}{2}$  h.p., of the standard type, the wheels being fitted with solid rubber tires. Altogether, these cars are excellent specimens of workmanship, and have been greatly admired during the past week.

Another section of Messrs. Stirling's exhibit which has come in for a large amount of attention is the Stirling-Pennington car, two of these vehicles—a Victoria de luxe, and a neat design of four-seated vehicle—are shown. The car body of the latter is varnished walnut and is upholstered in brown cloth to match. The Pennington motor is mounted under the floor of the vehicle, the fly-wheel being fixed horizontally. Some alteration in the driving gear appears to have been made since the writer last inspected a Pennington car—the motor driving a horizontal pulley at the rear by means of a light cycle chain, the pulley being now connected to the front wheel axle by a belt in place of a rope as formerly. The road wheels are of the suspension type, shod with pneumatic tires; the rear wheels are the steerers, and are controlled by a handle at the side of the car. All the parts of the car are made on the interchangeable system, so that in case of accident repairs can be speedily carried out. Another feature of the Pennington car is that no carburettor is employed in connection with the motor, the oil being fed directly into the explosion chamber, passing on its way through the exhaust silencer and so receiving a preliminary heating. Attention is also drawn to the small amount of cooling water required. The whole of the mechanism is well protected, so that it cannot be affected by wet or mud. Ample brake power is provided, there being two independent band brakes. By switching out the electrical current in connection with the ignition device the motor is made to also act as a brake, so that the car can be quickly brought to a standstill. Altogether the Pennington car is built on novel lines and is well worthy of close inspection. Those who have not been able to do so this week will have a further opportunity at the forthcoming show at the Agricultural Hall, where, in addition to a number of these little vehicles, the Pennington Co. will also have on view a new motor-bicycle.

Messrs. Roots & Venable, of 100 Westminster Bridge Road, London, S.E., display a light car designed to carry two persons at a maximum speed of twelve miles per hour on the level, with a slower speed for inclines. It is driven by a Roots' single-cylinder motor of 3 i.h.p., using ordinary paraffin or kerosene oil. There are two friction clutches, giving speeds of four and twelve miles per hour respectively, but any speed between one mile and the maximum can be obtained. Two independent brakes are provided. The cylinder is water-jacketed; the storage tanks having a sufficient capacity for oil and water for a journey of about five hours. The countershaft is chain driven, while the connection between the countershaft and the rear road axle is also by chain gearing. A feature of the Roots' car is the water condensing coil, which consists of a series of copper tubes fitted round the fly-wheel in such a way that the latter works within the coil. Messrs. Roots & Venable are also showing their light commercial van, designed to carry a load of about one ton. It is fitted with a  $6\frac{1}{2}$ -h.p. heavy oil-motor of the firm's design. The consumption of oil in this motor for an average run of fifty miles is about  $5\frac{1}{2}$  pints per hour; the cost of a fifty mile run being about 1s. 8d. In this vehicle two clutch-speeds forward, the one of three miles and the other of ten miles per hour, and one clutch-speed backward of three miles per hour, are provided; but as in other vehicles of this firm's manufacture, the van can be driven at any speed, by graduating the friction clutches, between one and ten miles an hour.

A car at the exhibition which comprises probably more novel points than any other is that exhibited by Mr. F. W. Lanchester, of 59 Lincoln's Inn, Corporation Street, Birmingham. We are only able to give but a brief account of the new car, which takes the form of a two-seated phaeton, as the whole of the motor and transmission gear is completely

boxed in, and therefore not open for inspection; Mr. Lanchester, too, has not been very accessible, having been busily engaged running his car all the week. We were, however, able to glean from him a few of the leading details. A striking feature of the car is that, notwithstanding the small seating capacity, the motor is capable of working up to 8 b.h.p. The motor, which is arranged at about the centre of the frame, under the seat, comprises two horizontal cylinders, 5 in. diameter by 5 in. stroke, facing each other in the same line. Two connecting rods are attached to each piston. There are two cranks independent of each other, and two fly-wheels also independent of each other but keyed respectively to the two crank shafts, one of which is 3 in. above the centre line of the engine, the other 3 in. below it. One connecting rod from each piston goes to the upper crank pin and one to the lower, a kind of diamond-shaped linkage when the pistons are at mid stroke being thus formed. It may also be stated that the two crank shafts revolve in opposite directions, while to counteract any vibration balance-weights are attached to the connections of the crank webs. Another feature of the motor is that no water-jacket is employed for cooling purposes, this being replaced by an air-jacket, the details of which have not been made known. The ignition is electrical, an ingenious magneto-electric device being employed, the rim of the fly-wheel being utilised to carry or form a permanent magnet, which, in revolving, produces an electrical current in a small armature geared near it. A hit-and-miss governor is fitted to the motor, and by means of small levers within convenient reach of the driver's hand the rate of sparking can be advanced or retarded as desired. Another feature of the Lanchester motor-carriage is to be found in the transmission gear. The motor drives a friction disc, against which a plate is held by depressing a lever; this plate is keyed to a shaft carrying a worm, which gears with a large worm wheel, inside which is mounted the differential gear on the rear road-wheel axle. When the worm shaft disc is pressed against the motor disc the worm rotates normally at the same speed as the motor; when the disc is drawn back it is forced against fixed stops, which act as a powerful brake. The steering is effected by a lever, fixed outside the car body, operated by the right hand of the driver, the wheels being mounted on independent axles, and coupled by a new design of compensating gear. The "body" is designed separately from, and is admirably supported by springs on the tubular frame of, the vehicle, so that different types of body can be fitted to the same frame. The road wheels are of the suspension type, with pneumatic tires, the rear pair being provided with shoe brakes.

La Société Française d'Automobiles, Quai National Puteaux, France, shows for the first time in England a motor-tricycle and a quadricycle to seat two persons. The feature of these vehicles is the Gaillardet motor with which they are fitted. It is of the single-cylinder vertical petroleum-spirit type and is claimed to develop  $2\frac{1}{2}$  h.p. The crank shaft operates a disc forming the fly-wheel, upon the shaft of which is a pinion. The inlet and exhaust valves are so arranged that by removing one bolt they can be instantly taken out for cleaning purposes, etc. The ignition is electrical, while the cylinder and valve chambers are cooled by radial discs, these being larger than usual and extending to the top of the explosion chamber. The carburettor is composed of a brass box of a capacity of three litres, and filled through the tube at the side, so placed as to indicate the maximum level. An air inlet at the top is so devised that its inner orifice can be adjusted to the level of the liquid, being lowered and raised as required. Another valve at the top regulates both the vapour and the air, in one of its extreme positions, shutting off the vapour entirely and admitting only air, in the opposite extreme shutting off the air entirely and admitting only vapour. A further valve regulates the supply of explosive mixture to the motor. The mixture is given a slight preliminary heating, the exhaust pipe being carried through the bottom of the carburetting device. The motor in the tricycle drives direct on to the rear axle. In the case of the quadri-



cycle, however, a variable two-speed gear is provided, while provision is also made whereby the motor can be entirely cut off from the transmission gear.

The Ariel Cycle Company, Limited, Birmingham, exhibit their Ariel motor tricycle, which is fitted with a  $1\frac{1}{4}$ -h.p. motor of the De Dion type. A feature of this machine is that the motor, instead of being placed behind the axle, as is usually the case, is placed between the chain stays. By this arrangement the motor is carried in front of the axle, the claim being that the weight is within the wheel base, and the front wheel takes its share of the load, thus making the steering far more accurate.

For vehicles of novel design the exhibit of the Motor-Carriage Supply Co., Ltd., of Donington House, Norfolk Street, London, W.C., is one to which the visitor to the Exhibition is quickly allured. Two German-built Daimler motor-lorries occupy a large amount of space on the stand. Although presenting anything but an attractive appearance, they have shown themselves capable of performing the work for which they were designed. One is fitted with an  $11\frac{1}{2}$ -a.h.p. Daimler motor and Daimler transmission gear, and is intended for loads of from  $3\frac{1}{2}$  to 5 tons. Four speeds forward are provided, ranging from  $1\frac{1}{4}$  to 6 miles per hour. The second lorry is of the same type, but intended for a load of only  $1\frac{1}{2}$  to 2 tons; the motor is of  $7\frac{1}{2}$  a.h.p., and the speeds range from 2 to 8 miles per hour. A Cannstatt-Daimler wagonette is the next vehicle which calls for mention; the car is fitted with a  $5\frac{1}{2}$ -h.p. motor, and four speeds ranging up to a maximum of sixteen miles per hour. The car possesses several novel features, the most important of which is the method of fixing the motor, which, together with the speed-gear, is mounted upon a separate tubular frame, so as to greatly minimise the vibration imparted to the main frame and body of the car. Another point worthy of notice is the means employed for reducing the quantity of water required for cooling purposes, which is effected by a new water-cooling apparatus, consisting of a reservoir containing only  $2\frac{1}{2}$  gallons of water, placed in front of the car. The tank is closely packed with small tubes, round which the cooling water circulates. A current of air is drawn through the tubes by means of a fan on the crank shaft of the motor, thus effectually preventing the circulating water from becoming overheated. The arrangement of the speed gear is also new. The four speeds are divided into pairs, each pair being placed into or out of gear by a separate lever, and is so arranged that while one speed is in gear it is impossible to move the other pair, the lever for that being locked. The foot brake lever, as well as applying the brake, actuates the clutch on the main shaft, thus throwing the friction cone out of gear, and applying the brake with one movement only. The body of the car has been built in this country by Messrs. Mulliner, of Northampton.

The Motor-Car Supply Co. also exhibit their "motor-wheel," a three-wheel vehicle, their motor-scout for military purposes, their "Prince Albert" two-seated four-wheeled carriage, Simms' petroleum-spirit motor of  $1\frac{1}{2}$  h.p. (the feature of which is the large *ailettes* or radial cooling discs), their magneto-electric ignition device—which pressure on our space prevents us dealing with at length this week.

The Accles-Turrell Motor Co., of Holford Works, Perry Bar, Birmingham, display a new petroleum-spirit motor of  $1\frac{1}{2}$  h.p., one of the features of which are the radiating fins; these consist of thin steel discs, much more numerous and larger than is usually employed. The cylinder barrel and combustion chamber are also formed in one piece, so avoiding a top joint. The Company also exhibit their special form of carburettor and automatic oil feed, as also a motor-tricycle fitted with the Accles motor. According to the catalogue, the Company also intended to exhibit their new two-seated light motor-car, with 3-h.p. water-jacketed motor, but up to the time of writing this report the car had not put in an appearance.

Mr. J. H. H. Berkeley shows a one-seated electric carriage, which takes the form of a bath chair, the motor being

enclosed in a case at the rear. The little vehicle appears to be easily controlled, but at the time of our representative's visit there was no one present to afford information as to its capacity.

Another motor-bath-chair is that which is exhibited by the Rover Cycle Co., Ltd., of Coventry. In this case the vehicle is propelled by means of a De Dion motor of  $1\frac{1}{2}$  h.p. arranged at the rear, above which is a saddle for the driver. The motor is connected to a small counter-shaft by chain gear, the latter being also employed from the intermediary shaft to the rear axle.

The exhibit of Messrs. Lyon & Whitmore, of 13 Downing Street, Cambridge, although but small, is one that is full of interest to users of petroleum-spirit motor-vehicles, especially those fitted with tube ignition to the motors. The device shown is a lampless and wickless ignition tube; the vapour for the burner is conveyed under pressure through a small platinum tube, the end of which is made up of an irregular coil of platinum wire. This is located right inside the ordinary platinum ignition tube; to start it it is only necessary to withdraw the new burner and light it with a match, afterwards replacing it in the tube. The device has been in use for over three months on a Daimler car, and is stated to have given very satisfactory results. Another interesting exhibit at this stand is an automatic extinguisher, by means of which, should the car be accidentally overturned, the supply of oil to the lamps is automatically cut off, thus obviating all danger of fire, etc. The device consists of a heavy brass ball attached to the burner admission cock; this ball is carried on a ring in such a way that it falls therefrom should the car tip over in any way.

However divided opinions may be as to the relative progress being made by builders of light motor-vehicles in this country as compared with Continental competitors, there can be no doubt that in one department at least—that of heavy steam-driven cars—English firms are rapidly taking the lead. If any proof of this fact be needed it is to be found in the large steam 'bus exhibited by the Liquid Fuel Engineering Company, of East Cowes, Isle of Wight. It is unnecessary to enter into a lengthy description of the boiler, engine, and transmission gear of this vehicle, which are now fairly well known and which were described at length in *Industries and Iron*, November 25th, 1898. Suffice it to say that the boiler is of the water-tube type, is oil-fired, and is located in the fore part of the vehicle. The engines are of the horizontal compound reversing type of 45 h.p. The power of the motor is transmitted to the differential counter-shaft by bevel gearing. The latter shaft carries small pinions at each end, engaging with large internally-toothed rings bolted to the rear wheels. The 'bus, which is finished in handsome style, is arranged to accommodate twenty-eight passengers, twelve on top and sixteen inside. The interior is divided into two separate compartments, first and third class, with different entrances. Baggage to the extent of 10 cwt. can also be carried on the roof. Tanks for containing about eighty-eight gallons of water are arranged under the seats, while about forty-six gallons of oil for firing purposes can be stored in tanks arranged on the frame, under the floor of the 'bus. The vehicle is, we understand, one of an order for four, and intended for a French company for service between Hyères and Toulon. The Liquid Fuel Co. also exhibit several of their shielded rubber-tired wheels for heavy vehicles. The wheel has a steel tire, above which is a layer of rubber, above which again is a steel rim built up in separate segments; the makers claiming that the arrangement reduces vibration, and also the tendency to slipping and skidding.

The Steam Carriage and Wagon Co., Ltd., of Homefield, Chiswick, London, W., exhibit a couple of steam wagons built on Thornycroft's system. The first is a steam dray built to the order of Messrs. Fuller & Co., brewers, Chiswick, and intended to carry a load of three tons, at the same time being capable of hauling a load of two tons on a trailing vehicle. The boiler, which is of



the Thornycroft water-tube type, is located in the fore part of the vehicle; it is coal-fired, although it can be adapted for liquid fuel firing if desired. The heating surface is 65 square feet, the grate area  $2\frac{1}{2}$  square feet, the test pressure 350 lb. per square inch, and the working pressure 180 lb. The engine, which is of the horizontal compound type, is entirely enclosed in a dust-tight casing, the moving parts working in an oil bath. In this vehicle the power is transmitted from the counter-shaft, fitted with a two-speed gear by chain gearing to the rear road-wheel axle. The vehicle is entirely controlled from the driver's seat. Provision is made for the carrying of coal sufficient for a run of fifty miles, or of water sufficient for about fifteen miles. This Company also exhibits a steam lorry (Fig. 6), which, in the driving gear presents many changes from the type which has hitherto been adopted. The tare weight of the vehicle is 2 tons 18 cwt., and is intended to carry a load of three tons, and to have a load of two tons on a hauling vehicle. The boiler and engine are of the same type as above alluded to, the motor being of 14 h.p. As regards the new power transmission mechanism, we regret we are unable to give but few particulars. From a cursory inspection, however, we gathered that the rear axle, which is a compound one, is driven by spur wheels. The rear road-wheels are mounted loosely on the solid axle and are driven

20 h.p., the normal speed being 500 revolutions per minute. The shaft of the motor extends from the front right to the rear of the car, where the power is transmitted through bevel gearing to an intermediary shaft. The latter carries at its ends small pinions, which gear with internally-toothed rings bolted to the rear road wheels. A variable speed gear is provided, and it is stated that the lorry can attain any desired speed from two to seven miles per hour. The road wheels are strongly built and dished. Ample brake-power is provided, there being a shoe brake acting on the fly-wheel of the motor, and band brakes on each of the internally-toothed rings connected to the rear road-wheels.

Another interesting exhibit of steam-driven vehicles is that of the Clarkson & Capel Steam Car Syndicate, Limited, of Deverell Street, Great Dover Street, London, S.E., which is showing a steam landau to carry six, a two-seated Victoria with accommodation for luggage or two extra passengers, and a steam lorry to carry from four to five tons. Dealing first with the landau (Fig. 7), this is of very novel appearance, and has been designed to secure the utmost possible comfort to the passengers. The body is suspended by C-springs on an underframe that carries all the machinery. The underframe is constructed of steel channels, bent to elliptic curves. All the propelling machinery is placed in the rear of the underframe. The position of the driver's seat is also placed behind,

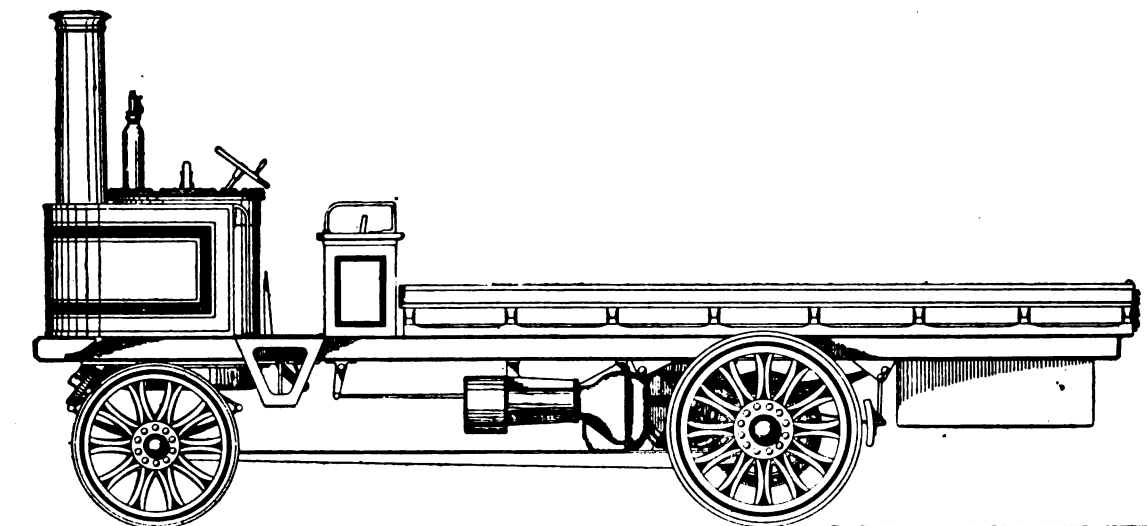


FIG. 6.—THE THORNYCROFT STEAM LORRY.

through the medium of elliptical springs attached both to the hubs of the wheels and to the hollow axle surrounding the solid one. A two-speed gear is provided, with the low one of which it is stated that a gradient of 1 in 6 has been climbed. At the recent trials this vehicle maintained an average speed of 5.4 miles per hour, over a twenty-miles course, at an average expenditure for fuel of 1.055d. per mile.

Messrs. Bayleys, Ltd., of Newington Causeway, Southwark, S.E., exhibit the steam trolley or lorry which took part in the recent trials. This vehicle is a veritable combination of parts, comprising a De Dion water-tube boiler, a Straker motor, and a transmission mechanism very similar to that employed on the Daimler petroleum-spirit cars. The vehicle is stated to weigh, unladen, 58 cwt. and to be designed to carry a load of four tons. The De Dion boiler, which is coke-fired, consists of a circular water-casing made up of the outer shell and cylindrical-fire box; in the centre of the fire-box space, about a foot above the bars and extending nearly a foot above the top of the boiler, there is a central chamber, the upper part of which forms a steam dome. Connection between this dome and the outer water shell is made by a series of short, straight, radial, upwardly-inclined tubes, the upper rows of which form super-heating tubes. The engine, which is of the vertical compound type, is arranged under the driver's seat; it is stated to indicate

the driver being thus in more direct communication with the machinery, enabling the front portion of the car to be utilized for the condenser, and giving the passengers an unobstructed view. Clarkson's system of oil firing (common paraffin) is used. The steam generator is of a modified Thornycroft type, and supplies steam at 200 lb. per square inch. It is fitted with a reciprocating float gear, which keeps the water-level constant and dispenses with glass water-gauges. The engine is of the compound enclosed self-lubricating type, similar to the one on the lorry referred to before, and develops up to 17 i.h.p. The power is transmitted by Renold's chain to a counter-shaft fitted with balance gear, and a two-speed friction clutch, giving seven and fifteen miles per hour, is operated by a single lever. The steam regulating valve is of a four-ported design, and enables a steam brake to be operated by a backward movement of the driving lever. There is also a foot lever actuating a pair of semi-band brakes. The steering is effected through a quadruple-threaded screw mounted upon the front axle, which locks the steering wheels in all positions, enabling the hand to be removed from the controlling wheel without any risk. The fuel and water tanks contain sufficient for a run of 100 miles. The weight of the landau in running order is about 30 cwt.

The two-seated steam Victoria (Fig. 8) is a converted horse-

drawn vehicle, fitted with wood wheels, 2½-in. Dunlop pneumatic tires. The steam generator is of the semi-flash type, and is constructed entirely of coiled tubes; it is located at the rear, and is fired by paraffin on Clarkson's system, and supplies

from its normal "steam off" position, so that the use of a second lever is unnecessary. The water supply to the boiler is automatically controlled by Clarkson & Capel's reciprocating float gear, and renders the boiler practically independent of the driver's attention. The oil fuel is consumed on Clarkson's system, and is automatically regulated according to steam pressure. The exhaust steam is condensed by the atmosphere acting upon wire covered copper tubes fitted into the roof of the cab over the driver, under which is located a large horizontal fan, driven by a rope off the motor. This condenser does away with the necessity for carrying a large supply of water, and secures the advantage of supplying the boiler with clean distilled water that keeps the interior of the boiler free from deposit, and thus does away with the necessity for frequent cleanings. The lorry is provided with a two-speed gear, giving six miles per hour on the level and two miles uphill.

FIG. 7. THE CLARKSON-CAPEL STEAM LANDAU.

steam to a twin-cylinder double-acting enclosed type engine of 4 h.p. that works at any speed up to 2,000 revolutions per minute. Only one gear is used, the power and speed being regulated solely by the steam throttle. In the front of the car is fixed one of the firm's air condensers, which is assisted by tubular wings over the front wheels. The fuel and reserve water tanks contain sufficient for a fifty-mile run, and the pressure gauges, as well as fuel and water quantity indicators, are placed conveniently in view of the driver. Two powerful band brakes acting upon the driving wheels are operated by a foot lever. The motor transmits its power to a counter-shaft by a Renold silent chain, while pinions on the end of the counter-shaft gear with internally-toothed rings bolted to the rear road wheels. The weight of the car complete is 12 cwt.

The Clarkson-Capel steam lorry is designed to carry four to five tons, and weighs unloaded fifty-eight cwt. It is propelled by an oil-fired vertical boiler that supplies steam at 200 lb. per square inch to a compound enclosed self-lubricating engine of 17 h.p., constructed largely of aluminium, located in the fore part of the vehicle. The power is transmitted ordinarily through Renold's chain gearing, both from the motor-shaft to the counter-shaft and from the latter to the rear road-wheel axle, but for emergencies and hill work a low gear of treble power is brought into operation by depressing a foot brake lever to its lowest point, where it is locked by a lateral movement, and at the same time releasing the ordinary friction clutch. A steam brake is arranged to come on by a further movement of the steam regulator lever

Messrs. Des Vignes, Cloud & Co., of Strand-on-the-Green, Chiswick, S.W., have an exhibit of special interest to those whose tendency is in favour of steam motor-vehicles, this firm making a speciality of boilers and engines for this type of car. Four boilers are exhibited—a 7-h.p. water-tube type, weighing 204 lb.; an 8-h.p. semi-water tube, weighing 270 lb.; a 7-h.p. fire-tube type, whose weight is 3¼ cwt., and another of the same type of 4 h.p., and weighing 2 cwt. Of small steam engines, a well-finished 3-inch set of

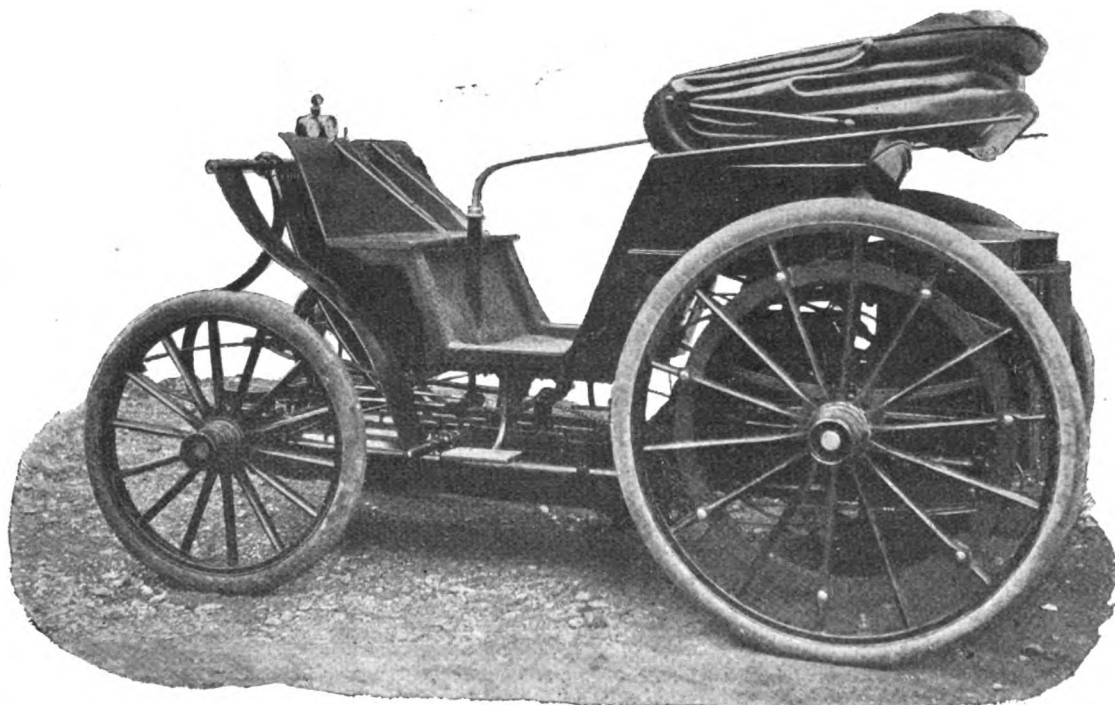


FIG. 8. THE CLARKSON-CAPEL STEAM VICTORIA.

the two-cylinder vertical type is shown, as also a small high-speed horizontal motor.

Considerable interest has been displayed during the week in the accumulator shown by the Crowds Accumulator

Syndicate, Ltd., of Bridge Place, Eccleston Square, London, S.W., this no doubt being due to the claim made for the accumulator that it has a capacity of 10 Watt-hours per lb. of cell. The sheet lead used for the grids is of a specially pure quality, containing no antimony. It is passed through a press and cut and stamped to shape, the resulting grid having the appearance of expanded metal. The grid so obtained is very light, and bends under its own weight, the idea of this being that it is considered there is no advantage in making the grids so strong as to last longer than the active material they are incorporated with. The grids are afterwards pickled in caustic soda, and finally rinsed in dilute sulphuric acid. They are then weighed, the lighter ones being used as negatives and the heavy ones as positives. The grids are next pasted with a simple mixture of red lead or minium in such a way that the active material cannot disintegrate. After pasting, the grids are soldered to a back plate made of lead antimony, and upon the upper part of which is a lug terminating in a screw, which forms one pole of the element. The positive and negative groups are each placed within lead dummies, and subjected to the passage of the current in the usual way; the positive plates being converted into spongy lead, and finally into peroxide, while the negative plates are converted into spongy lead. In assembling an element each plate is wrapped in a sheet of absorbent pulp or cellulose, and separators of perforated insulating material are then placed between each positive and negative plate. The whole is then placed within an ebonite box and the electrolyte added. The cellulose wrappers absorb the liquid, causing the former to swell, with the result that the plates are firmly held within the cell, and all chance of the active material washing away from the plates prevented. The cell is fitted with a light-fitting rubber cover through which the poles project, and in the middle of the cover is a screwed cap for examination and filling. Connection between adjacent cells is made by a flexible stranded copper wire having brass collars and well insulated. The accumulator is being made in a number of sizes ranging from 100 ampère-hour up to 240 ampère-hour capacity. The following are the details of the 100 ampère-hour cell, the internal resistance of which is given as .008 ohm. Dimensions of box outside,  $5\frac{3}{8}$  in. by  $3\frac{7}{8}$  in. by  $8\frac{1}{2}$  in.; total weight of complete cell, 14 lb.; height over all,  $9\frac{1}{4}$  in.; available capacity at 10 ampères, 100 ampère-hours; 15 ampères, 90 ampère-hours; 20 ampères, 85 ampère-hours. We understand that the Crowds cell has already been adopted by a number of electrical motor-car builders in this country, including the Electric Motive Power Company, the Electric Street Car Manufacturing Syndicate, and the Madelvic Company.

The Electrical Undertakings, Ltd., of Miller Street, High Street, Camden Town, N.W., are attracting attention by their exhibit of a new type of electrical vehicle, which

is built on Leitner's system. Two vehicles are shown, a four-seated sporting trap and a two-seated buggy. An illustration of the latter is given in Fig. 9. Two electro-motors, of the Lundell type, and of  $2\frac{1}{2}$ -h.p. each, are provided—one to each of the rear road wheels—the connection being by means of spur-wheels on the motor shafts gearing with internally-toothed rings on the rear road wheels. The battery consists of 40 Leitner-type accumulators, the capacity and weight of which are given as respectively 120 ampère-hours and 5 cwt. The controller is adapted to give no less than six forward speeds, ranging from two to twenty-eight miles per hour and two backward motions. The motor is so arranged that in descending hills it can be reversed and employed in recharging the batteries. The weight of the car complete is 16 cwt. 28 lb., the capacity of the battery being stated to be sufficient for a run on ordinary roads of seventy miles with one charge. The



FIG. 9.—THE ELECTRICAL UNDERTAKING'S, LTD., BUGGY.

Company is manufacturing its own accumulators, and is also arranging to construct its own electro-motors. We also understand that the construction of a twelve-seated electrical vehicle, to be known as the "Tally Ho," is at present in hand.

The Mackenzie Carriage Works, of 26 Walnut Tree Walk, Kennington Road, Lambeth, S.E., exhibit three electrical cars—a Riker two-seated mail phaeton, a Mackenzie four-seated sporting dog-cart, and a Mackenzie phaeton. The frame of the Riker car is built up of steel tubing. The electro-motor is of  $1\frac{1}{2}$  h.p.; it is arranged in front of the rear axle, which it drives by means of spur gearing. The electrical energy is furnished by a battery of forty Headland accumulators of a capacity of 90 ampère-hours. The wheels are of the suspension type fitted with pneumatic tires, the weight of the car complete being  $18\frac{3}{4}$  cwt. Three forward and two backward speeds are provided. The Mackenzie dog-cart is built very much on Riker lines, but shows a number of detail improvements both in the carriage body design and in the mechanical arrangement. The frame is tubular, the connecting rods controlling the steering of the front wheels being of an improved design. The electro-motor, which in

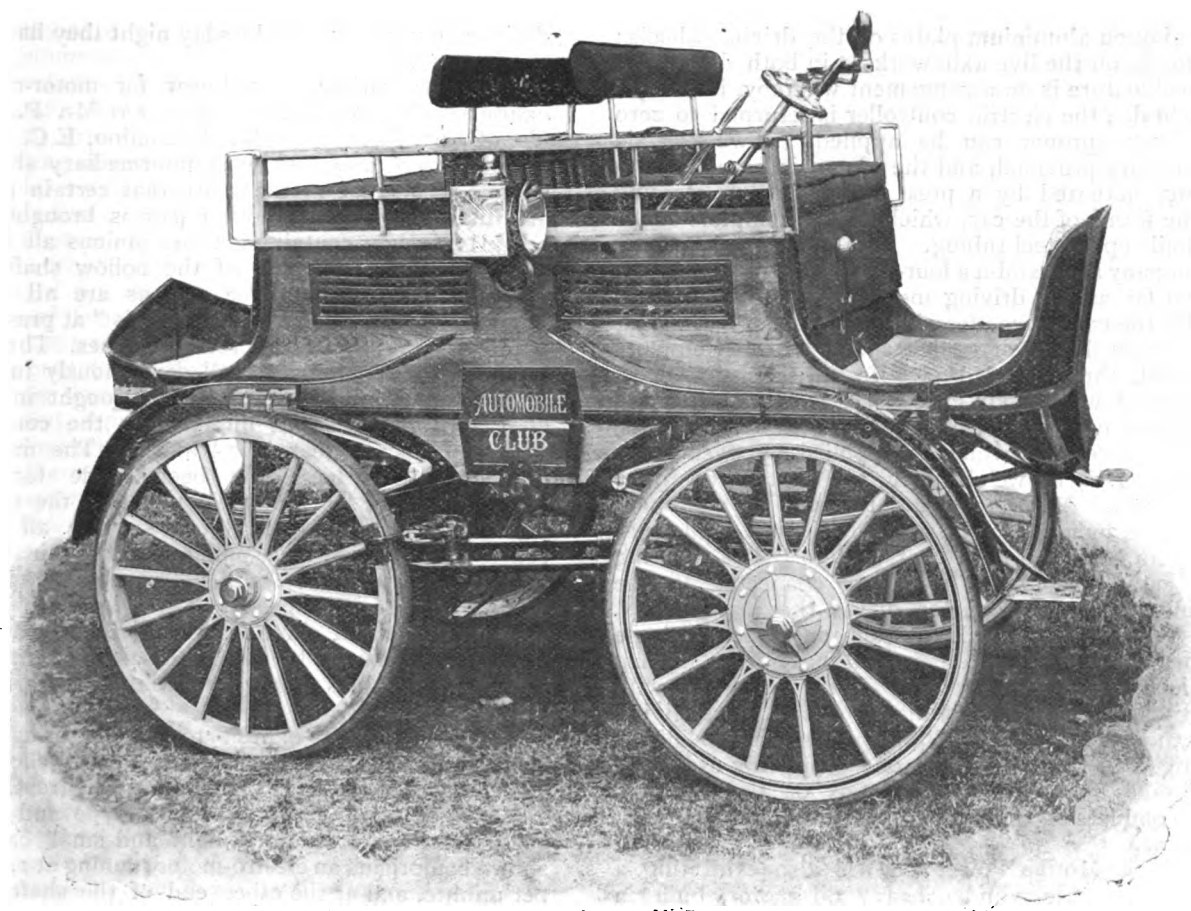


FIG. 10.—THE ELECTRIC MOTIVE POWER CO.'S DOG-CART.

this case is of 3 h.p., is geared by means of spur wheels to the rear axle, a band brake operated by a foot pedal being incorporated with the spur wheel on the latter. The battery consists of forty cells of the "Victoria" type, of a capacity of 150 ampère-hours, or sufficient for, it is claimed, a run of sixty miles on one charge, the weight of the battery being 10 cwt. Three forward speeds—the maximum being twelve miles per hour—are provided, these being controlled by a single handle. From our own experience we can safely state that the steering and control of this vehicle is of the most simple and easy character. Among the little "tricks" in this car is the fixing of a push-button switch in the steering-bar handle so that the alarm gong may be sounded without removing the hand from the bar, while another is the arranging of the battery chest in such a way that not only the sides but also the top of the accumulators may be quickly rendered accessible. The weight of this car complete is 23 cwt. The Mackenzie phaeton is of a very neat design, the electrical gear being the same type as the dog-cart with the exception that the motor is only of  $1\frac{1}{2}$  h.p.

Headland's Patent Electric Storage Battery Co., Ltd., of 12 Pall Mall, London, S.W., exhibit no less than four different electric vehicles, the leading feature of all of which is the Headland accumulator, which is claimed to be constructed with a view of giving great mechanical strength, at the same time permitting of high rates of discharge and securing freedom from buckling and disintegrating of paste. The vehicles shown are:—a converted horse-drawn mail phaeton, a three-seated phaeton, a two-seated phaeton, and a four-seated Victoria. The first-named has a 3-h.p. motor, driving the rear axle by bevel gearing. Three speeds are provided for—3, 7, and 14 miles an hour. They are obtained by grouping the forty cells of the battery, which has a capacity of 150 ampère-hours, in the parallel-series method. The carriage has a travelling capacity of about thirty-five miles with one charge. The battery which is in

the car has worked it from the beginning, nearly two years ago, and is still in excellent condition. In the three-seated phaeton a 3-h.p. motor is provided, connecting on to the front axle by worm gearing. The weight of the car complete is 24 cwt. In the two-seated phaeton the motor is connected to the front axle by chains of the Renold-laminated type. The battery comprises forty cells of a capacity of 140 ampère-hours. Three forward speeds and one astern are provided, while in addition to the electrical brake, band brakes on the rear-wheel hubs are fitted. The road wheels are of the suspension tangent-spoke type, with  $1\frac{1}{2}$ -in. solid rubber tires. The four-seated Victoria is similar to the other vehicles as regards the electrical arrangement, with the exception that the motor is geared to the front road wheels by pinions engaging with internally-toothed rings bolted to the wheels.

Another interesting exhibit of electric motor-vehicles is that of the Electric Motive Power Company, Limited, 74 Caistor Road, Balham, S.W. The first car to attract our attention was a very elegant four-wheeled dog-cart (Fig. 10), having four seats, the body being of light varnished wood. The driving is effected through an enclosed 5 h.p. electro-motor of the Mackey type, current to which is supplied by sixty-two Crowds cells, each weighing 24 lb., and having a capacity at a four-hours discharge of 264 Watt-hours. The whole battery complete weighs, therefore, 13.25 cwt., and has a capacity of 22 h.p. hours. The motor is geared to the rear axle through spur gearing. There are four speeds of 3, 6, 9, and 12 miles per hour respectively, obtained by paralleling the cells in a special controller, by means of which the speeds may be varied without breaking circuit, thus, it is claimed, obviating wear and tear due to sparking; an average run of fifty miles with one charge being obtained with a full complement of passengers. Three brakes are supplied—(1) an automatic electric brake, operating to charge the cells, this being the one used under ordinary conditions; (2) a rim



brake, engaging on aluminium plates on the driving wheels; (3) a hand brake on the live axle working in both directions. Another novel feature is an arrangement whereby, in actuating the foot brake, the electric controller is returned to zero before the brake proper can be applied. Two electric carriage lamps are provided, and the alarm is given by an electric gong, actuated by a press button in the steering handle. The frame of the car, which weighs complete under 23 cwt., is built up of steel tubing.

The Company also exhibit a four-wheel phaeton, the details of which, so far as the driving mechanism is concerned, is identical with the car above described. Another interesting and somewhat novel form of vehicle shown by this Company is a two-seated, three-wheeled electric carriage, having a varnished walnut wood body, the total weight, with two passengers, being under 8 cwt. It is propelled by one motor of 2 h.p., the current to which is supplied by twenty-two Crowds cells of 14 lb. weight each, the battery complete weighing 2.75 cwt. An average run of thirty-five miles can, the makers state, be relied on at a speed of twelve miles per hour, which can be varied from that to zero. The steering and control are effected by one lever connected to the front steering wheel. The motor drives the rear wheels, which are fixed to a live axle, through an enclosed single reduction bevel gearing and differential box. The driving wheels, which have a diameter of 26 in., are fitted with pneumatic tires. The frame is built up of steel tubes, giving great strength with lightness. Three brakes are provided—(1) an electric brake, this being the one commonly used, and two band brakes, each acting separately on the live axle. The weight complete of this little car, with motor and cells, is under 5½ cwt.

The Electric Motive Power Co. are also exhibiting a 3½-h.p. vertical double-cylinder heavy oil motor, built in accordance with New's patents, for which the Company are the sole licencees as regards motor-vehicles. There are many features of interest about this motor, one of which is to be found in the special inlet valve, which obviates the necessity of providing any sort of vaporiser or heating device, and by which the velocity of the incoming mixture can be varied to facilitate starting, etc.; a special electric timed-firer is also provided, which, after the engine has once begun running, can be switched off, the device becoming self-firing. The point of ignition by this arrangement is capable of being varied to suit the speed, in this case automatically. A great feature claimed for this device is that back-firing can never take place, as the heated tube is only exposed to the gaseous mixture by the opening and closing of a small shutter at that point during the compression stroke which will enable combustion to take place at the theoretically correct moment for all speeds, which can range from 200 to 1,200 revolutions per minute. The valves are all controlled by a cam shaft, fixed on the cylinder top, and driven by chain gearing from the motor shaft. A governor is provided, which controls both the igniter and the amount of mixture allowed to pass to the explosion chamber. The supply of oil to the latter is maintained by a small pump.

Messrs. Shippey Bros., Ltd., of 13 and 14 Cheapside, London, E.C., make a large display of motor and electrical accessories of all kinds for electrical motor-vehicles, chief among which is a 2-kilowatt 80-volt electro-motor with fixed carbon brushes as used in automobile vehicles on the Riker system, and a 3-h.p. 75-volt four-pole motor similar to those used by the Pope Manufacturing Co. Other exhibits comprise a Riker standard controller-switch giving three forward-speed and two reverse motions, Woodward's and Victoria accumulators, a spark coil battery, switches and cut-outs for motor-cars, ventilating fan sets, gongs, bells, etc., all of interest to builders and users of electrical cars, but to which pressure on our space forbids a lengthy reference at the present time.

Mr. Carl Oppermann, of 2 Wynyatt Street, Clerkenwell, E.C., was, according to the catalogue, to have exhibited half a dozen electrical vehicles built in accordance with his

designs, but up to Wednesday night they had not put in an appearance.

A new variable speed-gear for motor-cars forms the exhibit of Mr. W. H. Newman, c/o Mr. P. Hooker, Pear Tree Court, Farringdon Road, London, E.C. The device is intended to be arranged on an intermediary shaft; it is not a change speed-gear in the sense that certain pairs of wheels are disengaged while another pair is brought into gear; it comprises a box containing three pinions all in gear with a small pinion on the end of the hollow shaft carrying the driven pulley. The three pinions are all mounted very much on the lines of the "free wheels" at present being used on bicycles, *i.e.*, with cam roller clutches. The three pinions, although running free, are all continuously in gear with the driven pinion, the clutches being brought into action, one after the other without interval, as the controlling hand-wheel and screw-gear is advanced. The model shown at the Exhibition has only been made for purposes of demonstration; for motor-car purposes the clutches would be controlled by a hand lever, so that all of them, and consequently the driven pulley, could be instantly put out of gear in case of necessity. The model shown is arranged to give any desired speed to the driven pulley from nil up to a maximum of three-fourths of the speed of the driver; this can, of course, be varied to suit different requirements. The gear occupies but very little space, and appears to work very quietly.

An interesting exhibit to the motor-car engineer is Humpage's speed-reducing gear, which is shown by Messrs. J. C. Howell, Ltd., of 24 Queen Victoria Street, London, E.C. The gear, which is of the epicyclic type and is exceedingly compact, is enclosed in a light and small case, the model shown comprising an electro-motor running at 1,500 revolutions per minute, and at the other end of the shaft a small pulley whose speed is only fifteen revolutions per minute, the reduction being obtained by means of the reducing gear arranged between. Among the advantages claimed for this gearing are the following: The whole of the gearing is cased in and protected from dirt and dust, and, the wheels continually running in an oil bath, perfect lubrication is ensured and friction and wear are very much reduced. Owing to the balanced double drive all side strain on the driven shaft is avoided, there being no tendency to bend. The strain on individual teeth is also much reduced, as, owing to the flat bevel of the wheels, more teeth are in gear at one time than with spur gear. The ratio of reduction in the gearing can be varied to a large extent without materially altering the wheels themselves. In fact, any ratio of reduction that may be desired for any commercial purpose can, the makers claim, easily be obtained in a very compact space. Easy starting and stopping is secured by means of a brake band and handle, and the load can be brought on the motor with any degree of gentleness that may be desired.

The Mossberg Roller Bearings, Ltd., of 6 Victoria Street, Westminster, and Birmingham, have an interesting exhibit of their roller bearings for which many claims, which can be fully justified, are made in the way of reducing friction, etc. The rollers are made of hardened and ground tool-steel, and, while held in a bronze cage, are free to rotate on a tool-steel shell, generally fitted round the shaft or axle. A number of applications of the roller bearings are shown, including one to a brougham axle and wheels. There can be no doubt as to the practicability and utility of roller bearings for motor-cars, particularly those of the heavier class.

The Roller Bearings Company, Limited, of 1 Delahay Street, Westminster, S.W., is another concern exhibiting roller bearings, which are intended for application, not only on motor-vehicles, but also for railway and tramway rolling stock and heavy engines and machinery generally. It is almost unnecessary to remark that the bearings are composed of a series of rollers placed between the journal of the axle and the casing or box. The outer casing is of cast iron, into which is fitted a steel liner. The external form of this casing can be made to suit any special requirements of hub, framing,



etc. The rollers are made of hard steel, and are kept in position by a gunmetal cage made in one piece. This cage runs upon the axle, but does not take any part of the load, its function being to keep the rollers in their proper relative positions, and to prevent them from cross-winding on the axle. The bearings have already been adopted on a number of motor-vehicles with successful results, while as regards rolling stock, shafting, and heavy machinery, roller bearings have become almost a *sine quâ non*.

An exhibit which appeals more to motor-car builders than to users of automobile vehicles is that of Messrs. Rubery & Co., of Darlaston, South Staffordshire. It comprises a motor-car frame built up entirely of channel-section steel; it is adapted for a two-seated car, and weighs only 1 cwt. The firm claim that channel-section steel affords not only a light and rigid frame, but one of great strength. Examples of the various shapes in which channel-sections can be supplied are also on view, and it only needs a few minutes' conversation with the firm's representative to ascertain the fact that Messrs. Rubery are devoting considerable attention to the matter of frames for motor-car builders.

Messrs. Carless, Capel & Leonard, of Hackney Wick, N.E., it is almost needless to remark, are present with an exhibit of their well-known petrol for petroleum-spirit motors, also samples of petroleum oils for lighting and heating, etc., and lubricating oils of all kinds.

Another exhibitor in this class is the Anglo-American Oil Co., Ltd., of 22 Billiter Street, London, E.C., who, in addition to exhibiting samples of Pratt's well-known and largely used motor-car spirit, have also on view a number of petrol storage tanks, barrels, etc. The Company's new departure in putting up their spirit in small-sized and airtight cans seems to be greatly appreciated, and later on, when the system becomes known, it will be looked upon as a boon by owners of motor-cars.

The Dunlop Pneumatic Tyre Co., Ltd., of London and Coventry, are present with an exhibit of their well-known wired-on pneumatic tires. These are shown in several sizes suitable for motor-tricycles, light voiturettes, and heavy motor-cars.

Another concern which is now catering for the demand for pneumatic tires for automobile vehicles is the Clipper Pneumatic Tyre Co., Ltd., of Aston Cross, Birmingham. The "Clipper" tire, which is now being made in several sizes, suitable for motor-tricycles and all types of motor-cars, differs from the Dunlop in that it is not held on the rims by means of wires, the latter being replaced by the thickened edges with which the outer covers are provided, the tires being further attached to the rims by means of bolts.

The Grappler Tyre Co., Ltd., of 164 Corporation Street, Birmingham, have also a display of their pneumatic tires for motor-cars and cycles, together with a number of wheels fitted with the same.

The Shrewsbury and Talbot Cab and Noiseless Tyre Co., Ltd., of 24 Page Street, Westminster, have an exhibit of their solid rubber tires and steel rims for motor-vehicles. The tires are made in different forms—for vehicles weighing unladen up to two tons, and ditto up to one ton. A feature of the tire is that it is not only held fast by the rim itself, but two special wires are embedded in the rubber the whole way round, and so fastened that the makers claim that the rubber tire cannot "creep" or be pulled out of the rim even under the heaviest loads.

The feature of the solid rubber vehicle tires exhibited by the Sirdar Rubber Company, Limited, of 36 Duke Street, London, E.C., is that it consists of an endless compressed band moulded in a coil form, so that the tendency of the tire is to hold itself on the rim without the use of wires. A light strip of fabric is embedded in the base of the tire to prevent stretching. Another feature claimed for this tire is that it is put on the rim under compression, so that any slight cuts on the tire automatically close up.

Another solid-rubber tire for motor-vehicles is that which is shown by the Pendleton Rubber Co., Ltd., of 63 Frederick

Street, Edinburgh, and known as the "Woodlock." The steel rim is of C section, the rubber tire being held therein by special springs introduced at short intervals. No compression whatever is put on the rubber, and its whole resiliency is, it is claimed, retained, the attachment depending entirely upon the steel springs. These are fixed in the rim by a simple appliance, and once there it is impossible for them to become detached accidentally. These springs are also claimed to entirely prevent slipping or "creeping" in the rim. The arrangement admits of the rubber being packed on the rim, with the result that any accidental cuts on the surface of the tire close automatically, the makers stating that it is possible to replace even the smallest section of the tire that may have become injured or worn.

Messrs. Simms & Co., Amberley House, 12 Norfolk Street, London, W.C., show their special compound pneumatic tire for motor vehicles, which appears to possess several features of merit, it being claimed that it comprises several points of the solid, cushion, and pneumatic tire combined in one new tire. The tire has practically (1) a solid, interchangeable rubber-tread held by two endless electrically-welded steel wires on to the semi-circular (2) pneumatic tire and cover (inner tube), held in place by a special fastening to the side-flanges of the (3) steel rim (semi-circular), forming an air cushion. The rim is built up of three parts, so that the two side-rims may be cheaply and easily replaced without in any way interfering with the spoking of the wheel. The tread is so formed that when worn out it can be cheaply and easily removed and replaced. Should a puncture occur, which is claimed to be very improbable, the tire is so constructed that it will immediately collapse entirely inside the rim, and the wear will then be partly on the side-rims and partly on the tread. The rim is so constructed as to provide surfaces for a rim brake, also designed by Mr. Simms, a specimen of which is to be seen on the stand.

Messrs. Mulliner, of Northampton and 28 Brook Street, London, W., exhibit a Daimler car, the carriage-builder's portion of which is the product of their works. This firm is making a speciality of, and has earned a high reputation for, this class of work, several specimens of their carriage bodies being visible in other parts of the exhibition.

Messrs. Brampton Bros., Ltd., of Oliver Street Works, Birmingham, make a small display of their now largely-used motor-car driving chains. These are made in both solid block and roller pattern, in pitches from 1 in. up to 3½ in. pitch. The products of this firm are too well known in the automobile world to require any lengthy description at this time.

Messrs. Selig, Sonnenthal & Co., of 85 Queen Victoria Street, London, E.C., are the only firm showing machine tools, their exhibit comprising a very large range of tools and machinery used in the manufacture of motors and motor-cars.

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AUSTRIA is about to try the motor-omnibus in an interesting part of the country. There is to be a daily service from Meran, in the Tyrol, to Trafoi and back, from Handeck to Trafoi and back, and from Meran to Handeck and back. On the first line a 10-h.p. car for fifteen persons will be used, and on the second a motor of equal power, the car seating twelve persons and standing room for six. The third car is to take the mail and ten passengers, and will run at higher speed.

On returning from the Automobile Club's fifty-mile trials, we were crossing from Gower Street into Tottenham Court Road, when we thought we heard the peculiar sound emitted by the "Lifu" when on its travels. Shortly afterwards, indeed, the "Lifu" wagonette, which ran so well at the Whitsuntide tour of the Automobile Club, turned the corner and came into view. Mr. House and a party of friends were on board, and they informed us they had had an extremely satisfactory run up from Portsmouth that day.

## MIDLAND MOTOR NOTES.

By "VERAX."



### A New Birmingham Firm.

MR. CHAS. TURRELL, late of the British Motor Syndicate, who has lately been engaged in building a small motor "quad" at the works of Mr. J. G. Accles, of Holford Works, Perry Bar, in this city is, I understand, going into partnership with the latter gentleman, with a view to building motor cars and motor cycles. The Accles Motor is of the De Dion type, but the cooling *ailettes* are not cast with the cylinder, but after being turned are driven on to the cylinder barrel. The appearance is similar to the Dion cylinder, except that the ribs are very much thinner and closer together, greater cooling effect being claimed by this means of manufacture. Mr. Turrell has been connected with the British Motor Company for some time, so has had the advantage of that firm's experimental work, which should stand the new firm in good stead. The first "quad," I understand, has given very good results on the road. The motor is placed right in front of the car, to get the full advantage of the "head breeze" for cooling purposes. I have not as yet had an opportunity to try this motor, though I hope soon to give more particulars of it. It is possible that there may be one at the Richmond Show. This, however, remains to be seen. I understand, too, that the new firm are intending to give advice and assistance to amateurs and other firms in the production of motors and cars, and under the circumstances this should be of mutual advantage.

### An Abandoned Experiment.

SOME time ago I came across a gentleman in Birmingham who was bringing out a car on entirely new lines. The engine was to start with compressed air, and then work as a petrol motor. To absolutely annul vibration the motor was to have been placed across the vehicle—a horizontal motor, of course. There was much talk at the time, and this machine was to lick creation. Nothing further, however, has been heard of this, and I am just informed that the inventor and the builders have been obliged to abandon the scheme. Of course, the man who never makes mistakes never makes anything, and I hope this gentleman will be more lucky with his next invention, whatever it may be.

### A Question of Average Speeds.

MR. LANCHESTER'S car, which has frequently been seen about the city, and on more than one occasion has been stopped for "furious speed," as a breach of the regulation in this direction is called, has, I understand, done very well in the Automobile Club trials, though apparently much difficulty was occasioned in keeping to the legal limit of speed, a dead stop being necessary at many of the milestones to allow for reducing the average speed to twelve miles per hour. As everyone knows it is practically impossible to design a car which will make an average speed of twelve miles, especially when long inclines have to be negotiated. For instance, a car which would carry four people up a long three-mile gradient, the average rise of which is say 1 in 10, at twelve miles per hour, would have to be very strongly built in itself, and have to carry a very powerful engine. The engine would have to indicate roughly 16 h.p., and the lightest car to carry this would weigh at least 30 cwt. To take the hill the other way—that is, down—at twelve miles per hour it would not be necessary to have an engine at all, as the weight of the car plus passengers would be enough to carry it down, and at considerably above the twelve-mile limit. Ergo, to build a car which will run this speed on the level, without overworking the engine, means that speed up-hill must be taken at somewhere between two and five miles at best. To look at the matter from

another point of view, to maintain an average speed of twelve miles per hour uphill and down it is absolutely necessary to overrun that speed on occasion.

### Coventry Manufacturers.

THE Raglan car, of which I have previously made mention, is practically a copy of the two-speed Benz Ideal, with the exception that the car is somewhat heavier, owing to its more massive construction. The wheels are altogether heavier and have Clincher tires fitted; the counter-shaft bearings are made solid with the bracket plate, thus being much stronger than the makeshift way in which they are fitted by Benz. The loose pulleys run on ball bearings, lessening friction, and lengthening their life considerably. The chains used are Brampton's roller, which wear very well indeed. A departure from the ordinary Benz practice is the use of a cam and lever for opening the gas admission valve; the air valve at back of cylinder is still retained, and is adjusted by means of a nut and lock nut. A large increase of power is gained in this way, which is especially noticeable up a long hill, and there is no doubt that, though the idea is by no means a novel one, it is a great improvement. The Benz engine runs ordinarily at slow speed compared to other petrol engines, and consequently, if that speed is considerably reduced, the automatic gas valve fails to give enough opening, and hence a weak charge. In the Raglan car, when the engine is running dead slow, the automatic air valve is scarcely opened at all, and gas valve fully opened, so that a rich charge is obtained under all conditions. The engine gives over  $3\frac{1}{2}$  h.p., and the car is a very fast one, and takes hills very well indeed. The firm would be wise to show this car at the Agricultural Hall, and, as in "scantlings," they have generally followed the Benz design, it therefore stands to reason that their parts will fit a Benz carriage. The firm are also taking up the manufacture of tricycles and, I believe, smaller cars.

### The Motor Agency Co.

THIS is a small firm whose offices and works are situated in Ryley Street. Mr. Crouch, late of the Coventry Motor Co., is managing. The firm has, I suppose, obtained most of the relics of the old Company in the shape of old motettes and Dion tricycles and other small machines. These machines are being re-built and generally made saleable, and, I believe, are being disposed of at very reasonable figures. The firm also undertakes the manufacture of vaporisers, tanks, or, in fact, any parts for small motors, including castings of Dion type motors, which they supply either in rough or finished state.

## THE FRENCH MOTOR-CAR EXHIBITION.



THE first impression of the Motor-Car Exhibition at Paris is that no striking novelty is to be seen, although there are many indications that efforts are being made by manufacturers to produce a small motor-car at a price within the means of those who cannot spend 10,000 francs for a 6-h.p. car. Nearly every manufacturing firm shows a voiturette, but, of course, none have attained perfection at the first general attempt to meet this want.

The great mistake that has been generally made, according to our opinion, is the adoption of the De Dion (or a similar) motor, which is invariably badly placed so far as ventilation is concerned. When working on a low-g geared vehicle, a De Dion motor naturally becomes heated, and if precautions are not taken will not work properly, especially when ascending hills. This criticism having been recorded, we will deal more particularly with the principal displays.

The well-known firm of Panhard & Levassor show different models of cars up to 12 h.p., and some which suc-

cessfully competed in the Paris-Bordeaux race. They also exhibit a wagon fitted with a powerful motor, and the Panhard voiturette, while Charron has a Panhard launch fitted with a Phoenix motor.

Peugeot shows various models of cars, amongst them being the 18-h.p. car of Giraud, which was in the competitions at Nice, and a very pretty 3-h.p. voiturette for two persons. This is built on the same lines as their larger vehicles, and is certainly a very good type of car.

Tricycles and quadricycles are to be seen at De Dion's stand, where a two-seated voiturette also attracts attention. This has a 3-h.p. vertical motor, similar in design but larger in size to those applied to the tricycles. It is also supplied with a water-jacket, which De Dion regards as quite indispensable. The car has also a speed control. The power is transmitted by cog wheels and without chains, the weight of the voiturette being about 250 kgs.

At Darracq's stand the new Leon Bollée car can be seen. In the front of this is a 5-h.p. motor without any provision for water-cooler, and of similar design to the motor employed on the Bollée voiturette. The transmission of power is obtained by a belt on two differential pulleys.

The Société Decauville has a large display of their well-known voiturette, and also a new car fitted with a 4-h.p. vertical motor placed in the front of the vehicle, and cooled by the circulation of water. The power is transmitted by cog wheels in a way not dissimilar to that of the voiturette, but there is the further immense advantage of securing a proper and thorough cooling. Electric ignition has been adopted, and in principle and general conception the car is very similar to that of the De Dion type.

In the large hall of the Exhibition the Gardner cars (Benz system) are shown, and there will be seen Mr. James's racing car, fitted with a two-cylinder motor of 16 h.p. The change of speed is effected in a very similar way to that employed by Amédée Bollée. Three valves are provided, the third being utilised to cut off the gases admitted to the cylinder when required so as to have a smaller compression. Thus the carburettor always acts under the same stroke, even when the gases are cut out, as the mixture is constant. The adoption of this third valve is a great improvement. This car was intended to have taken part in the Paris-Bordeaux race, but was not ready in time.

In the hall, to the left of the principal entrance, are the new Gladiator cars, fitted with a strong two-cylinder motor. The driving is by chains and cog-wheels. At the same stand a small voiturette with an Aster motor is also on view, receiving considerable attention from the public.

Another interesting display is that made by M. Noé Boyer, who exhibits a Phœbus voiturette fitted with a De Dion motor, which is placed behind. Two speeds have been provided for, but we are rather afraid the motor will have a tendency to become overheated.

Among the many voiturettes at the show fitted with De Dion or similar motors, one of the most successful applications is certainly that of M. Contouier in the "Victoria Combination." This is practically the rear part of a tricycle attached to a trailing car, and the arrangement is so ingenious that a person seated in the little car can manipulate the carburettor, ignition, etc., by the steering handle. The car only weighs 160 kilogrammes; the motor is very well aerated, and a change of speed is provided which enables the ascent of hills to be undertaken with the greatest confidence. The carburettor adopted is the Longuemare, which effectually obviates variation of carburation on any bad roads that may be encountered. Another point about this "Victoria Combination" is that the motor can be started before the driver takes his seat in the car.

The Renault voiturette is another excellent exhibit of a similar character which possesses some useful features. It weighs about 200 kgs., and has the appearance of a small Panhard car. In the front of the vehicle is a box, which constitutes an air funnel, and in this a De Dion motor is fitted. Three-speed gearing is provided, and altogether the

car is likely to prove a success. It can travel at the rate of 30 km. per hour, and will ascend any hill with two persons without the motor becoming overheated.

Another voiturette worthy of mention is the Riancy car. The general arrangement of the parts and the whole design is very ingenious, but unfortunately is not without complications. The motor and steering gear are in the front part of the voiturette, the former having one cylinder and two pistons, the explosion taking place between the two latter.

From Malines (Belgium) come M.M. Vincke et Delmer with a car very like the French Panhard on first glance, but it is considerably heavier, and the workmanship does not appear to be so noteworthy.

Curiously enough, the German firm, Durkopp, also have a car on exhibition which is like a Panhard, fitted with a Phoenix motor.

With the exception of the Serpollet steam car, steam vehicles do not seem to be making any progress, and there are none on view with any special features to be noted here. On the other hand there are many electric cars which, although shown by different firms, have many points of similarity.

A much-appreciated exhibit is that of the electric auto-cab of Chvr. Draulette, in which the passengers are seated in a somewhat novel manner. They enter from the front of the vehicle, and instead of sitting opposite each other are ranged in a semi-circle, four persons being thus comfortably accommodated.

Several of the best types of American vehicles are also on view, the Waverley, the Columbia, the Riker, and the Cleveland cars being the most notable.

From this cursory glance at the Exhibition, readers will have some idea of its scope and range; but it is our intention to deal more fully with the novelties shown in subsequent reports, so that those who read *The Motor-Car Journal* will be kept fully acquainted with the latest developments in the automobile world of France.

D. FARMAN.

#### FAST TIMES AT THE CRYSTAL PALACE.

Messrs. S. F. Edge and C. Jarrott, on Monday evening last, at the Crystal Palace, started with the idea of seeing what distance they could do in the hour. The night proved anything but favourable to record breaking, there being a lot of wind, and the air rather chilly. The times were taken by Mr. F. W. Baily, one of the official timekeepers to the Motor-Car Club, and the result proved highly satisfactory.

| Distance. |       | Time. |      | Leader. |          |
|-----------|-------|-------|------|---------|----------|
|           |       | min.  | sec. |         |          |
| 1 mile    | .. .. | 1     | 52½  | .. ..   | Jarrott. |
| 2 miles   | .. .. | 3     | 37½  | .. ..   | Jarrott. |
| 3 "       | .. .. | 5     | 24   | .. ..   | Jarrott. |
| 4 "       | .. .. | 7     | 10   | .. ..   | Jarrott. |
| 5 "       | .. .. | 8     | 59   | .. ..   | Edge.    |
| 6 "       | .. .. | 10    | 47   | .. ..   | Jarrott. |
| 7 "       | .. .. | 12    | 35½  | .. ..   | Jarrott. |
| 8 "       | .. .. | 14    | 26½  | .. ..   | Jarrott. |
| 9 "       | .. .. | 16    | 16½  | .. ..   | Jarrott. |
| 10 "      | .. .. | 18    | 8½   | .. ..   | Jarrott. |
| 11 "      | .. .. | 19    | 58   | .. ..   | Edge.    |
| 12 "      | .. .. | 21    | 50   | .. ..   | Jarrott. |
| 13 "      | .. .. | 23    | 39   | .. ..   | Jarrott. |
| 14 "      | .. .. | 25    | 29   | .. ..   | Jarrott. |
| 15 "      | .. .. | 27    | 19½  | .. ..   | Jarrott. |
| 16 "      | .. .. | 29    | 8½   | .. ..   | Edge.    |
| 17 "      | .. .. | 30    | 58   | .. ..   | Jarrott. |
| 18 "      | .. .. | 32    | 45   | .. ..   | Edge.    |
| 19 "      | .. .. | 34    | 33   | .. ..   | Edge.    |
| 20 "      | .. .. | 36    | 21½  | .. ..   | Jarrott. |
| 21 "      | .. .. | 38    | 6½   | .. ..   | Jarrott. |
| 22 "      | .. .. | 39    | 52½  | .. ..   | Jarrott. |
| 23 "      | .. .. | 41    | 40   | .. ..   | Jarrott. |
| 24 "      | .. .. | 43    | 29   | .. ..   | Edge.    |
| 25 "      | .. .. | 45    | 20½  | .. ..   | Edge.    |
| 26 "      | .. .. | 47    | 10   | .. ..   | Edge.    |
| 27 "      | .. .. | 49    | 4½   | .. ..   | Jarrott. |
| 28 "      | .. .. | 50    | 56½  | .. ..   | Jarrott. |
| 29 "      | .. .. | 52    | 47½  | .. ..   | Jarrott. |
| 30 "      | .. .. | 54    | 34   | .. ..   | Jarrott. |
| 31 "      | .. .. | 56    | 22   | .. ..   | Jarrott. |
| 32 "      | .. .. | 58    | 14   | .. ..   | Jarrott. |
| 33 "      | .. .. | 60    | —    | .. ..   | Edge.    |

C. Jarrott, 33 miles—1 hour, 0 mins., 2½ secs.

## SCOTTISH NOTES.


**230 Miles in One  
Day—A Record  
Run.**

LAST week I chronicled the fact that Mr. John Stirling, of Hamilton, left Edinburgh on Wednesday, June 14th, on his motor dog-cart to drive to London in time to attend the opening of the Automobile Club Show at Richmond. I expected, as a result, to hear of a very successful and interesting run extending over some three days, for the distance from Edinburgh is no less than 400 miles. I was rather surprised, therefore, on reaching Richmond Park on Friday morning to take a preliminary walk round the show ground and marquees, to find Mr. Stirling and his car already on the spot, and Mr. Stirling busy superintending the placing in position of the numerous show cars which had come up the previous day from Hamilton by rail. On inquiry I learned that he had reached London the previous night and had driven down to Richmond immediately after breakfast that morning, having accomplished the long journey in what must be regarded as record time in two days. Mr. Stirling informed me that he failed to reach York (203 miles) the first day as he had intended, chiefly owing to a delay of over two hours at Newcastle attending to business letters and also to the unexpectedly hilly and broken state of the roads through the Durham county and neighbourhood, over which progress was necessarily slow. Shortly after 10 p.m. Northallerton (33 miles north of York) was reached, and here he stopped for the night, having covered the very fair total of 170 miles for the day. With 230 miles before him he left Northallerton at 7.15 on Thursday morning; between 8 and 9 o'clock in the evening he was sailing into Biggleswade (45 miles from London), through which place he was piloted by the genial Dan Albone, reaching London at midnight, and thus establishing what is undoubtedly the day motor-car record for this country with 230 miles. At my request Mr. Stirling has kindly given me some particulars of his remarkable ride, which I have pleasure in reproducing:—"Shortly before 5 a.m. on Wednesday morning," writes Mr. Stirling, "I, accompanied by my man, left Edinburgh on my Stirling-Daimler dog-cart. We had no other passenger but we carried about 3 cwt. of baggage, including a supply of petrol which I estimated would last the journey to London. The morning was clear and held out the promise of a fine day, which promise was amply fulfilled. Mr. T. R. Outhwaite, secretary to the Edinburgh Auto-Car Co., Ltd., who had heard of my intended run, turned out and kindly escorted us as far as Haddington (16 miles) on his wagonette. Travelling well over the good roads, Dunbar (27½ miles) was reached at 7.5. Just before leaving the town, as we approached the handsome new hotel at the south end I observed what looked like a motor-tricycle drawn up in front, and on closer inspection found my friend Mr. Drummond, of Stirling, engaged 'oiling up' his 'De Dion' before proceeding on his way to London. As he did not intend leaving for another hour, I pushed on to Berwick (57½ miles), which was reached at 9.15. Here we 'oiled up' and breakfasted, and just as we were preparing to start at 10.30, Mr. Drummond arrived. We stopped for a few minutes at the Post Office, where the car was soon surrounded by the usual crowd of interested spectators, including the Chief Constable, who being on his way to Tweedmouth was anxious to have a ride on a motor-car, and during the run of some two miles he admitted that it was he who had stopped and summoned Mr. T. R. B. Elliot under the old Locomotives Act. After his rapid and comfortable motor ride, he naturally made up his mind that he would never do such a thing again. Leaving the Border we soon passed through Belford, and continued without stop through Alnwick (29½ miles from Berwick), Morpeth (48½ miles), to Newcastle (63½ miles), which was reached at 3.45. Being detained by business correspondence, I did not leave Newcastle till 6.30. Here the state of the

roads perceptibly changed; instead of the fine even surface of the previous sixty miles we found the roads much broken up by heavy traffic, and out of consideration for my 'trusty steed,' I pulled down to the second speed. This speed predominated right through Durham (14½ miles), improving, however, towards Darlington (33 miles), and on to Northallerton (49½ miles), arriving at 10.15. We stopped here for the night. After an early breakfast we left Northallerton at 7.15, for York (32½ miles), which was reached at 9.10. The roads continued to improve, and, as our times indicate, we were able to make very good running, especially through the thinly populated districts, where villages were few and far between. Doncaster (66½ miles) was reached at 11.15. This run from Northallerton to Doncaster was completed without stop, and was the longest 'non-stop absolute' run on the journey, viz., 66½ miles. An hour and a quarter was spent here in replenishing the petrol tank and luncheon, and we left again at 12.30 for Grantham (52½ miles) which was reached about 4 o'clock. A fifteen minutes stop was made at the Post Office there, after which we went on to Stamford, reaching Stamford Hotel (73 miles) at 5.15. We left Stamford at 6.15, going by Norman Cross and Eaton Socon to Biggleswade (45 miles) at 8.45, where Mr. Dan Albone was good enough to put us on the best route to London. Darkness was coming on, and we lit our lamps here and started on the last lap of our journey. Passing through Hitchin, Hatfield and Barnet, we reached London at midnight, making our total for the day 230 miles. Although some fast running was made on this journey, in passing through towns and villages the speed was reduced to six to eight miles an hour, and along the whole route the passage of the car excited great and in many cases enthusiastic interest. I may say that the only damage inflicted on my car by the trip is one broken leaf in the hind springs, which I did not observe till near London. The car was built more than a year and a half ago, and has been in constant use since, its last journey bringing up its running to almost 12,000 miles. During the Richmond Show it has been on the track daily, and appears to run better than ever. The cost of the Edinburgh-London trip, I find, works out at less than ¾d. per mile."

**The  
Show.**

As I hinted last week, the Scottish motor-car exhibits at Richmond would be very worthy of inspection, and I thought would compare favourably with anything in the Show, either or English or foreign manufacture. I was scarcely prepared, however, to find that on all hands the productions of the Hamilton firm were acknowledged to be designed and finished in the finest style, and I dare say this will not escape the eyes of the judges.

**Scottish Visitors  
at  
Richmond.**

AMONG the visitors from the North at the Show I observed Mr. P. Drummond, of Stirling, looking fit and well after his "tricycle trip" from Stirling to London. He came up more leisurely than the Hamilton crew, but did some excellent work. From Edinburgh I noticed Mr. John Love, manager of the Edinburgh Auto-Car Co., Ltd., with one or two of his directors; also Mr. McArthur, of Perth, and other familiar faces from Glasgow.

**Stirling's  
Victoria de Luxe.**

I HAVE secured from Messrs. Stirling the first photograph of their Victoria de luxe fitted with a new Pennington motor, and which did not reach Richmond until the middle of the week, but which attracted an enormous amount of attention.

"BROWN HEATHER."

## CORRESPONDENCE.



### A TRIP TO THE WEST.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The following may be of interest to your readers, not only in showing the utility of the motor-car, but also in pointing out the exorbitant charges of the railway companies if they once get the motor-car man in their clutches.

Accompanied by my wife I went for a run from London through Aylesbury to Farringdon, where we put up for the night. The next day I had a short run into Stroud (Gloucestershire), and took friends up each of the five valleys running out of the town. I put up for the second night at the George Hotel. I would strongly recommend this route to anyone wanting a capital run, as the roads are good all the way, and the scenery is splendid. The hills are not at all bad, and my old Daimler took them easily. I started on the next day through Wootton Underedge to Bath, where we lunched, and the third night found us at the Three Choughs, Yeovil. On the following day, Sunday, we visited friends in Yeovil and delayed starting till four o'clock. We got to Exeter, and spent the fourth night at the New London Hotel, Exeter. On the Monday I started for Torquay, going a long way round through Teignmouth, arriving at Torquay in time for tea. Staying at the Queen's Hotel we spent three days in the locality, returning each night to Torquay.

The men in the stable yard where I put up objected to washing a motor-car, saying that they did not keep engineers there, so I saved the money, excepting one day when I went to Totnes and found the men there had more sense. I told them if they cared to wash the car while I was going down the Dart they should have the 1s. 6d. I usually paid. On my return I found the car nicely washed and dusted. After spending three nights in Torquay I commenced the return journey, putting up at the Castle Hotel, Taunton, and leaving the next day for Andover, where I put up for the ninth night, thus leaving an easy day's run for the finish to London. But I had noticed a slipping of the gear wheels; so I had a piece of iron made to force the bevelled wheels deeper into the gear. This improved matters, and I thought I should get home easily; but suddenly there was rather a bad smash up of cogs in the gear box. I then found that the cause of my trouble had been one of the bolts working loose on the main bearing in the gear case. It had broken and dropped into the gear case, damaging the gear wheels. The vibration thus caused had broken the petrol pipe and I had lost my petrol. The only chance I had was to accept the services of a hay wagon, and be towed to Oakley station on the London and South Western Railway. I asked the station-master the cheapest way to send the car to London, and as I was in no hurry he recommended goods train; so I sent it by that train, and was surprised to be charged £1 16s. 4d. for the fifty miles transport, or nearly 9d. per mile. It was a bad break-down, but it will have to be a much worse one before I shall again put the car on the rail, as I could have towed it home by road for less. I should add that I found the hotels I have mentioned comfortable, and that I had no trouble in getting supplies of petrol, although I had made no previous arrangements for it.

South Hampstead,  
June 19th, 1899.

Yours truly,  
E. ESTCOURT.

### THE AUTOMOBILE CLUB'S LONG-DISTANCE TRIALS FOR ELECTRICAL VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to your paragraphs in *The Motor-Car Journal* for this week, I wish to observe that the four-wheeled electric buggy which is built on my system carries my accumulators and controller, was furnished with a battery that had run 500 miles already under most trying conditions, and at speeds of 26 miles an hour and more. The battery was sealed up, and the car did not only the fastest

hill climbing on Petersham Hill, but, with the judges' seals attached, ran the next day the long distance trial. On that day the distance covered was 36 miles in 3 h. 9 m., as per our cyclometer and the watch which we carried on the buggy.

The reason we make the distance more than stated in your columns is due to the fact that on two occasions the vehicle was taken out of the proper course by the observer, who was on board. I also wish to state that, though our carriage is considerably smaller and lighter than the Mackenzie Company's phaeton (Riker system), yet our vehicle carried 28 lb. more weight in passengers. I also beg to challenge the statement that the Mackenzie carriage did anything like 29 miles before the running down of the cells. It may interest you to know that the open circuit voltage of 40 of my cells before the hill-climbing test was 89 volts, and the open circuit voltage after the test was 88 volts. The open circuit voltage after the long distance trial was 81 volts directly on stopping, and then rose to 84. We could easily have done the distance over again at any average speed up to 18 miles an hour. I shall be greatly obliged by your inserting this letter in your next issue.—Yours faithfully,

ELECTRICAL UNDERTAKINGS, LIMITED,  
12 Miller Street, Camden Town. HENRY LEITNER.  
June 16th, 1899.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to your description of our vehicle in the electric motor trials at Richmond in your last issue, I should be glad if you would call attention to the fact that our battery was only charged for twenty miles, as explained to the judges. We were also labouring under the disadvantage of having four of our cells broken overnight.

If you will therefore call attention to this in the next issue of your valuable journal, we shall be much obliged.

London, S.E.,  
June 19th, 1899.

Yours faithfully,  
A. MACKENZIE.

### THE SPEED OF MOTOR-TRICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It has given me considerable pleasure this year to be present at the track motor races which have been held at the Palace by the Motor-Car Club, and I must say that for interest and excitement this particular sport has a fascination for me. One point I should very much like to see threshed out is as to which is the fastest motor-tricycle at present in England. On May 6th, Mr. Jarrott beat Mr. Wridgway in the five-miles race by a mere length. On Whit Monday Mr. Wridgway won both the mile handicap and the twenty miles scratch, but Mr. Jarrott had bad luck in the earlier part of the race, and Mr. Edge was also not riding up to his best speed; and the question is still an open one in my mind as to which is the speedier of the three. As Mr. Weigel is also confident that he can easily beat any of the above-mentioned gentlemen on his new machine, I think that an open match between these speedy riders would prove of very great interest. As I understand there will be a Motor-Car Club race meeting at the Crystal Palace on July 1st, I shall be very pleased to put up a silver cup for competition for the purpose, firstly, of seeing some good sport, and, secondly, for the purpose of finding out which is really the faster.

I trust, therefore, that Mr. Baily will see his way clear to include an item of this description, which I would suggest should be for ten miles.

Hampstead, N.W.,  
June 20th, 1899.

Yours truly,  
FRANK F. WELLINGTON.

LAST Thursday week Messrs. Guinness, the well-known brewers, started an experimental motor-lorry, which ran well till Monday last, when it collided with the kerb and threw out one of the porters.



### FURIOUSLY DRIVING A MOTOR-CAR.

At Retford on Monday, Leonard Woodbury, Clifford Robinson, and James Clarke, all of Chiswick, London, were summoned for driving a motor-car through the streets of Retford on May 30th at a furious pace, to the danger of the public. Mr. Williamson appeared for the defendants and explained that there was no dispute as to the furious driving. The defendants, however, were now on the Continent, and could not appear to answer the summons, except at great inconvenience. They had instructed him to appear and offer their apologies to the Bench for having given any trouble. Police-Constable Evans said the defendants rode at a furious pace down Bridgegate. He thought the rate about twenty miles an hour. John Smith, a painter, in the employ of Messrs. Hopkinson, said the car passed within ten inches of the ladder on which he was working. The defendants were fined £1 13s. each, including costs.

### SERIOUS MOTOR-CAR ACCIDENT.

A SERIOUS accident to a motor-car occurred on Monday last at New-bridge Hollow, a well-known place on the Chester highway, between Altrincham and Knutsford, and three persons were injured. Shortly after four o'clock the car, which belonged to Bond's Soap Company, Salford, was being driven towards Altrincham, in charge of Mr. H. Barnes, a traveller in the employ of the Company. With him were two ladies, named Mrs. Scaling, wife of the manager of the firm, and Mrs. Wood Smith, both of whom belong to Manchester.

As the car was descending a deep slope at a fast rate, about two miles from Altrincham, there was a terrific explosion, and almost instantly the oil ignited, and wrapped the car in a sheet of flame. The vehicle turned over, and Mr. Barnes, who was pinned beneath it, received shocking burns. He was rescued by a man named George Whitfield, a gardener at the residence of Mr. Heywood, which is close by, but he was quite unconscious, and was conveyed to the Altrincham Infirmary.

Both ladies were slightly injured. The bonnet of one was burned off her head, while the hat of the other lady was also partially burned. The position of Mrs. Scaling was one of great danger, and she informed a reporter that she must certainly have been burned to death but for the help promptly rendered by a man who dragged her away from the burning car. The ladies were driven to the infirmary, and, after being attended by the medical staff, were allowed to go home. The car was totally wrecked, and the remains were tossed into an adjoining field. The whole of the contents were also destroyed by the fire.

#### TRUE ACCOUNT OF THE ACCIDENT.

A Manchester *Evening Chronicle* representative called upon Mr. Scaling, at the works in Worsley Street, Salford, and was given what that gentleman called the true account of the affair. In the first place, Mr. Scaling asserted that the reports published in the morning papers were very much exaggerated.

"It is not correct," he said, "to state that an explosion took place. Nothing of the kind occurred. I have carefully examined Mrs. Scaling and Mrs. Smith, and they agree in almost every particular. According to their version, they were travelling at the rate of twelve miles an hour. There are four rates at which the car could travel, three, six, nine, and twelve, and the indicator pointed to twelve. They were descending a slope, and suddenly, from some yet unexplained reason, the car swerved into the footpath. The contact with the banking caused the car to up end "nose" downward. The noise from the impact with the earth would probably account for the belief that an explosion had occurred. As the car is hooded, you will see that when on end all possible exit for people inside is practically cut off. That was exactly the position in which my wife, her friend, and the driver were placed. It has been stated that Mrs. Scaling was rescued from her perilous position by a gentleman who was passing. That is not so. She managed with great difficulty to squeeze out through the small opening, and afterwards to pull Mrs. Smith out. This, of course, was not done without her sustaining a large number of bruises. As soon as they had got out a cyclist came along, and he with Mrs. Scaling partly lifted the car whilst Mrs. Smith pulled the driver out by the shoulders. All this time the van had been blazing furiously, for immediately the car was upset the oil was forced through the Bunsen burners, and the blaze increasing, quickly set the wooden box covering the works on fire." "Fortunately," continued Mr. Scaling, "my wife was not burnt, nor was Mrs. Smith. They were very badly bruised about the head and body, and were greatly shocked. Barnes was burnt about the legs and hands, and his condition when conveyed to the Altrincham Hospital was considered critical. I am glad to hear, however, that he is much better this morning. I have to thank a gentleman, whose name I had not been able to get, for his kindness in taking Mrs. Scaling and Mrs. Smith to the hospital in his trap and Barnes on a lorry. By the way, Barnes is not a traveller, as was stated in one of the papers. He is the driver." "Have you had accidents with the car before?" asked our reporter. "No. It have always run with perfect ease before, and we have never had cause for complaint. Barnes, in addition to being a very experienced driver of motor-cars, is a practical mechanic. He has driven the car in London, Liverpool, and Manchester, amongst the thickest traffic, and that fact makes me hesitate at blaming him for the accident. At the same time I do not think it would be fair to say the car was defective until I have heard Barnes' story." "Where

was the car made?" "We bought it from the makers in Coventry, where, of course, we shall send it for renovation." "Is there anything left to renovate?" "Oh, yes; all the machinery is there, but badly scorched." The representative was afterwards taken into a shed where the remains of the car were locked. It presented a very wrecked appearance. All the woodwork remaining was on the two front wheels. The rear wheels were burnt to the axle, and not a scrap of the covering remained. The car was not insured. On inquiry at the Altrincham Hospital on Tuesday morning it was stated that Barnes had passed a good night, but was still undergoing considerable pain.

### A DRUNKEN DRIVER.

ERNEST EUGENE HICKS, a motor-car driver in the service of the Post Office, was summoned before Mr. Horatio Davies at the Guildhall Police Court on Friday last, for being drunk whilst in charge of a motor-car.

Constable 250 saw the defendant driving through Barbican into Long Lane, West Smithfield, at a fast pace. He subsequently heard a tremendous smash, and running down Long Lane he saw the defendant's motor-van had dashed into the front of the Portland Arms, smashing all the windows and the front. The motor, of which the defendant had lost all control, was also seriously damaged, the hot water escaping. The defendant was drunk. He pleaded that he had been a teetotaler for a long time, but on the previous day, owing to the hot weather, took several glasses of beer. He received a very good character.

Sir Horatio Davies said it was a most serious thing for a drunken man to drive a horse, but when it came to a cumbersome motor-van the danger was increased. It was not only a serious matter to the defendant's employers, but to the public. He imposed a penalty of 40s. or one month's imprisonment.

### MOTOR-CAR ACCIDENT ON NORTH DEESIDE ROAD.

IN Aberdeen Sheriff Court on Tuesday last—Sheriff Robertson on the bench—proof was led in an action at the instance of Wm. Cromar, plumber, 260 Union Grove, Aberdeen, against William Harper, manager in Scotland of the Benz Motor-Car Co., for £500 for personal injuries alleged to have been caused by a motor-tricycle, belonging to and driven by defender, running into and knocking down pursuer, in consequence of which he sustained a compound fracture of his left leg in two places. It was also averred that pursuer's bicycle was damaged to such an extent as to render it practically valueless. Pursuer's version of the occurrence was that on August 6th last, he, along with A. Mitchell, brass finisher, 258 Union Grove, and Charles Ross, builder, 74 Devonshire Road, Aberdeen, went for a cycle run. They had a spin along the north Deeside Road, and crossed to the south road by the Miltimer Bridge. They called at the Mill Inn, where their attention was attracted by an itinerant showman who was exhibiting a strength-testing machine near the door of the inn. Pursuer and his friends had several turns at the machine, and then went back for their bicycles, which were leaning against a pailing near the inn door, while the showman proceeded with his machine to the left-hand side of the road. A small crowd gathered round the showman, and pursuer and his friend, leading their bicycles, went over to the left-hand side of the road also, and stood holding their bicycles on the outskirts of the crowd watching the proceedings. While they were thus engaged a motor-tricycle car driven by defender swept down upon them, and struck pursuer and his bicycle with the result mentioned. The motor-car, pursuer averred, at the time of the collision was being driven by defender at a furious and reckless rate of speed, at a part of the road which was usually crowded on a Saturday afternoon. Indeed, the car, according to pursuer's statement, was being driven at a rate of over twenty miles an hour. In consequence of his injuries, pursuer was unable to attend to his business, and the consequence was that it came to a standstill. Defendant had been called upon to make reparation, but had declined, and hence the present action had been brought.

The defence was that pursuer had not been injured through any fault of the defender or anyone for whom he was responsible, and that consequently he was not responsible for reparation.

His lordship, after hearing evidence for the pursuer, adjourned the case for further proof to a date to be afterwards fixed.

Mr. J. M. Ferguson, advocate, is agent for pursuer, and Mr. Alex. Blacklaw, solicitor (for Mr. R. D. Leslie, advocate), is agent for defender.

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# THE Motor-Car Journal.

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## COMMENTS.



### The Automobile Show.

In sunshine the show was opened, and in sunshine it closed. Although at times the weather was threatening, yet the Exhibition suffered but little from the rain. Just a few hours one day, that was all. The attendance was never satisfactory, and the result will be, we understand, a call on the guarantors to the extent of over fifty per cent. of the amount guaranteed. Some business was done, and a few firms expressed their satisfaction at the results, but the majority of exhibitors were not of the same way of thinking. Richmond is out of the way and difficult of access from the metropolis. Most of the trains during the day from Waterloo are supposed to take forty-five minutes by the time-table, but, as a matter of fact, they took much longer.

### The Awards.

In another column we give a list of the awards made at Richmond, and, as is usual, these awards will not fail to cause dissatisfaction to those who were not fortunate enough to gain the highest honours. We are unaware of the lines the judges worked upon, and we, with others, await with interest the publication of their report. This report the unsuccessful competitors are entitled to expect, and we trust there will be no unnecessary delay in its appearance.

### Close of the Show.

HAD the public been present in numbers at Richmond, the demonstrations of control by drivers would have done much to have allayed any fears people may have entertained of the risks of riding in motor-cars. The way the vehicles were running in and out and around each other on the grass was simply wonderful, and it is surprising so few collisions occurred. Those that did occur were in no way caused by an absence of control, but rather from local circumstances. Going from one enclosure to another was a sharp right-angle turn, and here a Headland vehicle was run into, but beyond bending some spokes no harm was done. Mr. Lanchester was leaving the grounds on his car, and the way was signalled clear. The "Lifu" wagonette, however, was coming on at full speed, and the result was the Lanchester car sustained a bent axle and had two wheels buckled. On the last Saturday Mr. Zacharias rode full tilt into an International, bending the latter's axle, while at the conclusion of the motor tricycle-handicap, Mr. Roger Fuller, one of the competitors, fell and brought down Mr. Edge. Both machines were damaged, but the riders were unhurt.

### The Question of Ignition.

THE recent terrible death of the Altrincham driver, Barnes, again compels attention to the question of ignition. This question has arisen many times, but mostly in relation to motor-tricycles, and the result is that very few tricycles now use "lamps." We hold the opinion that any

tricycle having other than electric ignition is absolutely dangerous, and as such should not be allowed on the roads. Regarding heavy cars, the question is more open; but very many people, rather than risk accident by fire, will undoubtedly use batteries. We certainly shall do so in the new (English) car we are having built. We are not alarmists, but feel that the risk of the "link in the chain" is quite sufficient risk to take.

### Driving Chains for Motor-Cars.

ONE of the visitors to the Automobile Club's Show at Richmond on the closing day was Mr. Hans Renold, the well-known cycle chain manufacturer, of Manchester. It is now fairly well known in automobile circles that Mr. Renold is preparing to take up the manufacture of driving chains of both the block and roller type for motor-cars, but we learned from him on Saturday last that owing to the extensions at present being made to his cycle chain-making plant some considerable time will elapse before the new motor-car chains will be ready for the market.

### A Map for the South-West.

MR. HARRY R. G. INGLIS, to whose road maps reference was made last week, does not let the grass grow under his feet—or is it a motor-car on which he scampers over counties as though they were parishes? We have just received a copy of his "contour" road map of Devon, Cornwall, Dorset, Somerset, and Wiltshire. The admirable principles already commended find further illustration in the present volume, which has a series of elevation plans of the roads, with measurements and warnings. So far as we have examined, the work can be thoroughly relied on, and its value is enhanced by the general notes on the roads and the ferries, the latter assuming a position of some importance to tourists in the extreme south-west. There is only one attempt at the reproduction of photographs in the book, and of that the less said the better. Otherwise, only praise can be tendered to Messrs. Gall & Inglis on the way in which the work has been issued.

### A New American Two-Seated Petroleum-Spirit Motor-Car.

A NEW two-seated three-wheel petroleum-spirit motor-car is being put on the market in America by the Bramwell-Robinson Co., of Hyde Park, Boston, Mass. According to the *Horseless Age*, the frame of the vehicle is built up of wood and steel. The body of the car, which is not located so high as is usual in American motor-vehicles, is entirely separate from the frame, and is supported thereon by plate springs at the front and C springs at the rear. The motor is of the horizontal single-cylinder type; it is stated to be of 3 h.p., the cylinder being 4 in. diameter by 6 in. stroke. Cooling is effected by radial fins fitted around the cylinder, while the ignition is electrical. The motor, which weighs 240 lb., is arranged on the front portion of the frame, the fly-wheel being located under the passenger seats. The road wheels are arranged two in front and one at the rear; a

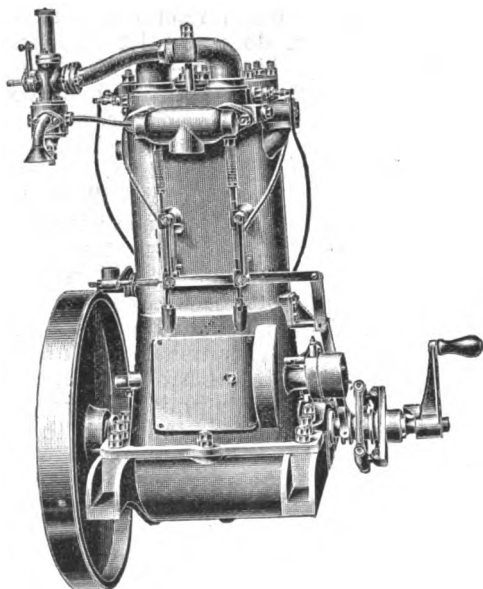
feature of them is the employment of tubular steel spokes; pneumatic tires are fitted. Two forward speeds are provided, by means of which and the electrical ignition device any desired speed up to sixteen miles per hour can, it is stated, be attained. The power is transmitted directly from the motor-shaft to the rear axle through chain-gearing, the two-speed gear on the motor-shaft being controlled by a friction clutch. The petrol storage-tank is arranged under the seat, while a handle on the steering standard actuates a band-brake on the hub of the rear road wheel. Steering is effected by means of the front wheels in the usual way, and all the control levers are mounted on the steering-standard. The car is stated to weigh, complete, between 6 and 7 cwt.

#### An American Automobile Club.

THE *Horseless Age* announces that a meeting has just been held in New York of gentlemen interested in the horseless vehicle movement, when the formation of the Automobile Club of America was decided upon. A committee has been appointed to draw up the necessary rules and regulations.

#### A New Petroleum Motor.

LAST week we had the pleasure of meeting Mr. Napier, who kindly conducted us over his extensive works at Lambeth. Mr. Napier is making a speciality of petroleum motors, both for launches and cars. The motor is of the vertical twin-cylinder type, the cylinders being 4 in. in diameter by 6 in. stroke. The ignition is electrical, the sparking plug employed being of the usual form. The inlet and exhaust valves are so arranged that they can be readily removed for cleaning purposes, etc., it only being necessary to slacken two screws and remove one bolt to enable the valves to be withdrawn. The cylinders are provided with a



water-jacket for cooling purposes, the water circulation being maintained by means of a small pump. A special device is also provided for raising the compression valve when putting the motor in operation, a crank handle being provided to facilitate the starting. Ample provision is made for the lubrication of the various working parts, the cranks running in an oil-containing chamber. A centrifugal governor on the motor shaft is also provided, this controlling a hit or miss device which cuts out one cylinder at a time. In connection with their motor, Messrs. Napier have adopted the Longuemare form of carburettor, a device which is very largely used in France, and which has already been described in these columns. The normal speed of the motor is 780

revolutions per minute, at which the engine is claimed to develop 7 b.h.p. Slower or quicker speeds can be obtained by regulating the sparking device. The weight of the Napier motor, complete with carburettor, fly-wheel, and water-circulating pump, is stated to be about 3 cwt. Mr. Edge has had his Panhard engine taken out and Mr. Napier's substituted, and has also replaced his "lamps" with electric ignition.

#### Mr. Butler's Benz.

WE suppose if a ballot was taken at the Automobile Club as to who was the most popular member, the name of Mr. Frank Butler would easily head the list. His geniality and *bon homme* is proverbial, and most members are, or rather were, interested in his double-cylindered Benz with the big bright brass lamps. Alas! he has now disposed of that machine, but proposes, we understand, to purchase an 8-h.p. Benz as well as a small "Lifu" car. We believe Mr. Butler's idea is to keep one machine at Shiplake, where his houseboat is usually moored, and the other in London. We hope he will not be like the man with two umbrellas, who, when it was wet, always had both umbrellas at the other end.

### LONDON STEAM OMNIBUS COMPANY SETTLEMENT.

WE have received a copy of a circular sent out to a group of London Steam Omnibus shareholders by Mr. W. J. Hunter, who has been acting on their behalf in the controversy with the present management and the promoters. The circular is marked "Private and confidential," but it is rather late in the day to regard steam omnibus matters from that point of view. Briefly, Mr. Hunter propounds a scheme, which has been accepted by the other side. Under this scheme (1) the purchase price for the licence is reduced from £210,000 to £50,000 by the surrender of the £140,000 vendors' shares and the acceptance of £50,000 in cash in lieu of £70,000. This leaves £28,304 in cash still to be paid to the vendors out of the £44,000 in hand, or still to be called. (2) Extension of licence is obtained, whereby exclusive right of the steam system is extended to cars generally, and a virtual monopoly obtained in the London area for all British Motor patents (whether petrol, electricity, or steam) in so far as they relate to omnibuses. It is to be noted that the suggested new board decline to assume responsibility for their value. (3) The promoters have to pay the plaintiff's costs of the combination, and further licences are extended, and a provisional contract entered into for constructing vehicles, although at a cost above that named in the prospectus. (4) The present directors retire, and are replaced by certain members of the board of the London Tramways Company. These are the chief provisions of the new arrangement, and under the whole circumstances Mr. Hunter is to be congratulated, especially upon the last point to which we referred. We are not able to follow him in his arrangement to pay the vendors a still further considerable sum in cash, and there is no reason to feel satisfied with the absence of any provision giving the shareholders a right to withdraw and obtain the repayment of their money. But if there is anything in the possibility of business for the Company, it will probably do as well under the new arrangements as could be expected, and the fact that the Lawson interests are eliminated is certainly a good point gained.—*Pall Mall Gazette*.

THE C. H. Black Mfg. Co., Indianapolis, Ind., have issued a catalogue of their petroleum-spirit motor-vehicles, of which five styles are shown—a ten-passenger wagonette, a light delivery, a physician's phaeton, a dos-à-dos trap and a business wagon. Motors of 2½ to 8 h.p. are employed.

## MIDLAND MOTOR NOTES.

By "VERAX."



**The Motor  
Manufacturing  
Company.**

I HAVE called at these works and found the firm overwhelmed with orders for both small and large cars; and, in fact, they have been obliged to refuse orders, as their present plant, complete as it is, is not large enough to cope with the work. At the present moment the firm are fitting about £2,000 worth of new machinery to cope principally with their large trade in De Dion motors and tricycles. I have myself been using one of the firm's 1½-h.p. motors on a tricycle, and there is no doubt that the workmanship of these small motors leaves nothing to be desired, the power being indicated on each motor prior to its leaving the factory. Even in a small motor of this class, as apart from the carriage or tricycle which it propels, there is an enormous amount of work and accurate fitting of parts, which it is perhaps quite beyond the "man in the street" to even imagine or think of, with the result that he is quite unable to appreciate its value. Of course, this remark applies to large motors as well as small, and perhaps in the same degree; but the fact remains that in a small, compact-looking De Dion motor there has been a great amount of time spent in fitting and adjusting, which is perhaps quite equal to the time taken in machining the various parts. It therefore stands to reason that to turn out several of these motors per week, not only is a special plant of machinery required, but also a skilled staff of men. I understand that only during the last week the firm have been obliged to refuse one order for 500 motors, given by a Birmingham firm, the motors having to be delivered at the rate of twenty-five per week. With the new plant the Company hope to be able to cope with much larger orders than this, and to supply nearly three times that number of Dion motors per week. Of the various classes of petrol motors for small power the Dion is deservedly first favourite, on account of its compactness, reliability, and, especially in the 1899 type, the great ease of access to all its vital parts. Of the larger cars which the Company are building much has previously been said in the columns of this paper. The large chars-a-bancs are becoming very popular, chiefly on account of their size and comfortable carrying capacity, and, secondly, on account of their neat appearance and finish. This latter point is a most important one when cars are built for the use of the public for hiring purposes, as a car of nice appearance is naturally much more likely to attract the pleasure-seeking folks; and the success of a motor-car service will be found to depend very largely on this important point. The Motor Manufacturing Co. make a rule never to turn out these vehicles unless they are exceptionally well finished, both as regards their machinery and also external appearance, and to this fact must be attributed the large amount of orders which the Company have on hand. One town in England alone has ordered thirty of these large cars for hiring purposes, namely, Sunderland; only six at present have been delivered, but the others are leaving the works weekly. All the cars for Sunderland are of the wagonette type, and are well patronised by the travelling public. A firm in Edinburgh has also placed a large order for wagonettes and chars-a-banc for the same purpose. At present the Company are capable of turning out two complete cars in this department per week. The small two-seated car which the firm have nominated "Princess" seems to attract general admiration. One of these cars with a single-cylinder engine was shown at the Richmond Show in an unfinished state; it is now daily expected back at the works to receive its finishing touches. Although quite a new departure, the Company have already booked orders for three of these cars, which looks as if they will shortly be doing a large business in them. Mr. Iden,

the ever energetic manager, does not, however, stop at a good thing, but when he has obtained one immediately strikes out for another, hence the various types of car which he produces. Quite recently Mr. Iden tried his new car of the Princess type, with a double-cylinder engine, and her maiden run proved a very successful one, the car accomplishing a thirty-mile run without a hitch of any sort, and to Mr. Iden's perfect satisfaction. On my way from the works I saw one of the Company's latest wagonettes, capable of carrying about fourteen people, running through the town, her size and smart appearance attracting much attention.

**The Daimler  
Motor Co.**

"WELL, we are back again from the Show," were the first words with which Mr. Critchley greeted me when I called upon him at his office this week, and which he emphasised with a kind of sigh of relief. Much as the public enjoy a show, and necessary as it is for manufacturers to put in an appearance, yet at the same time it involves a great amount of work and, I think, unnecessary expense for the manufacturer; and there is so much to be seen at the same time by the public that I think the feeling after it is over is mutual. Altogether, Mr. Critchley informed me, they have about seventy vehicles in course of erection, which shows that the firm are doing a large business. Several 11-h.p. cars are being built, but these, I understand, are only made to order, none being intended for stock. I saw one going out for trial on the occasion of my visit to the works. These cars, as is well known, are very speedy when occasion requires, and also very good hill-climbers; but with their four cylinders there is necessarily a good deal of complication, and a large amount of cooling water is necessary. At any rate, the Company is just as busy as it possibly can be, I am told, and, as it is generally known, the Daimler factory is second to none in this country.

**An Amusing  
Instance at the  
Show.**

WHILE mentioning the Daimler Co. in connection with the show the following incident occurred to me as being very amusing, and more or less instructive. It appears a small Daimler car was running on the track, and was stopped opposite a small batch of people at the track side. For some reason or other a small block of wood had been placed against one of the wheels. A rather timid old gentleman became very interested in the car, and ventured to ask for a trial. This was, of course, at once acceded to by the smart driver, after a thorough explanation of all the good points of the car had been given. However, when the gear was applied the motor suddenly stopped, and the smart driver immediately commenced an inspection of the motor, evidently saying some very nasty things about it *sotto voce*, when the timid old gentleman in the softest way possible said, "Excuse me, sir, but why is that block of wood there in front of the wheel?" There was no reply, but the wood was removed, the starting handle applied, and soon the motor was careering gaily around the course, and the small batch of people left behind smiled.

**A Leamington  
Venture.**

LEAMINGTONIANS were advised by an advertisement in a local advertising sheet that motor-cars were to be run to places of interest in the neighbourhood. It appears that the manager of the Great Western Hotel has hired one or two cars for a week with a view of ascertaining whether the public are likely to take kindly to this mode of enjoyment. On the first day of the week one motor started for Stratford with only two passengers and the driver, so that it would appear the public do not take quite so kindly as they might do. However, I hope they will take more readily to it for the rest of the trial week, otherwise I am afraid the scheme will fall through. The car which ran was a Daimler of

Coventry manufacture, but converted from a parcel van into a wagonette locally some time since under Mr. Crowden's instructions. Though not the best type of car, apparently, to start a motor-car service with in a fashionable town like Leamington, yet I understand better cars will be forthcoming later on. Leamington is an ideal centre, as far as roads and scenery are concerned, for a motor service, but the inhabitants are of a very "horsey" character, and do not take at all kindly to the new method of locomotion, though, judging by the result of their apathy for railways when these were being constructed years ago, whereby the main lines of two important railways were diverted, they are not likely to make a very strong opposition to the undoubtedly useful conveyance, the motor-car. However, the energetic Great Western Hotel manager deserves every encouragement in his venture.

## THE MOTOR-CAR EXHIBITION.

### RAILWAY FACILITIES.

FROM July 3rd to July 15th a number of cheap excursion trains will be run from the provinces, which will materially lessen the expenses of those attending the Motor-Car Exhibition at the Agricultural Hall, Islington, next month. All the leading English lines will be running trips on at least one day during the event, and full particulars can be obtained from any railway station. Some are organising three or four excursions in the coming fortnight—as, for example, the Great Central Railway, which will have special excursions on the 5th, the 8th, and probably the 10th of July. The London, Brighton and South Coast Railway have cheap day return trips from nearly every station on their line.

Many visitors are expected from Ireland, where interest in other forms of traction than horse haulage is developing, and on Monday, July 10th, the Belfast and Northern Counties Railway will have a cheap excursion to London, the tickets being available to return at the close of the Exhibition, or within sixteen days from the 10th prox. On Friday, the 7th, an excursion *via* Waterford and New Milford will be run by the Waterford, Limerick and Western Railway of Ireland.

The Scotch railways will also run special excursions during the period of the Exhibition. On Friday, July 7th, and on the following Friday as well, the Great North of Scotland Railway will have special excursions; and on the 8th, 13th, and 14th the Caledonian Railway Company will afford special facilities to visitors to the Motor-Car Exhibition.

We would cordially recognise the way in which the promoters of the Exhibition have been met by practically the whole of the railway companies having termini or running powers into the Metropolis, and would congratulate automobilists on the fact that so many cheap trips will enable them to see the great display at a very reasonable cost. If the railway companies were as accommodating in the matter of railway rates for motor-cars—but there, "that's another story," as Rudyard Kipling would say.

THE preamble of a Bill for the erection of a station on the Regent's Canal for the supply of electricity has been passed by the House of Lords.

At Harlesden, Victor Taylor was summoned for causing an obstruction with a motor-phæton. The vehicle in question was left all night outside a house in Mortimer Road, Kensal Rise, without any light on it to prevent other vehicles running into it. The defendant said he was staying for a time at Mortimer Road, and thought he could do the same with the motor-phæton as he did with his car in Dublin, where he left it in the road all night. The breaks and engine were locked. He had come from Ireland to answer this summons. He was fined 30s. and costs.

## AWARDS AT THE AUTOMOBILE CLUB SHOW, RICHMOND, 1899.



### DIVISION I.—THOSE CARS THAT TOOK PART IN THE TRIALS.

*Gold Medals.*—Daimler Motor Co., Ltd., for Critchley light car, Siamese phæton, and Rougemont wagonette; Steam Wagon and Carriage Co., for steam lorry; and Motor-Carriage Supply Co., for 10-h.p. and 6-h.p. lorries.

*Special.*—Delahaye Motor-Car Co., for four-seat phæton; and F. W. Lanchester for three-seat car.

*Silver Medals.*—Motor-Carriage Supply Co., for convertible wagonette; Hewetson's, Ltd., for Benz dog-cart and Benz Ideal; Automobile Association, for Mors four-seat car and Barrière tricycle; and Daimler Motor Co., for Post Office van.

### DIVISION II.—GEARS AND COMPONENT PARTS AT THE EXHIBITION ONLY.

*Gold Medal.*—Liquid Fuel Engineering Co., for steam wagonette and omnibus.

*Silver Cup.*—Hon. C. S. Rolls, for best privately-owned vehicle.

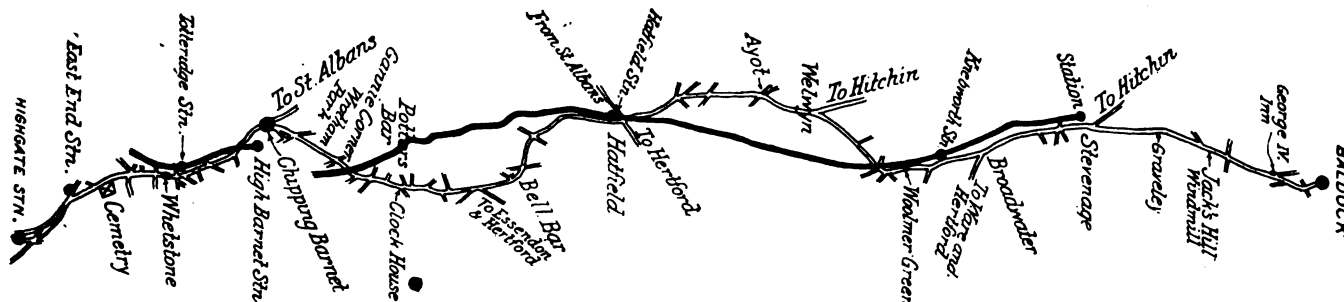
*Silver Medals.*—Liquid Fuel Engineering Co., for excellence of component parts of steam vehicles: (1) burner, (2) wheels and steering axles; Clarkson, Capel & Co., for their steam vehicles, burner, and condenser; Mackenzie Carriage Co., for design and appearance of electrical carriages with Riker frames; Electric Motor Power Co., for electric motor-carriages, controller, and steering gear; Motor-Carriage Supply Co., for electric ignition and ignition advance, and for component arrangements in Cannstatt car; Stirlings & Co., for general appearance of Stirling-Daimler motor-vehicles; A. F. Mulliner, for excellence of carriage work for motor-vehicles; Hewetson's, Ltd., for their exhibit of Benz carriages; Automobile Association, for appearance and for motor and gear construction of Gobron Brillé car; Decauville Aine, for two-seated voiturette; Motor Manufacturing Co., for exhibit of motor-cycles on the De Dion system; Mossberg Roller Bearings Co., for roller bearings; and Carless, Capel & Co.

*Bronze Medals.*—Marshall & Co., for improvements in Benz motor-carriages; Des Vignes, Cloud & Co., for excellence of design and workmanship in small steam boilers; Daimler Motor Co., for Price's tire brake; Rubery & Co., for motor-car frames; Roots & Venables, for component parts; Automobile Association, for combined petrol and lubricating tank and pump, and Khülstein-Vollmer tractor; and Ariel Cycle Co., for motor-tricycles.

*Diplomas.*—Lyon & Whitmore, for ignition tube; Southern Motor-Car Co., for improvements in Benz motor-carriages and carburettor arrangement in Papillon tricycle; John Morgan & Sons, for uniform; and Hart & Co. and W. & T. Avery, Ltd., for weighbridges erected and placed at the disposal of the Club.

MUCH as Frenchmen like automobiles, it is doubtful whether the Duke of Orleans appreciated his experience, says a daily contemporary, of one of these vehicles one afternoon last week. The Duke and his secretary arrived at Waterloo Station from his residence at Twickenham about two o'clock, and at once entered a private electric motor-car, which had previously been ordered to take them to the West End. The car was proceeding down the incline from the station to Waterloo Road when, it is stated, the driver of a hansom cab behind attempted to pass. A collision ensued, and the motor was violently precipitated against the wall on the near side, with the result that the steering gear and windows were smashed and the tires dislocated. Fortunately, the Duke and his companion escaped with a severe shaking, and they continued their journey in another cab, apparently none the worse for their escapade. In the evening the Duke was observed to return to Twickenham by his usual train.





## COMMERCIAL EFFICIENCY TRIALS.

### EXPLANATORY NOTES.

**D**URING the course of the Motor-Car Exhibition a series of "Commercial Efficiency" trials will be conducted, full particulars of which will be made known within a few days. Meanwhile, we give the route that will be taken, together with a few other particulars which will be of value to competitors and of interest to the public.

Measurements are counted from the Agricultural Hall, and are taken from Messrs. Gall & Inglis' "Contour Road Book of England" (South-Eastern Division). It is calculated that the Agricultural Hall, Islington (Barford Street entrance), is  $1\frac{3}{4}$  miles distant from the G.P.O., and therefore this distance has been deducted in both the outward and homeward journeys as given in the "Contour Road Book," making the net distance in each direction 36 miles for Classes 6 and 7; 25 miles in Classes 1, 3, 10, 11 and 14;  $12\frac{1}{2}$  miles in Classes 2, 4, 5, 9, 12 and 13; and 15 miles in Class 8.

Milestones are measured from Hick's Hall, near the Metropolitan Market. It is to be noticed that there is an error of  $\frac{1}{4}$  mile in the milestones between Hatfield and Welwyn.

General Route.—The whole of the contests will be run off on the North Road and Biggleswade Road.

|   |                  |                  |                  |                  |                 |          |
|---|------------------|------------------|------------------|------------------|-----------------|----------|
| London (Agricultural Hall, Barford St. entrance.) |                  |                  |                  |                  |                 |          |
| ROUTE   | 9 $\frac{1}{2}$  | Barnet Market.   |                  |                  |                 |          |
| FOR   | 18 $\frac{1}{4}$ | 8 $\frac{1}{2}$  | Hatfield P.O.    |                  |                 |          |
| CLASS   | 23 $\frac{5}{8}$ | 13 $\frac{7}{8}$ | 5 $\frac{1}{8}$  | Welwyn P.O.      |                 |          |
| 6 & 7.  | 30 $\frac{1}{4}$ | 20 $\frac{1}{8}$ | 11 $\frac{5}{8}$ | 6 $\frac{1}{2}$  | Stevenage.      |          |
|   | 36               | 26 $\frac{3}{8}$ | 17 $\frac{1}{8}$ | 12 $\frac{3}{8}$ | 5 $\frac{3}{8}$ | Baldock. |

### OUTWARD JOURNEY.

#### AGRICULTURAL HALL TO BARNET.

Agricultural Hall, Barford Street, Liverpool Road, Upper Street Islington, Highbury Station, Holloway Station, "Nag's Head" cross road, Highgate, junction of roads at Archway Tavern (keep to right), East End Station, St. Pancras Cemetery, "Green Man" Brown's Wells, Finchley Common, Whetstone, Greenhill Cross, Barnet = 9 $\frac{1}{2}$  miles.

(Gradients.—Entering Barnet 1 in 26.)

#### BARNET TO HATFIELD.

Barnet, Wrotham Park, Hadley High Stone (keep to right) (1 m.), Ganwick Corner (1 m.), Potter's Bar (1 $\frac{1}{4}$  m.), then take left road to Little Heath Lane (1 m.), Bell Bar (2 m.) (keep to left), Hatfield = 18 $\frac{1}{4}$  miles.

#### HATFIELD TO WELWYN.

Take left-hand road in Hatfield, and cross railway bridge to Stanborough (1 $\frac{1}{4}$  m.). Up hill for 1 $\frac{1}{2}$  m. from Limsford Mills to Brickwall House (1 $\frac{1}{4}$  m.) to Agot, thence down Digswell Hill into Welwyn = 23 $\frac{3}{8}$  m.

Note.—Ascent to Brickwall House, 1 in 16. Descent in Welwyn, 1 in 14 $\frac{1}{2}$ ; several turns, should be negotiated slowly.

#### WELWYN TO STEVENAGE.

At Welwyn bear to right at bottom of hill, then to left at church, and again to right a little further on to

Woolmer Green (2 m.), thence to Broadwater (2 $\frac{1}{4}$  m.) and Stevenage = 30 $\frac{1}{4}$  m.

Note.—Ascent and descent to Woolmer Green—1 in 16—rather dangerous. Between Woolmer Green and Broadwater, ascent and decent, 1 in 18 (caution).

#### STEVENAGE TO BALDOCK.

Take right-hand fork at end of Stevenage to Graveley (1 $\frac{1}{4}$  m.), thence past George IV. Inn to Baldock. = 36 miles.

Note.—Long ascent out of Stevenage, long descent entering Baldock.

Finishing point of outward journey, Rose and Crown Hotel.

### HOMeward JOURNEY.

From Baldock to Highgate: Reverse the route of outward journey. From Highgate turn to right through Fortress Road, Kentish Town, to Euston Road, thence via Pentonville Road, Pentonville Hill, "Angel" at Islington, Islington High Street, Liverpool Road to Barford Street entrance of Agricultural Hall.

## CRYSTAL PALACE MOTOR RACES.

**M**OTOR-TRICYCLE races will be held at the Crystal Palace to-morrow, Saturday, under the auspices of the Motor-Car Club. The following entries have been received:—

ONE MILE HANDICAP.—Chas. Jarrott, C. G. Wridgway, S. F. Edge, Hon. C. S. Rolls (scratch); J. W. Stocks, 50 yds.; E. J. Steele, 140 yds.; J. Buck, 175 yds.; M. Moyle, 175 yds.; M. Munn, 210 yds.; — Lewin, 210 yds.; W. Letts, 220 yds.; F. Eason, 230 yds.; G. White, 230 yds.; A. Goodwin, 250 yards.

FIVE MILES SCRATCH RACE FOR THE WELLINGTON CUP.—C. Jarrott, C. G. Wridgway, S. F. Edge, Hon. C. S. Rolls, J. W. Stocks, J. Buck, M. Moyle.

TWO MILES HANDICAP.—C. Jarrott, C. G. Wridgway, S. F. Edge, Hon. C. S. Rolls, scratch; J. W. Stocks, 125 yds.; E. J. Steele, 305 yds.; J. Buck, 375 yds.; M. Moyle, 375 yds.; W. Munn, 445 yds.; — Lewin, 445 yds.; W. Letts, 465 yds.; F. Eason, 485 yds.; G. White, 485 yds.; A. Goodwin, 525 yds.

MOTOR TANDEM RACE.—S. F. Edge and C. Jarrott v. C. G. Wridgway and J. W. Stocks.

THE CRYSTAL PALACE BRASSARD HUNDRED GUINEA CUP (the property of the Crystal Palace Company) ONE HOUR RACE.—C. Jarrott, C. G. Wridgway, S. F. Edge, Hon. C. S. Rolls, J. W. Stocks, J. Buck, M. Moyle

MESSRS. HEWETSONS, LTD., advise us that during the Richmond week not a single incident happened to their cars. The Nos. 1 and 2 Benz Ideals were used by over 100 persons in trial trips. The Benz van conveyed four of the staff to and from Highgate daily; and the 8-h.p. Benz brake, with ten persons up, and driven by Mr. E. J. Coles, carried over 500 passengers twice round the track.

## CORRESPONDENCE.



## HILL-CLIMBING CONTESTS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the coming hill-climbing match between the Pennington car and the Mors car, it seems to me that whichever car wins it will not give any particular satisfaction to the ordinary motor-car user in this country, as I think what we would all like to see is a competition open to every type of motor-vehicle, and it seems possible for such a contest to be arranged in this country.

We are, through the laws of the country, prohibited from racing on the road, but why should we not hold an open hill-climbing test on some very steep gradient, preferably in Kent, such as Westerham Hill, so that it would not be very much trouble for French competitors to cross over, it only being a comparatively short drive from the coast to the scene of the competition.

I believe that such a competition, if arranged at a date suitable to some of the foreign *chaffeurs*, would prove highly interesting and most instructive to us all over here, as it is obvious that a vehicle that will climb hills fast will go fast on the level if a high gear is fitted.

The class of competition I would suggest would be to go up and down Westerham Hill, say, five times, and the time each car took for the ascent should be allowed for the descent.

If, however, it took longer to descend than it did to ascend, this amount of time should be counted against it in its total hill-climbing time.

The ascents and descents should, of course, be made one after the other until the five ascents have been completed, without any interval or stop between each.

I feel sure that a test of this sort, which could be witnessed by a large number of people, held on a Saturday afternoon, would create wonderful amusement.

Trusting you will think the matter of sufficient interest for insertion in your next issue,

London, W.C.,  
June 22nd, 1899.

Yours truly,  
S. F. EDGE.

## THE HEAVY WAGON TRIALS AT UXBRIDGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the competitions for heavy vehicles recently held at Uxbridge under the auspices of the Automobile Club, I now beg to enclose a table setting out the results of the competing vehicles, including the second trial of the Bayley steam trolley, which was ordered by the judges who were under the impression that the results obtained in the first trial were too good to be true, and concluded that an error must have occurred by the official observer in measuring the fuel used.

The vehicle is constructed on the Straker system under the British Motor Patents, and its performance on the second trial represented the traction of  $3\frac{1}{2}$  tons of net load at an expense of 1.75 lb. coke per ton mile, and taking the coke at 15s. per ton is equivalent in money to 0.14d. per ton mile for fuel. This is an economy of more than 75 per cent. on any

practice yet deduced by competitive firms building self-propelling steam vehicles of the light locomotive type.

In sending you this letter I feel that the interesting result fully justifies my presuming upon your space.

Thanking you in anticipation,

I am yours faithfully,

SIDNEY STRAKER, A.M.I.C.E.

## NOTES FROM THE WORLD OVER.



It has been stated that a motor-car service has been organised on the Niger.

CAPTAIN CORDIER's motor fire engine seems to be working successfully in Paris.

THE Hon. C. S. Rolls is at present in Paris, but hopes to be at the Crystal Palace on Saturday.

WE understand that Messrs. Pope & Co., engineers, of Slough, intend commencing the manufacture of motor-cars.

ACCORDING to the general press, Edison is building an electric car that is guaranteed to travel 150 miles without re-charging.

THE Daimler Motoren Gesellschaft, of Canstatt, has made a net profit of 70,468 marks for the year ending March 31st.

DURING the meeting of the British Association at Dover, in September, it is proposed to hold an exhibition of motor-cars on the Dover Athletic Grounds.

At Richmond, on Monday last, Dr. Lehewess was summoned for furiously driving a Mors car, but the magistrates, not considering the case proved, dismissed it.

"My horse has reasoning powers, I tell you." "In what respect particularly?" "Well, instead of shying at that automobile cab he edged up to it and kicked it."

MR. HARRY MARKS, M.P., editor of the *Financial News*, and his secretary left London last Sunday in one of the Motor-Coupé Co.'s Victorias for a three weeks' trip in the West of England.

IN the Automobile Club's advertisement of the Show appeared an announcement regarding the racing between the horse and the tricycle, to the effect that the latter has been kindly lent by the British Motor Co.

MESSRS. MARCHANT & Co., mineral water manufacturers, of Bowen Street, Brisbane, write us that they are in correspondence with several English manufacturers with a view to utilising motor-vehicles for their business.

At Armley, near Leeds, last Saturday, a two miles invitation motor-cycle race was held. There were four entries, but only three starters, Mr. Winn ultimately coming in first by a lap and three-quarters ahead of Mr. Humphrey.

WE are advised that the Motor Manufacturing Co. not only were awarded a silver cup in the Automobile Club races last Saturday, but also were awarded a special silver medal for excellence in motors and motor-tricycles by the committee of judges acting on behalf of the Automobile Club.

HEAVY WAGON TRIALS, HELD AT UXBRIDGE—20 MILES—AUTOMOBILE CLUB.—JUNE 13TH, 1899.

| No. |                               | Total Weight. |      |      | Weight Carried. |      |     | Time for 20 Miles. |    |    | Water used. | Water per mile. | Fuel.      | Fuel used. | Fuel per mile. | Average speed per hour. | Fuel used per ton mile. |      |
|-----|-------------------------------|---------------|------|------|-----------------|------|-----|--------------------|----|----|-------------|-----------------|------------|------------|----------------|-------------------------|-------------------------|------|
|     |                               | tns.          | cwt. | qrs. | tn.             | cwt. | qr. | lb.                | h. | m. | s.          |                 |            |            |                |                         |                         |      |
| 41  | Steam Carriage & Wagon Co.    | 6             | 19   | 0    | 3               | 8    | 0   | 18                 | 3  | 42 | 20          | 136 gals.       | 6.8 gals.  | Coal       | 197 lb.        | 9.85 lb.                | 5.4                     | 2.9  |
| 42  | Motor-Carriage Supply Co. . . | 8             | 13   | 0    |                 |      |     |                    | 5  | 19 | 0           | 1 gal.          | —          | Petrol     | 4 gals.        | 0.2 gal.                | 3.76                    | —    |
| 43  | Motor-Carriage Supply Co. . . | 4             | 6    | 0    | 2               | 4    | 1   | 0                  | 3  | 27 | 0           | 11½ ozs.        | —          | Petrol     | 2 gals. 6 pts. | 0.1375 gal.             | 5.84                    | —    |
| 44  | Daimler Motor Co.'s P.O. Van  | 4             | 1    | 3    | 1               | 18   | 1   | 0                  | 3  | 59 | 0           | 2 gals. 7 pts.  | —          | Petrol     | 3 gals.        | 0.15 gal.               | 5.02                    | —    |
| 45  | Bayleys, Ltd.—1st trial       | 6             | 12   | 2    |                 |      |     |                    | 4  | 9  | 0           | 99 gals.        | 4.95 gals. | Coke       | 122 lb.        | 6.1 lb.                 | 4.81                    | 1.7  |
| —   | Bayleys, Ltd.—2nd trial       | 6             | 17   | 0    | 3               | 10   | 0   | 4                  | 4  | 0  | 0           | 98 gals.        | 4.9 gals.  | Coke       | 123 lb.        | 6.15 lb.                | 5.0                     | 1.75 |

## SCOTTISH NOTES.



### Show Awards.

THE duties of judges in any sort of competition or show are nearly always arduous and difficult, and in a show of automobiles with such a variety of types as were exhibited at Richmond last week the work of "judging" was no sinecure. It is usually impossible to please everybody, but from the information I gathered at the show on Friday last there appeared to be a very large amount of dissatisfaction with the awards made, as well as with the general management of the show, and I was assured by several important exhibitors that unless they could rely on better treatment at future shows the Automobile Club exhibitions would henceforth most certainly be boycotted. One reason to which considerable dissatisfaction in the awards was attributed was that in more than one instance the number of judges doing the work was an exceedingly small proportion of the judges who were advertised to act. No doubt the executive will take the lessons of their first show to heart and make amends in their next. So far as I could gather from those on the spot the impression seemed to be that the convenience of the only parties who made the show possible—viz., the exhibitors—was very much neglected, and in many cases their operations hampered by needless restrictions. A little more official consideration in this respect would have, I venture to think, much improved the number of entries in the various competitions and gymkhana. No doubt good has been done by the show, although the distance from London affected the attendance of the public.

### The Agricultural Hall Show.

FROM conversation with the various makers at last week's show, a much greater interest appeared to be centred in the show which opens at the Agricultural Hall, Islington, on Monday, July 3rd, and expectations of doing good business were higher. From the very complete arrangements this show promises to be a highly successful one in every respect, and many intending buyers are delaying their purchases until they see the exhibits there. Several Scottish friends I know of intend visiting this show to buy. Messrs. Stirling, of Hamilton, whose exhibits were so much admired last week, will, I believe, exhibit at the Agricultural Hall, as well as the Madelvic Motor-Carriage Co., Ltd., of Granton.

### Sober Drivers.

THE conviction last week of the driver of one of the large motor mail vans, now in use by the London Post Office for being the worse of drink while in charge of his vehicle raises again, as other similar cases have done, a very important question, viz.: the necessity for thoroughly steady drivers for self-propelled vehicles. It is obvious that although a canny-going cab horse may carry a half-drunk or intoxicated coachman home in safety, a motor-car, however "life-like," has no such instinct or qualities. Even a locomotive driver may safely run his train with a "glass" in his head, but it is quite different with a mechanical carriage without rails requiring a steersman. An essential quality in a motor-car driver, viz., sobriety, was, I understand, early insisted on by the pioneers of the motor industry in Scotland, and I believe that, so far as the drivers selected and trained at the Hamilton Works, are concerned, the men almost entirely are abstainers, and I am not aware that a single case of irregularity in this respect has ever occurred throughout Scotland. Those who are responsible for the selection and training of new drivers should make a point, as far as possible, of only accepting men who are abstainers, and I believe such men can readily be obtained.

### Scottish Motor Hiring Companies.

DURING the long spell of fine weather which we have experienced here, motor hiring companies in Scotland have all been doing good business. In some cases the business offered them has exceeded many times over their ability to undertake it. The moral, of course, is plain, and companies with capital are increasing their capacity as rapidly as possible.

### The Edinburgh Autocar Co., Ltd.

THE Edinburgh Autocar Co., Ltd., are now in possession of their large new premises in Lothian Road, and the beginning of July will mark an important increase in the number of their cars on the streets of Edinburgh. The Highland and Agricultural Show, at which H.R.H. the Prince of Wales will attend, should be a harvest time for this enterprising concern.

"BROWN HEATHER."

## MOTOR-CARS ON THE CONTINENT.



### A Wurtemberg Motor-Car Club.

THE formation of a Wurtemberg Motor-Car Club is now a *fait accompli*, a meeting having just been held at Stuttgart, when Herr Pfautach was elected first president and a committee appointed. Already forty-five members have been enrolled.

### A New German Motor-Car Company.

THE Allgemeine Betriebs Gesellschaft für Motorfahrzeuge is the title of a new company which has just been formed in Cologne to deal in auto-cars of all kinds, and to establish motor-car services for the conveyance of both passengers and goods. The Cologne Electrical Co. (Messrs. Louis Welter & Co.) is interested in the new company, which has a capital of £30,000.

### Another Motor-Car Race in Germany.

WE learn that the annual meeting of the German Touring Club is this year to be held at Mainz, from the 14th to the 20th July. An extensive programme of visits, cycle races, etc., is being arranged, and a new feature this year is the inclusion of a road race for motor-cars and cycles. The course is from Mainz to Finthen, Coblenz, and back, the distance out and home being about 150 miles.

### Import Duties on Motor-Cars in Norway.

ACCORDING to an official communication from Christiania, the Norwegian Customs authorities have just altered the classification "electric motor-cars for use on railways" to include automobile vehicles of all kinds. The import duty on such vehicles is at the rate of 15 öre per kilogram, or about 8s. 6d. per cwt.

### A Steam Road-Train Service in Italy.

WE learn from an Italian correspondent that a passenger road-train service has just been established between Ventimiglia, Liguria—on the Italian-French frontier—and Vievola in the Tenda Valley, the present termination of the railway system in that district. The train is of the Scotte type—well-known in France; it comprises a combination tractor and omnibus of 2.7 h.p., with accommodation for sixteen persons, and a trailing 'bus capable of accommodating twenty-four passengers. Trials of the train have just been made over the route in the presence of both government

and local authorities. On the outward journey between Ventimiglia and San Dalmazzo di Tenda, the distance—forty-three kilometres—was covered in six hours, the route being up hill all the way. The return journey was easily made at an average speed of fourteen kilometres per hour—the maximum allowed by the Italian authorities.

#### The Gordon-Bennett Challenge Cup.

MR. GORDON BENNETT has offered to the French Automobile Club a cup to be awarded to the winner of a race between four-wheel motor-vehicles, propelled either by petroleum spirit or electricity. The first race is to be run in France. It will be open to a member of any automobile club in any country to challenge the holder of the cup, which has been accepted by the committee of the French Automobile Club.

#### A New Motor-Tricycle Record.

M. C. TERRONT, an old-racing cyclist, has just created a new record by riding on a motor-tricycle from Paris to Brest and back, a distance of about 1,200 kilometres, in the net time of 40 h. 26 m. 4 s. Two other riders—Ducom and Corré—have already announced their intention of endeavouring to reduce the time over the same route.

#### Prospective Accumulator-Patent Litigation in America.

RUMOURS are rife of an impending storage-battery war in America. The General Carriage Co., which has the cheap cab charter in New York State, and which has imported from Paris two Krieger electric cabs, has under advisement the importation of a large number of them, to be put in service in New York. These cabs utilise storage batteries made by a French company, under patents claimed to antedate those of the Electric Vehicle Co., licencees of the Storage Battery Co. of Philadelphia, which sets up a claim to the ownership of every storage battery patent that is of any value in the United States. The Storage Battery Co. therefore, states the *Horseless Age*, threatens suit for infringement if the carriage company introduces Krieger cabs in the city.

## THE GYMKHANA AT THE AGRICULTURAL HALL.

**D**URING the progress of the Motor-Car Exhibition at the Agricultural Hall, Islington, popular interest will be excited by a series of competitions and displays in the arena. These will not only serve to attract public attention, but also to demonstrate how effectually motor-vehicles can be brought under the absolute control of their drivers.

Entries for the various events referred to below are now being received, and these are in sufficient number to lead to anticipations of a great success. The lists, however, are not yet closed, and intending entrants may intimate their intention of competing up to the morning of the day on which the events are brought off; but for the convenience of those concerned it is hoped that all entries will be received at the Agricultural Hall within the next three or four days.

### MOTOR-TRICYCLE CONTESTS.

For motor-tricycles there will be steering competitions through and around obstacles, figures, etc., over a specified course, and after that is covered each rider will be allowed to give an exhibition of skill on his own lines.

The electric-ignition motor-tricycle contests will be started with the machines from a dead point, heats being run each day. There will also be daily finals, the winners of

which will participate in the grand weekly final on Saturday. Those who win this latter event on the 8th prox. will run with the winners of the second Saturday's heats in the grand final match. From the rules, which should be carefully studied by competitors, we notice that on the signal to start being given the tank is to be filled with petrol and the lubricating chamber with lubricant—one pint of petrol and one measure of lubricant to be handed to each competitor on entering the ring, the whole of which must be placed, without spilling, in the proper receptacles.

There will be an interesting motor-tricycle emergency trial, in which the competitors will ride round the arena, dismount from their machines, take off both the hind wheels, and remount the right-hand wheel on the left axle and *vice versa*. They will then be expected to disconnect and remove the batteries from the box, subsequently replacing them, remounting and riding round the arena; the first home winning the heat.

The obstacle race for motor tricycles will be of a novel character so far as motoring is concerned in this country. The course will be twice round the arena. On the first round, two obstacles, each 12 in. high, will have to be overcome by the rider dismounting and lifting the machine over. At the end of the first lap each competitor will have again to remount and search for an egg bearing his own number from a basket containing at least three dozen eggs. This he will have to carry in his hand when remounting and lifting his machine over the obstacles on the second round. The first home will win the heat; but breaking the egg will disqualify equally as knocking over an obstacle.

As an exercise in patience, no less than as a demonstration of control, the skill in slow-driving motor tricycle contest should be interesting. The competitor who takes the longest time in traversing the track will be declared the winner. After once fairly started, pedals must not be used.

### BICYCLE AND MOTOR-TRICYCLE EVENTS.

For bicycles and motor-tricycles there will be similar events, the machines being, of course, in different classes. These will include heads and posts, lemon cutting, tilting at the ring, tent pegging, etc.; while another competition which should prove popular is as follows, classes for both bicycles and motor tricycles being arranged:—The entrant will ride round the arena, dismount and vault twice over his machine without permitting it to fall from its proper position. He will then run round the arena with the machine held only by the top bar of the frame, mount, and ride round the arena, the first home being the winner.

### MOTOR-CARRIAGES.

The motor-carriage competitions for tube ignition cars will be run in heats twice a week, the winners to ride in the final on the first Saturday and the grand final on the 15th prox. In this competition all the ignition tubes will, at the start, be removed from the cars—the wicks removed from burners; no pressure will be allowed in the tanks; india-rubber connections with the pump will be severed, and one chain is to be off the rear wheel. All parts are then to be replaced, the car started (methylated spirit being used in the burners), and run round the arena.

For electric ignition cars, with single-cylinder engines, and also for those with two or more cylinder motors, there will be similar competitions. At the start the sparking plug will have to be removed, the batteries disconnected, the lubricators empty, and one chain off the driving wheels.

Obstacle competitions will also be arranged for motor-cars and vehicles calculated to test the skill of the drivers.

The competition will, except where stated to the contrary, be carried out each day, with Saturday finals, and all entries should be addressed to Messrs. Cordingley & Co.'s office at the Hall, where competitors can obtain the fullest information as to awards, times of starting, and other conditions generally.

# A NEW FRENCH STEAM MOTOR-CARRIAGE.

THE illustrations, Fig. 1, 3, and 4, herewith show a new light steam motor-carriage which has lately been introduced in France, by the Société Européenne d'Automobiles of Paris. As will be seen, the carriage, which is built in accordance with the designs and patents of MM. Tatin & Tanière, is a light three-wheeled two-seated vehicle, its weight complete being only about 350 kilogrammes, or about

7½ cwt. The boiler, which is of the coiled tube flash type, is mounted on the fore splash-board (C, Fig. 3), while the engine M is mounted under the floor of the carriage. The feature of the boiler is that it is petroleum-fired. The oil is stored in a

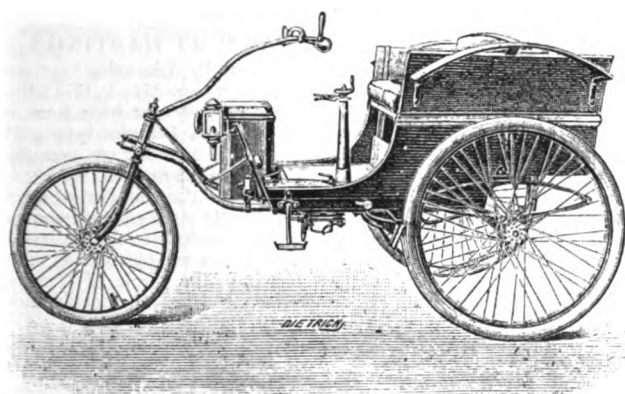


FIG. 1.

cylindrical tank *v* (Fig. 3) underneath the seat of the carriage. To this tank a small air pump *n* is attached, by means of which a certain degree of pressure is obtained in the former, which forces the liquid out of the tank, and causes it to pass along the feed pipe *b* to the tubular vaporiser *B*, arranged under the steam-vaporising coil *S*. The vaporiser *B* terminates in four tubular nozzles, the ends of which communicate with four tubes leading into the

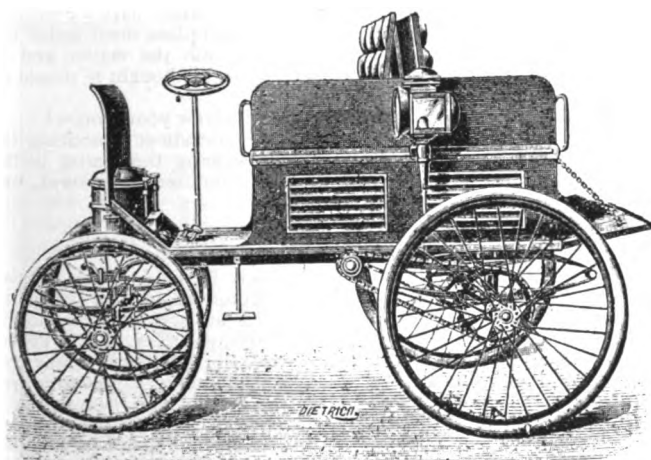
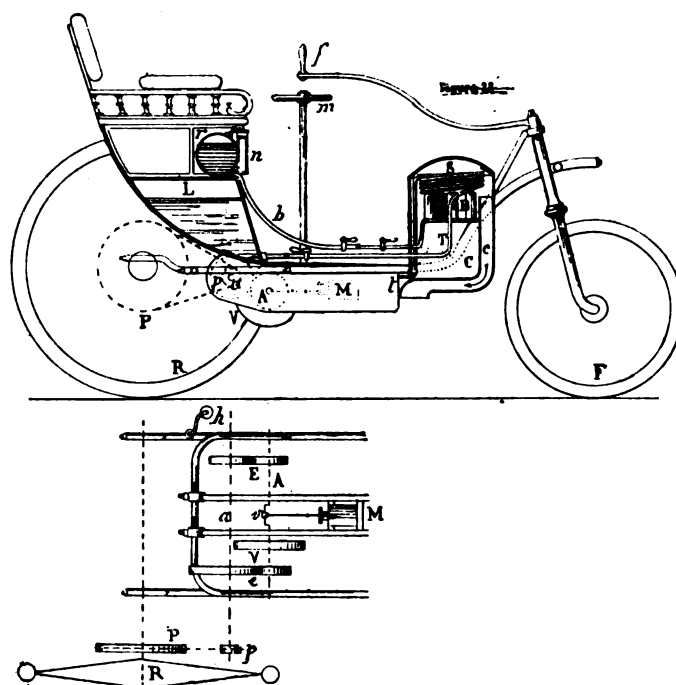


FIG. 2.

exhaust *C*. The water tank *L* is also located underneath the seat, and has a capacity sufficient, it is stated, for a run of from 80 to 120 kilometres, on a level road. From the tank *L* (Fig. 3) the water is pumped to the boiler by hand at starting, but automatically afterwards through a connection between the motor and the pump, this being so arranged that should the speed of the motor become excessive the

quantity of water allowed to pass to the boiler is automatically decreased. Both the petroleum and water feed pipes are provided with cocks, so that the supply of either may be shut off by the driver at any moment. The motor itself (*M*, Fig. 3) is of the horizontal double-acting type, without comprising any special feature.

As regards the transmission of the power from the crank-shaft to the rear road wheels, it will be seen from Fig. 4 that the shaft *A* carries at its ends two gear wheels *E* of different sizes, the vehicle being provided with two speeds. These wheels engage with corresponding gear wheels loosely mounted on an intermediary shaft *a*. Mounted on this shaft are two clutches (not shown in Fig. 4); the latter are connected to and controlled by the hand wheel *m* (Fig. 3), and are so fitted on the shaft that while revolving with it they are free to slide in and out of gear under the action of the hand wheel *m*. When one clutch is in gear the other is out, and *vice versa*, while with a point on the hand wheel *m* in a central position the motor is entirely put out of gear with the power-transmitting mechanism. From the shaft *a* the power



FIGS. 3 AND 4.

s transmitted through one chain and the sprocket wheels *Pp* to the right hand rear road wheel, which is mounted loosely on the rear axle, the use of a differential gear being in this way obviated. In addition to being able to throw the engine out of gear with the power-transmitting mechanism, the driver is provided with a foot pedal (*h*, Fig. 4), which controls brakes acting on both the rear wheels. The engine is also so arranged that it can be instantly reversed, a backward motion being in this way provided. The front wheel is mounted between forks similarly as in a bicycle, the steering being effected by means of a long bar (*f*, Fig. 3) brought within easy reach of the driver. The wheels are of the suspension type, and are fitted with pneumatic tires. The Société Européenne is also making a four-wheeled four-seated steam dog-cart, illustrated in Fig. 2, the boiler, engine, and transmission being identical with that above described. The weight of this vehicle is stated to be 450 kilogrammes, or nearly 9 cwt. The makers claim that a speed of 25 kilometres per hour can easily be attained by their vehicles.

ACCORDING to the New York correspondent of the *Morning Post* an Automobile Company has been formed in the State of New York, with a capital of 2,500,000 dols., to organise clubs in all the large cities, and to form them into an association on the lines of the League of American Wheelmen



### CROWDEN'S NEW STEAM BRAKE.

THE car shown in the accompanying illustration has been designed and made entirely by Mr. C. T. Crowden for experimental purposes, to ascertain what advantages a steam vehicle possesses over a petrol one, and also the h.p. most suitable for the work. The carriage at present is not fitted with change speed gear, but, having a compound engine, it will travel at a very high speed on the level, up inclines and steepish hills, and steam is easily maintained at working pressure. Mr. Crowden has now constructed an oil furnace which promises to give good results, as the intensity of the fire can be regulated at will, an advantage not to be obtained with coal or coke fuel. The frame is entirely of steel, with laminated steel springs, and long bolted mail-pattern axles, Crowden's patent motor-car wheels with



oak spokes, ash felloes, and rubber tires. The boiler is of the multitubular type, constructed to burn coke or oil, and fitted with improved automatic stoking arrangement. The engine is of the compound type, fitted with link motion and an intercepting valve by which high pressure steam can be used in the low pressure cylinder for starting and for climbing steep hills.

The car is fitted with a foot brake acting on a drum on the differential gear shaft, and a screw lever brake acting on both hind wheels, and both of these can be actuated from the driver's seat. The body, roof, and fittings of this vehicle have been made in Mr. Crowden's factory, and are constructed with the sound workmanship and high finish which is well known to characterise all his work, and the whole turn out is smart, serviceable, and highly creditable to the engineer who produced it.

### ONE HUNDRED SOVEREIGN CONTESTS FOR ELECTRIC CARRIAGES.

IN connection with the Commercial Efficiency Trials to be made during the next fortnight, special attention is directed to those for electrical carriages. The first (A) of these will be a distance test for electric carriages weighing under one ton and carrying two passengers, the route being from the Agricultural Hall to Maidenhead, at a minimum speed of 10 miles, the maximum to be 12 miles per hour. The second (B) of this series of competitions will be for electric carriages weighing under  $1\frac{1}{2}$  tons, and carrying four passengers, the same speeds to be adopted and the route from Westminster to Brighton. For each of these contests a prize of the value of £25 is offered. The carriages engaged in the

above contests are to be eligible for speed tests, using the same batteries recharged. This will be over any road with a gradient of not less than 10 per cent. on it, and the prizes will be of the same value as in the foregoing series, making £100 in all. The run will be as far as the competitors care to go, but it is a stipulation that the gradient shall be as stated. These competitions are called C and D for the 1-ton vehicle, and the  $1\frac{1}{2}$ -ton carriage respectively. The passengers carried must average a minimum of ten stone in weight in all four competitions.

### GOOD RUN BY AN ELECTRIC VEHICLE.

ON Wednesday, one of the Electrical Undertaking's, Ltd., cars, built on the Leitner system, ran from London to Brighton at an average speed of twelve miles an hour on one charge only. This was certified by an expert, Mr. M. K. Eyre, of Messrs. Duncan & Eyre, of New York. The same batteries had previously run over 500 miles under seal.

### PROPOSED MOTOR-CAR SERVICE AT HASTINGS.

At a meeting of the Hastings Town Council the Licensing Committee reported having "had before them an application from Mr. A. H. Collis, of Great Brington, Northampton, for licences to ply for hire here with wagonette and char-a-banc motor-carriages of the Daimler type. They have inspected, and certain of the members have travelled on, one of the char-a-banc carriages brought here by the applicant, and, having fully considered the matter, they now recommend that the number of licences to be issued for stage carriages of the wagonette and char-a-banc class which, by a resolution passed by the Council previous to the extension of the Borough was limited to twenty-five, be increased by twelve, making the total number to be issued thirty-seven, that the whole of the twelve additional licences be issued for motor-carriages, but that preference be given to local applicants for such licences."

Alderman Idenden moved the adoption of this report, and Councillor Shoesmith seconded.

Alderman Weston moved an amendment because he did not think the Committee had given the matter the consideration which it claimed. He did not think permission should be given for motor-cars to ply for hire here, and thus take away the living of a considerable number of ratepayers. This resolution had been passed simply because someone had come over from Brighton and said he had seen them there, but the speaker had heard from the Chief Constable at Brighton, and learnt that they had only one motor-car plying for hire. They should let the matter go back to the Licensing and Watch Committees jointly to consider the advisability of placing these cars in the town, and finding a stand for them. He had little objection to motor-cars as such, but he thought their introduction would injure the livelihood of a respectable class of men who had been ratepayers for many years.

Councillor Bray seconded the amendment, and said he agreed with Alderman Weston's remarks.

Alderman Idenden thought Alderman Weston rather hard for wishing to take away the Licensing Committee work, and place them under the Watch Committee. They had looked carefully into the matter, and as they did not feel altogether equal to deal with it, he thought it should go to the Council.

The Mayor: Do you ask permission to withdraw your motion?

Alderman Idenden assented, and on the amendment becoming the substantive motion, a further amendment, relegating the matter to the Council in Committee instead of the two Committees mentioned, was proposed by Councillor Smith and adopted.

### THOSE MOTOR CARS.

EDWARD LEHWESS, of 1, Princes Road, Holland Park Avenue, Notting Hill, was summoned for driving a motor-car, at Kew Bridge, on the 31st ult., at a greater rate than 12 miles an hour, contrary to the provisions of the Light Locomotives on Highways Order, 1896.—Police-Constable Cheeseman said at 8.30 on the evening of Wednesday, May 31st, he was at the foot of Kew Bridge, when he saw a motor-car coming over the bridge towards him. The machine was coming very fast, and at a rate of over 15 miles an hour. Just at that time there was a large number of pedestrians at the foot of the bridge, and on the approach of the motor-car they scuttled in all directions, and some shouted and screamed in trying to get out of the way. Witness himself had to step on one side as the motor passed, or he would have been knocked over. He held up his hand for defendant to stop, but he only slowed down, and went on at a rate of seven or eight miles an hour. Witness ran after the car, and catching hold of the brake jumped on. He again requested the defendant to stop, and seeing that witness was on the car he did so.—Mr. Lehwess said it was impossible for the car to go at the rate of speed mentioned by the constable.—The case was adjourned, on the application of the police, for further evidence.

On Monday it was again heard, when the magistrates, not considering the case proved, dismissed it.

# PETROLEUM MOTOR-VEHICLES.\*

By JAMES D. ROOTS, M.I.M.E.

(Concluded from p. 223.)

Taking the average of several of the best known petroleum spirit vehicles, the fuel cost per brake horse-power per mile per day is found

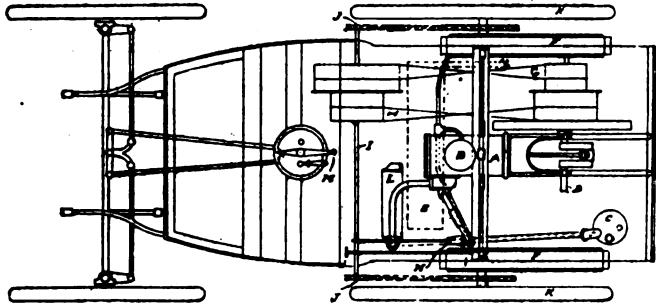


FIG. 40.

to be about six times greater than that of the author's petroleum oil vehicles.

Fig. 42 is a plan of the twin-cylinder 4-h.p. motor frame and wheels for either a two or four-seat body. *A* is the motor, *B* the valve and power shaft driven from the crank shaft by the two-to-one set of chain wheels *A*<sub>1</sub>. On *B* is keyed the chain wheel *C*, which conveys motion to the chain wheel *D* keyed to the countershaft *E*. *F* is the high-speed cone clutch with a chain wheel attached, *G* is the slow-speed clutch with its chain wheel. The chains on *F* and *G* drive direct to the chain wheels *H* and *I* on the axle tube *J*. *K* is the balance gear box. *L* is an ordinary jaw clutch, the corresponding jaws of which are fixed to the gear wheel *L*<sub>1</sub> of raw hide. *M* is a gear wheel always gearing with *L*<sub>1</sub>, and

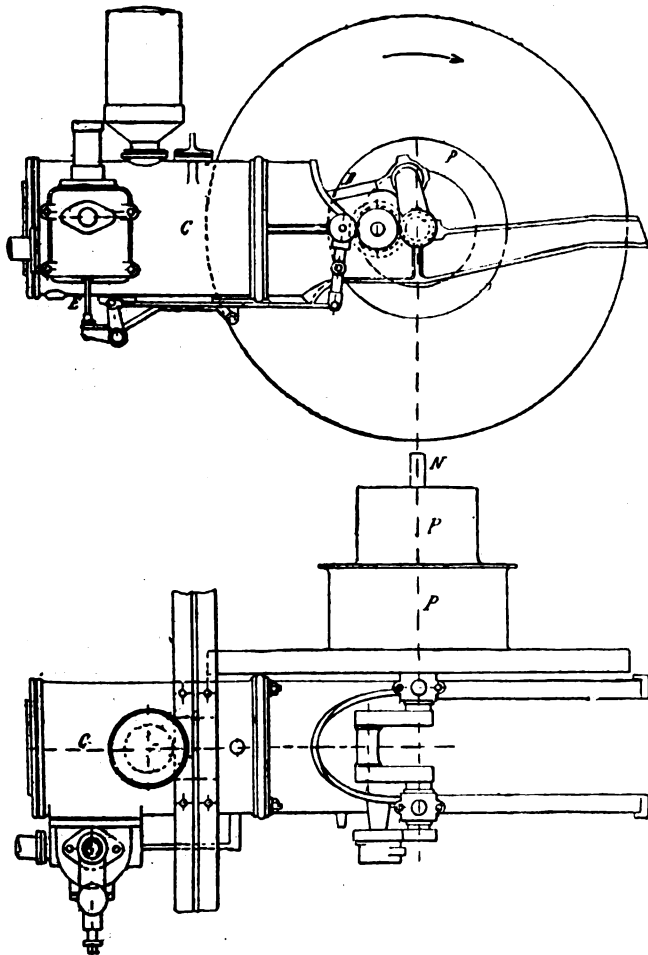


FIG. 41.

having fixed to it a small chain wheel. *M* rotates upon a short shaft. The chain wheel of *M* drives the chain wheel *N*, which is keyed to the

tube of the axle. *O* is the water tank, *P* the cooling coil, *Q* the exhaust box; *R* is a rod, to the end of which the operating lever is attached. The

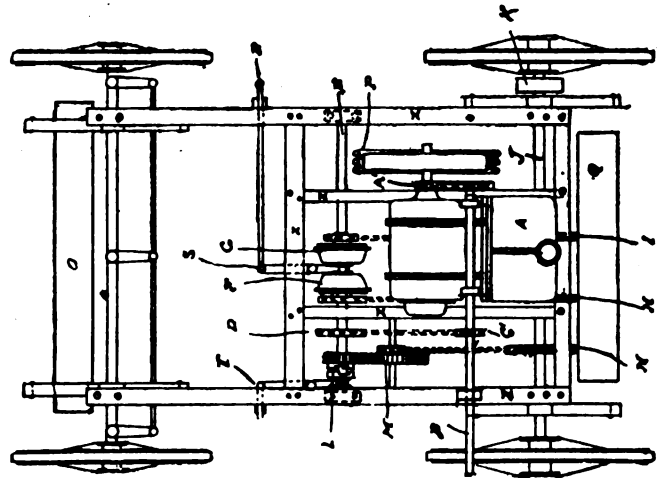


FIG. 42.

rod *R* in reciprocating moves the lever *S* which slides in either direction the outer cones of the clutches *F* *G* which are cast in one for this purpose. Another rod or link operates the reversing lever *T*, which brings into operation the pinions *L* and *M*. *Z* is the channel frame.

This vehicle carried about ten gallons of water, which was sufficient to last for about three hours, without changing; the time would vary a little according to the kind of road it met with. After the fourth hour the water would probably boil. The oil tank contained two gallons of oil, which would usually last from four to four and a half hours. Practically any kind of oil was usable, American or Russian, between specific gravity 79 to 84.5, and with a flash point from 73 F. to 150 F., Abel test. Two friction clutches are used to convey the power to the driving wheels, the one geared to 3½ miles an hour and the other to 10½ miles an hour. The clutches are cone-shaped and consist of two portions, one of which fits into and is pressed into the other with more or less force according to the speed required. If pressed in tightly, the clutch drives as one without slip; if less tightly the clutch will slip, and the slip being in accordance with the pressure, any speed between one mile and the maximum can be obtained with these clutches. A vehicle going at any given speed can be accurately followed. These clutches are now used on all Messrs. Roots and Venables' vehicles, as they allow so much range of speed.

Roots and Venables' van, propelled by a 6-h.p. motor, has been doing about thirty miles daily for some time past. It is intended to carry loads up to one ton. The maximum speed is ten miles an hour, while the slow-speed clutch gives four miles an hour, and the reverse is about three. The consumption of oil on a tested fifty-mile run of this van, everything being carefully arranged to obtain accuracy, was thirty-one pints. The van, fitted with a very heavy and solid body weighing 7½ cwt., carried a load of 15 cwt. The oil used was Tea Rose at 4½d. per gallon.\*

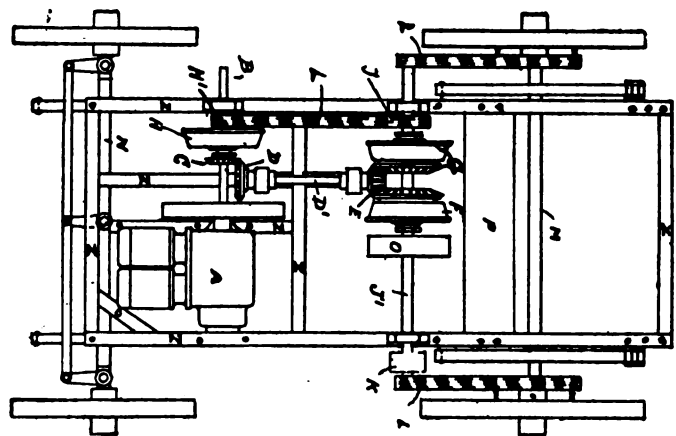


FIG. 43.

The cost of the fuel, therefore, for the run was 1s. 6d.; the cost of the lubricating oil for the run was 2d.; the total oil cost of the fifty-mile run was therefore 1s. 8d.

Fig. 43 is a plan showing the first design of transmission and other gear for the 6-h.p. vehicle for a van or other body. The motor *A* is fixed upon the front of the frame *Z*. The crank shaft *B* carries the bevel pinion *C*, which meshes with the bevel wheel *D*, which is keyed to

\* A paper read before the Society of Engineers, May 1st, 1899.

\* The price of oil has risen since, and is now about 5d.

the right-angle shaft *D*. The bevel wheel *E* is keyed at the other end of the shaft. The bevel wheel *E* drives the two mortise wheels *FG*, each having a friction clutch attached to it. *F* is the slow-speed clutch, *G* is the reversing clutch. *H* is the quick-speed clutch, having keyed to its inner cone a small chain wheel *J* on the countershaft *J*<sub>1</sub>, to which also *G* and *F* are attached. Two levers are employed, one to operate *H* or *F*, and one to reverse by means of *G*. *K* is the balance gear. *LL* are the chains driving the back wheels of the vehicle on the axle *M* by means of large chain wheels fixed to them. *N* is the front axle, *O* is the pulley for the band brake, and *P* is the water tank.

This design worked out heavier than was calculated and intended, and, although it was clear that the arrangement would be very suitable for a heavier vehicle of greater power, it was desired to reduce the total weight. Moreover, the bevel wheel *C*, running at 510 revolutions per minute, made considerable noise, and the following design was substituted for it.

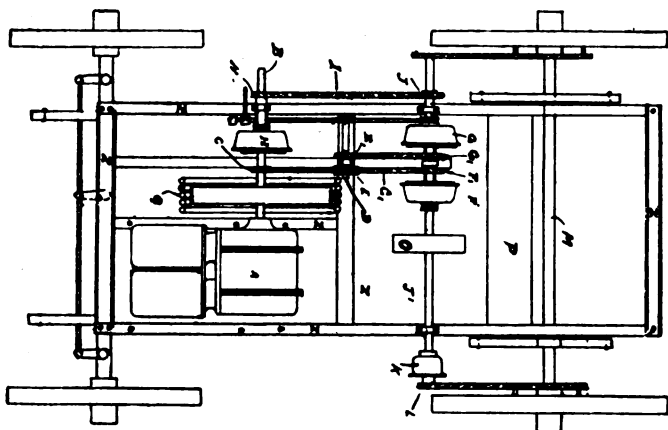


FIG. 44.

Fig. 44 is a plan of the design adopted for the 6-h.p. vehicles, whether for carriages or vans. The chain wheel *C*, keyed to the crank shaft *B*, drove by means of the chain wheel *F* the inner cone of the clutch *F* for the slow speed. For the reverse the lower part of the chain *C* passes over the chain wheel *E*, which is cast in one with the chain wheel *E*<sub>1</sub> fixed to the short stationary rod or shaft *D*. As the lower part of the chain moves in the opposite direction, the chain wheels *E* and *E*<sub>1</sub> necessarily also rotate in the opposite direction, as also the chain wheel *G*<sub>1</sub>. If now the clutch *G* be thrown into driving friction the shaft *J*<sub>1</sub> is also reversed, and the vehicle moves at a slow speed backward, according to the number of teeth in the respective chain wheels. For the high speed the chain wheel *H*<sub>1</sub> is attached by a sleeve through the bearing to the clutch *H*, which when put in frictional gear drives, by means of the chain *I*, the chain wheel *J*, keyed to the shaft *J*<sub>1</sub>. The other reference letters apply as in Fig. 43.

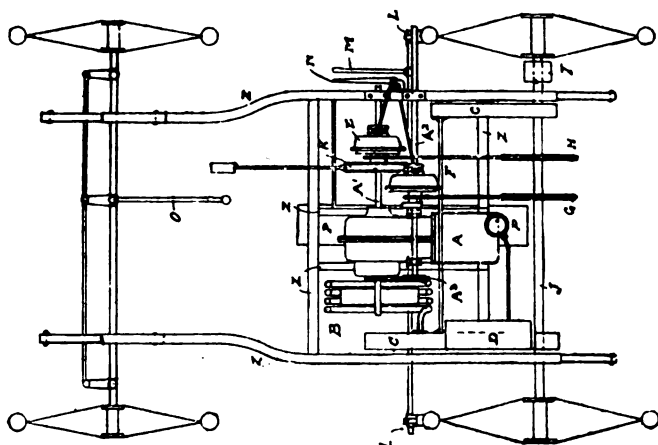


FIG. 45.

Fig. 45 is a plan illustrating the mechanism of the author's most recent two-seated light car. This carriage has a motor of 2.2 brake horse-power and the arrangement of the transmission gear, the author thinks, has the fewest working parts of any petroleum car he has met with. *A* is the motor, *B* the water-cooling coil, *CC* water tanks, *D* oil tank, *E* quick speed clutch attached to the crank shaft *A*<sub>1</sub>, *F* slow speed clutch attached to the valve shaft *A*<sub>2</sub>, which is driven from the crank shaft *A*<sub>1</sub> by the chain and chain wheels *A*<sub>3</sub>, *G* large chain wheel on the axle driven by the slow-speed chain from the clutch *F*, *H* large chain wheel driven from the crank shaft clutch, *I* the balance gear box, *J* the axle, *K* the band brake operated by a foot lever, *L* rubber block tire brake, *M* the brake

lever, *N* the operating lever for both clutches, *O* the steering lever, *P* the exhaust box, and *Z* the frame.

It will be obvious to any one having any knowledge of motor-vehicles how advantageous in all ways this arrangement is. Its chief advantage is simplicity, the very minimum of working parts for a car. The quick speed drives direct from the crank shaft to the axle. Although there are only two clutches, any speed can be obtained with this arrangement, from one mile to the maximum. As there are so few parts, there is less likelihood of anything getting out of order. Other advantages are cheapness of manufacture and lightness of weight, the total weight of the car being only 4½ cwt. unloaded. The quick-speed clutch is set for twelve miles, and the slow speed for four miles, per hour.

Pneumatic tires of 2½ in. diameter, or preferably solid tires of 1½ in. width of rim, are fitted to the wheels, which are of the tension type. The front wheels are 28 in. diameter, and the back 32 in. There is only one operating lever for all speeds and for stopping. A considerable portion of the mechanism is made of malleable iron instead of cast iron, in order to reduce weight. This vehicle is driven by the same motor as shown in Fig. 18, but with various detail improvements to increase the power and to render it free from exhaust smoke or smell. It now gives 2.2 brake horse-power at 590 revolutions.

It must be remembered that in an absolutely new industry, as that of petroleum motor-vehicles was, a designer had no data to work upon, and everything practically had to be worked out *ab initio*. He had to calculate and consider about almost everything, to the smallest parts. Even the ball bearings had not only to be designed but also to be made by the author's firm. In the cycle trade as it is now various small parts of the machine, and indeed all the parts, may be purchased separately, and the whole machine put together by the purchaser. Of course, in those cases where a motor-vehicle was imported from abroad and had only to be copied the way was made smooth.

As the second living pioneer of this industry in this country (Mr. Butler was undoubtedly the first), and, as the author believes, the only early pioneer who has persevered, he has the satisfaction of having acquired all his own data, of having, as it were, been completely through the mill in obtaining his knowledge and experience of petroleum motor-vehicles. He has designed and worked out eight wholly different types of vehicle, and four different motors, with as many different kinds of transmission gear. The result of all this thought and labour is that the three vehicles last described, driven respectively by the 2 brake horse-power, 4 brake horse-power, and 6½ brake horse-power motors, are satisfactory commercial machines.

With regard to the vexed point of electric ignition and tube ignition, the author would observe that during 1885 he made numerous experiments with two forms of electric ignition upon a stationary spirit engine, viz., a battery and a magneto-electric machine. The ignition tube was also fitted to the same engine. Better results were always obtained with the tube than with either method of electric ignition. He, therefore, gave up electric ignition, and has always placed his trust in the tube, which he is still convinced has the balance of advantage in its favour. It must be conceded that electrical ignition generally is in a much improved condition to what it was at the time he experimented with it. Nevertheless, both are destined to be superseded in the immediate future by another system of ignition, which has all the advantages of both systems and some of its own. This method consists of the use of a small additional piston which fires a small quantity of the charge by compression prior to and separately from the main working charge, and admits it to the working cylinder at a predetermined time, which can be varied at will. This method of ignition is not, however, sufficiently perfected to be described further at present.

We understand that Mr. Reuben Thompson, of Sheffield, has decided to start a service of motor-omnibuses.

At the Paris Automobile Show there are just over four hundred exhibitors. We anticipate at least one hundred at the Motor-Car Exhibition at the Agricultural Hall, Islington. In Paris they have four bands playing at the same time in different parts of the ground, but the attendance, according to latest advices, has not been of the best. The novelties to Parisians have not been many, but an attraction is the section occupied by the Aero Club, the members challenging each other as to who can stay up in the air the longest.

"BEING in want of a motor-car for experimental purposes," says a writer in the *Leeds Mercury*, "I recently called at addresses where seventeen cars had been offered for sale, and, though it was within three days of the various advertisements appearing, only one car was to be seen, the other sixteen having changed hands at prices varying from £95 to £175 each. One advertiser showed me no less than thirteen replies to his advertisement." This experience is by no means exceptional, and demonstrates two things: Firstly, there is a demand for motor-cars, and secondly their sale can be ensured by advertisement.

## DAIMLER MOTOR CO., LTD.

A MEETING of the Daimler Motor Co., Ltd., was held on Wednesday at the Holborn Restaurant, in pursuance of the pledge given at the last general meeting that the shareholders should be informed at an early date as to the position of the company. Mr. E. H. Bayley (the chairman of the company) presided. The Secretary (Mr. John Ware) having read the notice convening the meeting,

The Chairman said: As you are aware, this is an informal meeting, called solely for the purpose of giving you information. When I was elected as chairman at the general meeting in January last, I stated that I would make a thorough and exhaustive investigation of the company's affairs and report to you at as early a date as possible, reserving to myself the right to retire from the position if I considered the position unsatisfactory. Sir Edward Jenkinson, who was elected a director immediately afterwards, gave, I believe, a similar promise, and it is in pursuance of these pledges that we have called you together to-day. Since our election we have attended a very large number of board and committee meetings, and between the meetings have had almost daily to deal with matters connected with the company. We have carried out many reforms, which shall be explained to you in detail. For myself, I may say at once that so far from considering the position unpromising, I am convinced that with the change of policy that has taken place, and with good business-like management, the company has not merely a satisfactory but even a brilliant future before it. (Applause.) In the remarks which I shall have to make I intend studiously to avoid personalities, and shall especially abstain from casting any reflection upon either our predecessors or other persons. Let the dead past bury its dead, and let us, as practical business men, devote our best attention to the future, and so make the Daimler Company what it can be made, a successful and dividend-paying concern. (Hear, hear.) The first duty to which we directed our attention was to cut down the expenditure to the lowest point compatible with efficiency. We found two staffs of clerks and officials, one in London and one in Coventry. This was a totally unnecessary expense, as neither staff was fully employed, and the divided responsibility created friction and prevented efficient management. We dispensed with the services of nearly all the London staff, at a saving of £623 per annum. The whole of the work is now done at Coventry, under the direct supervision of the secretary, and is done far more efficiently than before. The change has effected not only economy of money but economy of time. Under the old system, customers' letters could not be answered frequently for several days, in consequence of correspondence taking place between London and Coventry, whereas now letters, inquiries, etc., are promptly attended to. The bookkeeping is placed on a thoroughly sound footing, and everything works smoothly. To carry through this rather revolutionary change was a heavy undertaking, involving considerable labour at the time, as the whole work of the office had to be reorganised; but it has been done, and has proved a great success. The difficulty of the task was made all the greater by the resignations of the late secretary, the general manager, and the chief clerk. It is no easy matter at short notice to find the right men to fill responsible positions; but the right men have been found in this instance, and I can confidently assure the shareholders that the company has not suffered by the change. The organisation of the factory at Coventry has also been remodelled. There were too many overseers in proportion to the number of workmen. By a rearrangement of the work, we have saved £1,144 per annum in salaries, and although the work has increased and is still increasing, it is now more efficiently carried on than before. The practice of manufacturing for stock, and especially for stock that was not really saleable, has been stopped. The works are now fully occupied with profitable work as fast as men can be obtained. Unfortunately, 64 per cent. of the men were discharged towards the end of last year, and got scattered about the country, so that now, when we require them, it is difficult to get them back, as they are afraid that in the winter they will be discharged again. But they are gradually coming back, and I have no doubt that we shall be able to provide them with constant employment. While on the subject of officers, I may mention that we have retained the services of Mr. Sidney Straker as consulting engineer, and his services have proved invaluable. The success of this company will turn upon the quality of the carriages it produces. About a year before I joined this company I ventured to state in public that the motor-car industry had been chiefly handicapped in this country by the ill-designed and defective cars that had been placed upon the market. Every day's experience since that time has confirmed me in this opinion. A customer who has purchased a badly-designed motor, possibly at a high price, is not only annoyed by frequent breakdowns and the heavy cost of repairs, but a bad impression is created, and probably a dozen possible purchasers are deterred from buying. On the other hand, a well-designed and successful car will sell itself. I can give the meeting an illustration of this fact. Two omnibuses have been built under the Daimler patents, under the supervision of Mr. Straker and myself, and have proved an extraordinary success. One of them has run over 1,000 miles without the slightest hitch, at a cost of about 1d. per mile, which is a mere fraction of the cost of horse power, and what is the result? Arrangements have been made with your company for the construction of a large number of these carriages at a satisfactory profit, and my strong impression is that after they become known you will scarcely be able to cope with the orders you will receive. Bear in mind, gentlemen, that defective vehicles cost you more to build than well-designed ones. Unsuccessful carriages are built singly or in small numbers, and fresh drawings and patterns have to be constantly made and

the machines changed and the men taken from one job to another, so that no profit is made. When a successful carriage is built all the parts can be standardised, and the cost of production is greatly cheapened. The several parts are made in large quantities, and a profit is made where before there was a loss. Mr. Straker has completed the designs for two leading types which will probably form the backbone of the company's business, and when these types are standardised a large demand can be met and the carriages cheaply produced. You will be glad to hear that at the recent Automobile Show and Competition at Richmond the Daimler Company got more medals and certificates than any other exhibitor. In the hill-climbing competition we carried more weight per horse-power than any other maker, either French, German, or English. In the long-distance trials we carried the greatest number of passengers per horse-power with the smallest consumption per horse-power of fuel. Our four-seat car ran fifty miles with a consumption of only 1½ gallons of petrol, and the six-seated car ran the same distance with only 2½ gallons. The light two-seated car, to which our excellent works manager, Mr. Critchley, has devoted so much attention, was probably the most successful feature of the show. As a hill-climber, it carried three passengers against two passengers of other makers' cars. We have already received orders for twenty of these cars, which will no doubt be in great demand, and as this machine is now standardised a large number can be produced to advantage. It will be a satisfaction to the shareholders to learn that certain serious matters in dispute which had been allowed to drag on from year to year at considerable risk have been disposed of. The transaction connected with the unfortunate acquisition of Eel Pie Island has been finally closed. Another long outstanding dispute, involving a sum of nearly £3,000, has been met so far by the payment to the company of £1,800, and before long we shall recover the balance. Another disputed debt of £650 has been recovered, and arrangements have been made that similar disputes will not recur. A statement has recently been widely circulated by a late director that the company's affairs are in a chaotic condition, a statement that is not only fictitious, but distinctly libellous. This attempt to damage the company's credit is the more discreditable, as the writer must have known that the company's financial position was exceptionally sound. The sundry debtors are considerably in excess of the sundry creditors, and during the past six months the balance at the bank has varied from £2,000 in January to £7,800 at the present time. I have much pleasure in stating that Mr. Holt and Mr. Mace have loyally supported Sir Edward Jenkinson and myself in all the changes we have introduced, and the board, as at present constituted, works most harmoniously. (Applause.) New life and energy appear to prevail among the employés, and I feel the greatest confidence in assuring you that if favoured with your continued support we shall be able, with patience and perseverance, to make this company a decided financial success. (Applause.)

Mr. Heap said the chairman had referred to motor-cars for the carriage of people. He wished to know whether the company made motors for the carriage of goods also, as there would be a great demand for these in a very short time.

The Chairman replied that they made carriages of all descriptions; but he thought experience had shown that for the carriage of very heavy loads of from three to six tons steam was better than oil. Perhaps for light goods petrol machines were the best, and during the last three months they had been devoting their attention to getting out a design of a motor-car especially for the carriage of goods to the extent of, say, one or two tons in weight. The drawings were now practically completed, and he felt sure that before long they would put something of the kind on the market which would have a very large sale. He was convinced that the new design would beat anything that could be done in the way of electricity.

Mr. Harvey George wished to know whether the chairman's remark that steam was more applicable to the carriage of heavy weights applied to char-a-bancs and such vehicles, because he thought that was one thing that ought to be pushed forward. Some two years ago he applied to the company with a view to starting such char-a-bancs at Great Yarmouth, where he lived; but he had great difficulty in getting anything suitable. He hoped the company would do something in this direction, as he believed that class of carriage would be very much in demand.

The Chairman replied that when he spoke as between light and heavy weights he called light weights those that carried passengers up to two tons. When they came to three, four, or five tons they get into the domain of steam. For the purposes named by Mr. George—namely, char-a-bancs, the company's petrol machines were the very thing.

Mr. George: How many would they carry?

The Chairman: The vehicle I referred to in my remarks carries 26 persons and goes 10 or 12 miles an hour without the slightest difficulty. Char-a-bancs are child's play to us. One of the machines I referred to is specially adapted for such a purpose. In regard to anything in the way of passenger traffic, we shall be at the very top of the tree.

Sir Edward Jenkinson said they were still in not exactly a transition state, but a state in which a great deal more inquiry was necessary in order to get the books on a proper footing. They had amalgamated the London and Coventry offices, and had now one set of books. He proposed to go carefully into the question of the prime cost, the incidence of the prime cost on their dead charges, and the question, therefore, of prices and profits, and until they got the whole of these matters into proper order—although they were in a good state financially—it would be impossible for anyone to give an accurate statement of the value of what the company possessed, what the cost of their work was, and therefore what the profit was. He hoped that by the time they brought forward the accounts, which would be for fifteen months, in October or November

next, the directors might be able to lay before the shareholders, quite independently of the figures in the balance-sheet, a statement which would satisfy them as to the actual condition of affairs with regard to the manufactory, and as to the profits they were deriving and might expect to derive from the work being turned out there.

Mr. Sturmev, who said he had sent out a circular giving a few solid facts connected with the business, remarked that the chairman had made a statement which, on the face of it, sounded very pretty. He could echo the opinion of the chairman on one point, and that was that thanks were due to Sir Edward Jenkinson for the way in which he had gone into the question of the book-keeping and so on, and he was quite prepared to say things were to-day in a somewhat better condition than they were two months ago; but what he had to complain about was that when the new board came in they absolutely ignored the knowledge of those who were already in the company and had a good deal of experience of the business. The result had been that for at least four out of the past six months the affairs of the company were in a chaotic state. He would give one fact to show the condition of the company to-day as compared with last year. In the first six months of last year they manufactured about 100 cars; in the six months expiring this week they had manufactured 37. The chairman had stated that they had a good bank balance. This was quite true, but what was the use of a big balance if they did nothing with it? If, instead of carefully hoarding that bank balance and admiring it, the board had increased the productive capacity of the company, and produced cars which would have been sold, they would have done some good with their money. By reason of the policy which had been pursued he calculated that they had lost a profit of something like £5,000, which they might well have earned if they had used the resources of the company. Besides having that £5,000 profit, they would have had fifty or sixty more cars running and doing good for the company. The treatment of the staff by one member of the new board had practically resulted in the whole of the staff interested in the selling business resigning, and, instead of doing anything to remedy that, they went on for several weeks in a condition which resulted in only one order being brought into the place. He (the speaker) had resigned his position on the board, and did not wish to have anything more to do with the management, but he protested against the way in which the new board had muddled the affairs of the company in four months out of the six. What had been done recently had, as he had said, been owing to an entire reversal of their policy of the first four months and by taking Mr. Critchley into their confidence, and making him practically general manager as well as works manager. That was the explanation of the improved state of things recently, and this had not been brought about by the members of the board, with the sole exception of Sir Edward Jenkinson, who, with Mr. Critchley, could pull the company through. Mr. Sturmev concluded by saying, "If you throw the rest of the board overboard it will only be so much lumber that will go by the board." (Laughter.)

The Chairman said Mr. Sturmev stated that the new directors had ignored him in regard to their policy. His impression was that he was put on the board for the very purpose of ignoring the policy of the previous board. (Hear, hear) He thought they had carried out their programme, and they would continue to do so. There had been no reversal of their policy whatever. From the date they were elected to the present time they had pursued the same policy, and it was absurd to say there had been any reversal. No doubt Mr. Sturmev felt a little sore at having been thrown overboard himself. He (the chairman) had before him full extracts from the minutes referring to Mr. Sturmev. He did not propose to read these now, because they had not called the meeting to go into personalities, but if he read them he felt sure the shareholders would not listen to anything more that Mr. Sturmev might have to say at any time.

Sir Edward Jenkinson said they had never at any moment been without an efficient salesman in London, and what Mr. Sturmev had said on that subject was not correct. As to the delay and the loss owing to that delay, he acknowledged that harm had resulted from this. But why was there any delay? What caused it? It was as well to go to the root of the matter. Last year work was stopped and hands were got rid of at a very critical time. A committee of investigation was appointed, and at such a time everything in a company was disorganised. Things were bound to come almost to a standstill. All their best men were turned away from the factory, which was working half-time, and although he admitted that while he was learning the details of the business there was delay, he denied that it was so great as Mr. Sturmev had alleged. When they were in a position to put pressure upon Mr. Critchley to get the establishment into full working order they were told over and over again that they could not get the men back. They had a great deal more work than could be done by the hands in the factory, and it was their greatest difficulty to get the full number of good hands back again. It must be by degrees that the men would return. Owing to the boom in engineering business they came back very slowly, but they expected more would return in the autumn. He must object to being dissociated from the rest of the board by Mr. Sturmev, as they were working together with perfect harmony and were thoroughly agreed as to the policy which should be pursued. (Applause.)

Mr. F. L. Rawson said that, as the shareholder who pressed Sir Edward Jenkinson to go on the board, he thought he ought to thank that gentleman for having done so. The only criticism offered by Mr. Sturmev which appeared to be well grounded was as to the delay that had taken place. Well, he (the speaker) was very pleased that the new board had not gone ahead at once, but had allowed matters to quiet down while the reorganisation was going on. When a new board went ahead immediately without having a thorough grasp of the business and its

details mistakes were often made which could not afterwards be easily rectified, and he was therefore pleased that the board had pursued the policy which they had done. It was important that the public, the company's employes, and the trade should know that they were a united company, and he would therefore move a vote of confidence in the present board of directors. (Applause.)

Mr. Harvey George seconded the motion, which was carried unanimously, and, the Chairman having briefly acknowledged the compliment, the proceedings terminated.—*Financial News*

## BEDFORD MOTOR-CAR SYNDICATE, LTD.

A GENERAL meeting of shareholders was held at the registered offices of the Syndicate, Bedford, recently, Mr. Paul Wyatt, Chairman of the Syndicate, presiding. A general statement of working expenses and receipts was shown, and the Chairman made a statement with regard to the experimental character of the business up to date, pointing out that as pioneers they had to pay the cost of their position, but there was no doubt that the cars were wanted and the Syndicate had wisely anticipated this fact. The public had largely patronised the cars, and there was no doubt the demand was constantly growing. The purchase of another car, so as to meet the requirements of pleasure parties, was considered. There was no rivalry with any other means of conveyance, for there was room for both cars and omnibuses. The shareholders present expressed themselves as well satisfied with the results as shown by the directors, and a vote of thanks was passed to the Secretary, Mr. G. C. Walker.

## FURIOUS DRIVING AT LEICESTER.

At the Leicester County Police Court, William Nash, motor-car driver, was summoned for driving a motor-car at a greater speed than twelve miles an hour, contrary to the County Council bye-laws. Police-Constable Harding deposed to seeing defendant driving a car down Taylor's Hill, on the Ashby Road, at a pace which witness considered was over eighteen miles an hour. For the defence, it was contended that the pace was not more than thirteen miles an hour. The Act of Parliament allowed motor-cars to be driven at fourteen miles an hour. The Chairman said that whilst that was so the Act also gave local authorities power to issue regulations with reference to the pace at which cars could be driven. A fine of 15s., including costs, was imposed, with the alternative of seven days.

## BICYCLE v. MOTOR-CAR.

RECENTLY two youths named Hillier and Fellinder hired a tandem bicycle at Calne, which they rode as far as the Wagon and Horses at Quemerford, when they met a motor-car coming in the opposite direction round Blacklands Corner. The boys were on their proper side of the road, but from the position of the car they thought they would be safer on the other side, and in attempting to cross they came into violent collision with the car, which is the property of Mr. Lily, Bristol. As was to be expected, the bicycle had the worst of it, and the whole of the front part was considerably damaged. The boys, who were thrown into the road, were much bruised and shaken. The only damage to the car was the breaking of the lamp and the scratching of the splash-board.

At the West London Police Court, on Saturday, Mr. Van Toll was fined 10s. and 2s. costs for alleged furious driving.

A NEW firm has just been formed in Paris (13 Rue Lafitte) under the style of Ernst & Co., to deal in motor-vehicles of all kinds.

THE German military authorities have decided to again use a number of motor-cars at the autumn manœuvres for the conveyance of baggage, ammunition, etc.

THE young gentleman who writes the leading article for one of the cycling papers says there is not the slightest doubt that the speed of motor-cars in the country not only exceeds fourteen miles per hour, but double, even treble this speed is indulged in!

THE capital of the Société Lyonnaise des Velocipedes et Automobiles, Rochet et Schneider, of Lyons, France, is being increased from £20,000 to £40,000. At the same time the title of the Company is being changed to La Société Lyonnaise de Construction d'Automobiles, Rochet et Schneider.



## 1,000 MILES ON A MOTOR-CAR.

**A** FORTNIGHT ago, says the *Eastern Counties Press*, we reported an unique holiday-making excursion, in which a Norwich resident (Mr. E. O. Adcock, of the Uplands, Eaton) and several members of his family took part. The party started on the 6th inst., *en route* for Criccieth, North Wales, and on the 21st they arrived in Norwich safe and sound, being loud in their praises of the motor as a means of touring. Some details of this novel fifteen days' excursion may be interesting. The carriage which was chartered by the party was a motor-wagonette, and was driven by the owner, Mr. H. Watts, of Yarmouth, of whose skilful and careful management the members of the party cannot speak too highly. During the journey of a thousand miles, which included trips to the most picturesque districts of North Wales, not a hitch occurred, whilst the motor's power as a hill-climber was demonstrated over and over again. It may be stated that on the journey across England the tourists, reached Nottingham at the close of the first day, spent the second night at Chester, and made Carnarvon their stopping place on the third night, thence proceeding to Criccieths which was their head-quarters.

On the return journey they took a different route, passing through Shrewsbury, Wolverhampton, Birmingham, Coventry, Market Harborough, Peterborough, and thence to Downham Market and Swaffham. Needless to say, the trip proved of a most pleasant and varied character, the fine weather adding much to its interest and enjoyment. In many districts of North Wales the advent of the motor created quite a sensation among the natives, who seemed to imagine that a part of a railway train had got loose. The apparition caused many villagers to stand speechless in astonishment, and then to seek the shelter of their cottages in a hurry; whilst in several of the small towns, where the market was being held, all the market folks left their stalls to watch the motor making its way through the main street. As we have said, the most hilly roads were successfully negotiated, and the party traversed Llanberis Pass and other beautiful spots. The only change of conveyance in which the travellers indulged was a railway trip up Snowdon.

## A YARMOUTH DRIVER FINED.

At Yarmouth Police Court the Chief Constable said he was on the Parade on Monday afternoon when he saw a car, driven by young Bertie Miller, dashing along the North Parade at a rate of from ten to twelve miles an hour. He waited for its return, and it was then travelling a full twelve miles an hour. There were hundreds of people about at the time, and such a speed on the Drive was most dangerous. The defendant, he added, had been cautioned several times before about furious driving. Mr. Clowes, who defended Miller—summoned for furiously driving the motor-car to the common danger of the public—asked the Chief Constable how he estimated the speed. The Chief replied that there was a smart trotting pony in a gig coming along the Drive at the time at seven or eight miles an hour, and the motor-car travelled up from behind, swished past, and left the gig behind in a moment. Mr. Clowes: Was he travelling at a really dangerous speed?—The Chief Constable: Yes, certainly. What do you call dangerous?—Well, I should call three miles an hour dangerous in some parts of the town—at the corner of Regent and King Streets for instance. Are you aware that even when this car is travelling at the rate of eight or ten miles an hour, it can be pulled up in half its own length?—I have heard it said so.

Inspector Hardesty corroborated the evidence of his Superintendent, saying he thought that, with so many thousands of people about on the Drive as there were that afternoon, the speed of the car was very dangerous.

The defendant, in the witness box, said that between the Aquarium and the Wellington Pier he only drove at the rate of five or six miles an hour. Beyond the Wellington Pier he increased his speed. The car was completely under control, and even at full speed (fourteen miles an hour) could be stopped dead in five yards. Travelling at seven or eight miles an hour, he could pull up in two or three yards—less than the length of the machine. No horse and cart could be stopped so easily and effectually. Defendant produced a certificate of ability as a motor-car driver, saying he had spent three-and-a-half months with the manufacturers of this particular car, which cost nearly £400.

Mr. Clowes urged that if the driver had no control over the machine the Chief Constable would have had very good grounds for proceeding against him; but he could stop the car in a moment if necessary, and was a careful, cautious driver. The newest motor-cars were far safer than an

ordinary horse and cab, and he only wished some of the magistrates would go and examine them closely, so as to realise the wonderful perfection of their mechanism.—The Chairman: I think I know as much about motor-cars as you do, Mr. Clowes.—Mr. Clowes: They have only just come to the town, sir.—The Chairman: But I have examined motor-cars two years ago.—Mr. Clowes: But cars of this type were not constructed then. The cars of that period are quite clumsy and obsolete to-day. They used either to break down or run away. But this is one of the very best and latest type. It was not going faster than you are entitled to drive a horse or ride a bicycle, and it can be pulled up much quicker than you can stop a horse.—The Chairman: That is only an assumption.—Mr. Clowes: I am entitled to suggest assumptions just as the Chief Constable has suggested them. He only assumes the car was travelling at ten or twelve miles an hour; he doesn't know it for a fact, and I defy any man to tell the speed at which one of these cars or an ordinary bicycle is moving. The bicycles of the present day, with their high gears, do fourteen miles an hour on the Drive without being noticed by the police.—The Chairman: This is not a question of the rate at which the car was going, but of whether it was going at such a speed as to endanger life and limb. The Chief Constable and Inspector Hardesty think it was.—Mr. Clowes: And we think it was not. If we were driving wilfully to the public danger, we should have been culpable. But Miller knew exactly what he was doing, and he knew exactly to what extent he could control his car, and knew that there was not the slightest danger to anyone. It is not suggested that he was not taking proper precautions. Some dear old ladies might be frightened, perhaps, but that is all. It is simple tyranny if this car is going to be pulled up by the police when they choose to think it dangerous. The driver of the car knows when there is danger and when there is not, and he regulates his speed accordingly. There would be danger in driving the car through the crowded Market Place on Saturday night at five or six miles an hour, I agree, but there was no danger in the speed of nine or ten miles an hour on the Parade, the broadest thoroughfare in the town, in the middle of the afternoon.

The magistrates, however, decided that it was dangerous, and fined defendant 10s. including costs. At the same time the Chairman warned him to be very cautious in future, saying it had been reported to him that he was not such a careful driver as he professed to be.

## GUINNESS'S CAR IN TROUBLE.

At the Northern Police Court, Dublin, before Mr. Mahony, two men named Bernard Finnegan and David Axon were charged with having been drunk whilst in charge of a motor-car belonging to Messrs. Guinness's Brewery on the North Circular Road, on the evening of the 19th instant, about seven o'clock.

The Sergeant deposed that in consequence of information which he received he went to the railway bridge, North Circular Road, and there found a damaged motor-car, and the prisoners endeavouring to repair it. Both of them were so drunk that they were falling against each other. He caused them to be brought to the station-house and there charged them with being drunk. The motor-car had collided with the footpath, and a third man, who had been on it, was thrown off and injured so much that he had to be taken to the Mater Hospital.

Constables 14 D, 87 D, 98 D, and 44 D were examined, and all swore that the prisoners were drunk. Sergeant 30 D, who took the charge against the prisoners at the station, stated that Finnegan asked him to send for a doctor to say whether they were drunk or not, but he replied that it was unnecessary. Cross-examined: A gentleman came from Guinness's offices to see them when they were locked up, but he was not allowed to see them.

For the defence, Mr. Fitzgibbon examined Mr. W. Smith, of the engineering department of the brewery, who deposed that the prisoners were being taught to work the motor-car, which was used for the delivery of porter. Finnegan was chosen as the best man they had to send with the car and the other man was sent by the Motor Company to instruct the drivers. Mr. W. Bearnes, another official in the brewery, deposed that when the prisoners were going out with the car at five o'clock with a load which they were to take to Finglas they were perfectly sober. Two other gentlemen employed in the brewery deposed that they saw the accused men after the accident and both were perfectly sober.

Mr. Fitzgibbon, in reply to the Court, said the accident occurred through the motor-car getting caught in the tram track and running against the kerbstone of the pathway.

Mr. Mahony asked did Mr. Fitzgibbon wish to have the evidence of the injured man? Mr. Fitzgibbon said he did not.

Both of the accused men were examined, and swore that they had only taken two drinks of porter.

Mr. Mahony said he was satisfied they had had more they said, and fined each £1 or 14 days imprisonment.

THE Municipal Council of Paris has, it appears, hit upon the very best method for supplying a very long-felt want. An electric motor watering-cart has been invented, which seems to be perfection in its way. The vehicle has been experimented with on the Place de l'Hotel de Ville, and answers its purpose admirably. It is provided with a large tank, from which the water is ejected, not in a stream, but in a fine spray, and with a mechanical brushing apparatus.

## A RUNNING DOWN CASE.

—8—

At the Windsor County Court, before his Honour Sir A. G. Marten, Q.C., Mr. Harry Heatly, of 110 Cannon Street, W.C., civil engineer, sued Mr. J. R. Seaton, of the George Hotel, Aylesbury, farmer and hotel proprietor. The action was for damages sustained by the plaintiff in consequence, it was alleged, of the negligent driving of defendant or his servant. Mr. G. M. Cohn, instructed by Mr. Staplee Firth, appeared for Mr. Heatly, and Mr. Moyses, instructed by Messrs. Parrot, appeared for Mr. Seaton. On April 5th last Mr. Heatly was driving his motor-car from Oxford to London accompanied by his wife. On the main road between Taplow and Slough Mr. Heatly in his car was met by defendant's carter, Davis, who was driving a heavy wagon laden with empties and had two horses harnessed tandem fashion. When the vehicles were about fifty yards from one another Mr. Heatly noticed the leading horse of defendant then crossing the road towards the car. Mr. Heatly stopped his car, shouted to the driver to stop his horses, and at the same time stopped the engine in his car, which was thus motionless and noiseless. The horse advanced diagonally and did not appear to be under control of the defendant's carter. Mr. Heatly and his wife got out of the car, and the leading horse passing on the near side of the car entangled its traces in the wheels, and despite Mr. Heatly's exertions to free the machine it was dragged some little distance along the road and eventually forced under the wheels of the dray and completely smashed, the defendant's carter stating that he could not stop his horses. These facts were established by the evidence of Mr. and Mrs. Heatly and a man named Thomas Gregory, who was passing at the time.

The defendant contended that the horses were frightened by the motor-car, and that Mr. Heatly was an unskilful driver and ran his motor-car into defendant's wagon after the horses had swerved.

His Honour, in summing up, instructed the jury that if they thought the collision was an occurrence which could not be prevented by the use of the ordinary means of control with regard to horses then it would be an accident for which no damages could be recovered; but that if they found the defendant had been negligent in allowing a heavy cart of this kind to be sent out tandem position with only one driver, or that defendant's servant was negligently driving or had not proper and ordinary control of his horses, there should be a verdict for the plaintiff.

The jury retired, and on their return gave a verdict for plaintiff for £43 damages, and his Honour gave judgment for that amount with costs.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**FOR SALE.**—Electric Victoria, quite new, made by Thrupp and Maberly of London, the motor by Immish & Co.; in first-class condition. Price £200. For further particulars and order to view apply to C. A. Goffin, Minehead, Ouseley Road, Baham, S.W.

**FOR SALE.**—Mytholm Motor-Car, double cylinder, 3-h.p. petrol motor, three speeds, ball bearings, rubber tires, £110. Photo, three stamps. Also 8-h.p. two-cylinder Mytholm Petrol Motor, complete with tube ignition and carburettor, £55. 3-h.p. two-cylinder Mytholm Petrol Motor, £32.—Brown & Buckton, Hipperholme, Halifax.

**WANTED to Hire,** by a Dental Practitioner in Ireland, a small Motor-Car or Tricycle, suitable for two persons. De Dion preferred.—Apply Box 101, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**MOTOR-CARRIAGES,** deliverable directly, system Panhard, Benz, Peugeot, Mors, Decauville, Cambier, Rochet, Silmeldier; tricycles.—Apply to Géo. de la Nézière, 51 rue Vivienne, Paris.

**FOR SALE.**—Beeston Motor-Tricycle, almost new; owner going in for Motor-Car. Will accept £55.—Nesham, 25 Bright Street, Middlesbrough.

**FOR SALE.**—Benz 5-h.p. Dog-Cart, nearly new; written guarantee given as to condition; many improvements added.—Price and full particulars to Box 72, *The Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**BOLLÉE,** in good order, £60; Motor-Tricycle, tube ignition, £50. Both fast machines.—Owner, 83 Cautsfield Street, Liverpool.

**FOR SALE.**—Benz Ideal Car, only used a few weeks. Can be seen by appointment.—A. Clark, Soham.

**REV. ARUNDELL WHATTON** offers splendid Daimler Marseilles Phaeton, in thorough going order and excellent condition. Luncheon basket, clock, extra screw brake. £290.—16 Montpelier Square, Knightsbridge.

**1899 BEESTON QUADRICYCLE,** for two riders, Dunlop tires, almost new, having been ridden only about 100 miles; good reason for selling; bargain.—Prince, 198 Stretford Road, Manchester.

**WANTED.**—Trailer to carry one or two. State age, weight, and make.—Bernard, 101 Goldhawk Road, Shepherd's Bush, W.

**FOR SALE.**—Four-seated Benz Dog-cart, in excellent order. 5½-h.p. motor. Price £160.—Box 36, *Motor Car Journal*, 39-40 Shoe Lane, London, E.C.

**FOR SALE AS BARGAINS.**—Two Bollées and three De Dion Tricycles, all new, fast machines. Inspection invited. Platinum Tubes and Accessories always in stock.—Motor Agency Co., Ryley Street, Coventry.

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**PLATINUM.**—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797. 24

**LARGE STOCK** of Motor-Car Tricycle Frames, with all latest improvements; two band brakes, cased-in pattern axle, free chain, hubs and pedals, and all connections ready to attach to motor; electric connection in handle-bar; highly enamelled and plated.—Brown Brothers, Ltd., Great Eastern Street, London, E.C.

**MOTORS ON HIRE.**—Daimlers, Panhards, Benz, New Beestons, etc., in good order, by day, week, or month.—The Yorkshire Motor-Car Co., Ltd., Bradford.

**ELECTRICAL EQUIPMENT FOR MOTORS.**—Improved Dry Cells, Accumulators, Special Transformer Coils, Ignition Plugs, Flexible Wire Connections, etc. General Accessories, wholesale and retail.—J. Burns, 44 Berners Street, London, W.

**AGENCY.**—Royal Lancashire Agricultural Show, Liverpool, August 3rd.—Wanted, Charge of Exhibits; fully experienced; can drive, and would act as agents.—The Syren Motor Co., 101 Smithdown Road, Liverpool.

**WORKING DRAWINGS AND TRACINGS EXECUTED.**—Apply, stating terms and wants, to D. 691, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, JULY 7th, 1899.

[No. 18.]

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## COMMENTS.

### Our Recent Issues.

OUR recent issues have been devoted to a large extent to exhibition matters and, we are afraid, have not been as interesting as novel; but it is impossible for us in our pages to ignore exhibitions, and there is no doubt they are doing a great amount of good to the industry by familiarising the British public with the wonderful possibilities of motor-cars. The opportunities of trial rides have been largely taken advantage of, and people once having tasted the pleasures of riding are likely to become converts, and possibly purchasers in the future.

### Our Exhibition.

OUR Exhibition at the Agricultural Hall, like most exhibitions, opened in a very incomplete state, but gradually improved as the week went on. The attendance on Monday, fortunately, was quiet, but became better each day, until on Wednesday there were large crowds of people. The business done by exhibitors seems so far to have satisfied them, and it is not unreasonable for us to suppose will improve. One or two French exhibitors are present, although De Dion's and other foreign firms' machines had not arrived at the time of going to press. We are, however, assured they were despatched last Wednesday week, and should have arrived earlier.

### The Arena.

THE arena has been largely taken advantage of both by petrol and electrical vehicles, and, excepting the turning over of a car and the buckling of a wheel through travelling at excessive speed, no accidents have happened. The sports have been much appreciated, and considering that everyone is new to the business, they have been found exciting and entertaining. The "Balaclava Melée" between men of the 1st London Engineers and motor cyclists has caused much amusement. These sports take place every evening between 7.30 and 9 o'clock, the band playing at the same time.

### Motor-Car Competition in America.

THE Automobile Co. of America, through its president, Mr. A. L. Barber, has announced that on the 20th inst. a competitive automobile test will be made. The winner of the competition will receive a prize of £400. Each machine will be graded on a scale of 175 points, distributed thus: Speed, 20; safety, 20; ease of backing and guiding, 20; power to climb grades, 20; cost of power, 20; low selling price, 20; light and graceful appearance, 15; strength and durability, 10; management easily learned, 10; fuel obtainable everywhere, 10; absence of disagreeable odours, 10. The carriages will start from the City Hall in New York at 9 o'clock in the morning, and will come to a

full stop at each corner until they reach Fifty-ninth Street and the Boulevard, where their arrival will be timed. From Fifty-ninth Street to the south end of Washington Bridge the carriages will move without racing. At the latter point the race for speed will begin. The carriages will move *via* Broadway to the south entrance of the private park of Mr. Henry Villard, thence *via* Mr. Villard's park back to Broadway, thence to Ardsley on the Hudson or to Irvington. At the conclusion of the course the committee will require such tests as they may deem proper. The competition will be international in character, and each firm will be entitled to enter three vehicles.

### Motor-Cars for Day Trips.

THERE should be a good opening for motor-cars in catering for the day excursions of small parties, and such a development only needs a spirit of enterprise to secure success. Messrs. Olley & Co., of Enfield, have a 5-h.p. motor-car which recently conveyed a party from Enfield to Cambridge, the outward journey being *via* Epping and Bishops Stortford. The distance, 52 miles, was easily covered between 7.30 and noon; and the return journey *via* Braughing, which commenced at 3.45, was exceedingly pleasant until a thunderstorm drove the occupants of the car to shelter at Cheshunt. Home was reached at 9 o'clock, the excursionists being loud in their praises of the smooth running of the car.

### Coach Builders and the Motor-Car Trade.

WRITING on motor-car shows, the *Carriage Builders' Journal* (which really should not write "motocar") advises members of the carriage building trades not to neglect attendance. "It is absolutely nonsensical," says our contemporary, "to belittle or neglect the tendency of the public to prefer motor-cars to horse-drawn vehicles, and it is mischievous in the extreme to allow the idea to get abroad that carriage builders are not the right men to supply or construct the motor-cars." Certain it is that the Show at the Agricultural Hall has been visited by many of the leading carriage builders of the country, and a great many more are expected next week.

### The Automobile Club.

For a long time past it has been known that the rate of subscription to the Automobile Club of Great Britain has been insufficient to enable the committee to make both ends meet, and a number of members have been of opinion that the amount should be largely increased. Hence we are pleased with the official information that "In accordance with powers given by the general meeting of members early in this year, the club committee have decided to raise the subscription and entrance fee for membership of the Automobile Club to four guineas and two guineas, respectively for members elected on and after October 1st next who may have addresses within the Metropolitan and

City Police area. The subscription for country members elected on and after the above date will remain at three guineas, and entrance fee at one guinea."

#### An Opportunity for English Firms.

IN the last issue to hand of the *Horseless Age* of New York appears a letter from the National Cash Register Co. of Dayton, Ohio, U.S.A., asking if there can be had, at the present time, a horseless vehicle that can transport loads of two to three tons at a speed of six to eight miles an hour. The Company is not particular as to the motive power, whether electricity, steam or explosive engine.

#### Newcastle Enterprise.

WITH regard to an article on "Motor-Cars in Newcastle," we understand there are three companies in the field and that each of them has placed orders with English firms for *chairs-a-bancs*, etc. At all events, three firms have had representatives during the week in the North, and we have been informed each firm has obtained orders. Already people are writing to the papers suggesting routes for the vehicles, and complaints are also being made that more routes are not included.

#### Our Courtyard.

THE Barford Street entrance of the Agricultural Hall, Islington, has been taken full advantage of by many owners of motor-cars, and at times there have been as many as thirty cars in the yard. For the privilege of storing the cars no charge is made, and every facility is given to private owners for the use of the arena. The London Motor-Van and Wagon Co. up to Wednesday night had not their vehicles ready; but on Thursday several cars were in use, and carrying passengers outside the Hall for a trip.

### SCOTTISH NOTES.

#### The Prince at Edinburgh.

THE event of the week in Scotland has been the visit of H.R.H. the Prince of Wales to Edinburgh during the Highland and Agricultural Society's Show, which opened on Tuesday, July 4th. Edinburgh has been *en fete* for the whole week, and thousands of people from all parts of the country have found their way here. There seems little natural connection between a great agricultural meeting—exhibiting the finest specimens of cattle of all breeds and classes, and the best in the way of fine "horse flesh"—and the mechanical vehicle to the interests of which this Journal is devoted. Yet the occasion of this Show has given thousands of well-to-do people from all quarters an opportunity of experiencing, in most cases for the first time, the comfort and pleasure of motor-car driving. Everywhere the motor-car was in evidence, and the smart fleet of cars owned by the Edinburgh Autocar Co., Ltd., was taxed to its utmost capacity. A regular service between the city and the show ground was established, with the result that this Company's revenue for the week must be a record one. The number of cars placed on the streets of Edinburgh this week by this concern has, I understand, been increased to twelve or thirteen. The Company, I am informed, have adopted a special style of painting by which their cars will be recognised, viz., bodies of dark blue lined in gold, with wheels and under-carriage of coach red, lined out in black. The new cars are all of the wagonette type, which has already been so successful in Edinburgh. It was the intention of some of the Scottish motor-car makers to have important exhibits at the Highland Show, and this would doubtless have been done but for the more important Motor-Car Exhibition now on at the Agricultural Hall, London.

#### Scottish Cars at Islington.

I WAS pleased to observe on my arrival at the Agricultural Hall this week that the Scottish pioneers were well to the front in their exhibits there also. In addition to one or two carriages which came in for so much favourable comment at Richmond, other new cars fitted with standard Daimler motors are shown by Messrs. Stirling. One I noted in particular—a Stirling-Daimler wagonette to seat six persons—simple in style, at a moderate price. A handsome steam omnibus, seated for twenty passengers, is also shown, and is creating a good deal of interest. The bus looks a very serviceable vehicle, and one which should be inspected by all who are interested in motor-car public services. Besides these some three or four new Pennington cars are shown, and a Pennington tricycle is in almost constant employment on the track. After the numerous unavoidable delays in getting the first batch of these new machines out of the factory it is pleasing to see that these pretty little carriages are getting about, and from reliable information which I have obtained the very numerous persons who placed their orders some months ago will not have many more weeks to wait before they are in possession of their cars.

#### The Scottish Club.

FROM enquiry I learn that a meeting in connection with the proposed Club will be called after the close of the London Show.

#### Aberdeen Again.

ABERDEEN has long talked of motor-cars and motor-car services, and so many syndicates have been promised for the purpose that I have become rather sceptical of reports of this nature which emanate from the Granite City. I may, however, say that a movement is at present on foot to establish without delay a motor-hiring business. If well managed it should prove successful, for I believe the field is a good one.

#### Some Show Results.

THE shows which have and are taking place in London in connection with the motor-car movement have very clearly made public the fact that the right people are taking to the new mode of locomotion in very considerable numbers, and I have no doubt that when once the fashion has set in and the output of the factories is increased, this country will not long lag behind the gay Parisians, with whom motor-caring has long been a craze. Another thing which these functions have shown is the genuine interest manifested by two old and conservative trades. The job-master has now awakened to the importance of the impending changes in his line of business, and was to be seen at both Richmond and the Agricultural Hall; and the coach builder, who has from time immemorial worked on the same lines, and with almost the same methods, and who until recently regarded the mechanical carriage movement with contempt, is also waking up and preparing to set his place in order to take part in the movement, and he, too, was prominent at the shows. These symptoms are more important than at first sight appear, and plainly indicate the growing strength of the movement and the rapidity with which it will one day spread. To produce perfection in the motor-carriage a combination of engineer and coach builder is necessary, and I flatter myself that this was first recognized in Scotland.

#### Glasgow Fair.

WITH the approach of the great annual holiday in the West of Scotland, motor-car hirers at the popular seaside resorts are preparing for a harvest, which, although short, is usually substantial, and only fine weather is required to cheer the hearts and fill the pockets of hirers.

"BROWN HEATHER."

## MIDLAND MOTOR NOTES.

By "VERAX."



A Coventry  
"Decauville."

MR. WEST, of Foleshill, who is doing a great deal in the way of experimenting with motors and motor-cars, purchased one of the three-speed Decauville cars at the late Show, and with a view of thoroughly testing the capabilities of the vehicle I drove it for a couple of days, most of the time with three men up. There is no doubt that for elegance of design and general appearance these little cars leave nothing to be desired, and they are certainly comfortable to ride in for two people, the only drawback being the very noisy gear wheels, and the trouble in changing these; one very bad fault in the construction being the necessity, when changing from the first to second speed, of passing the third speed gear wheels. This seems to me to cause needless wear and noise. The gear is practically of the three-speed Panhard type, and everyone is fully aware that the greatest trouble with this class of gear is the probability of damaging the fast-running cogs when changing from one speed to another. The motor itself runs very well as long as it does not get overheated, which is highly probable, as there is no water-cooling arrangement, and one cylinder is behind the other so that only one cylinder gets the benefit of the "breeze." The engine is practically a two cylinder De Dion, but differs from that engine in the firing arrangement. Two coils are used, with ordinary vibrators, and the primary current for these is switched on and off by a couple of contact springs worked by cams on the half-speed shaft. The ignition plugs, too, are of a very neat type, which is an improvement on the De Dion plug. On the central wire of the plug is fixed a pointed arm which terminates about one-sixteenth of an inch from a circular "ring," within which it is capable of revolving. This allows for wear or corrosion, or possibly fusing, and if there is no spark in one position a slight turn of the brass terminal on the one side of the plug allows it to be formed in another. The car proved itself a speedy little vehicle, and covers the ground well. The starting arrangement, too, is very neat indeed, and acts with great precision, so that a temporary stop for shopping or a short visit to a friend does not necessitate any more trouble when over than just taking one's seat, giving the starting wheel a couple of turns, throwing in the gear and sailing away. Ordinary speed regulation in traffic is easily effected by using the mixture valve, which has the effect of immediately reducing or increasing speed as the case may be, although this can be done, but not quite so readily, by using the throttle valve, as in the Benz type of car. One very notable feature of the car is the method of suspension. There are no springs proper on the rear axle, but the front axle is supported by a transverse spring which allows plenty of movement, and which, when the car is running, is in work all the time. This combined with the spring seat makes the car a very comfortable one to travel in. With a view to reducing the noise, Mr. West is making some composite gear wheels, which while having the necessary strength will provide fibre teeth, which should absolutely reduce noise to a minimum. As a hill-climber the car does very well, and carries three persons up a good steep hill, although the low gear gives a speed of nearly eight miles on the level. Altogether the Decauville takes a lot of beating for cars of the light description; but the price seems very high, though there is a lot of work put into the car.

Birmingham.

I PAID a flying visit to Birmingham a few days ago, but motor matters in that city progress very slowly, and no one appears to be really doing much work, and the one or two capitalists

I met seem very diffident of going into the business at present. At the same time one would expect to see more progress in the Midland metropolis. A large

building close to the hospital is the Motor and Cycle Club, but as far as I could ascertain there are no signs of motor-cars there, and beyond a few show-rooms and offices let to machine tool dealers and cycle factors, the place presents at first sight a deserted appearance.

The Crowden  
Steam Brake.

ON Monday of this week I saw this car, which has been referred to at length in your columns, on its way to the station for embarkation to London, where, I understand, it is to be exhibited at the Agricultural Hall. The brake has certainly a neat appearance, and is undoubtedly of good workmanship; it will no doubt attract much attention. It was in tow of a Daimler motor when I saw it, as it was presumably not worth while to get up steam for the short run from the motor works to the station.

THE new syndicate which has purchased a controlling interest in the Daimler Manufacturing Co., Steinway, L. I., U.S.A., will make a speciality of heavy-work vehicles, including brewery and coal wagons.

It is reported on good authority that the Columbia Electric Vehicle Co., of Hartford, Conn., is negotiating for the purchase of the plant of the New Haven Carriage Co., New Haven, Conn., who have been building carriage bodies for them for several years.

ONE of the attractions at the Agricultural Hall Exhibition has been the Phébus stand, and, as our readers are aware, the Phébus is one of the most speedy of the several vehicles of the motor-tricycle type. Mr. Frank F. Wellington, of 58 Rosslyn Hill, Hampstead, we learn, has been appointed agent for London and the South of England.

A SERIOUS accident has happened, according to the *Oxford Journal*, to Mr. George Vallis, of Marston, who is in the employ of Mr. Ernest Underhill, grocer, of St. Clement's, as foreman porter. It appears that Mr. Vallis left his employer's shop on his cycle to go to breakfast, being preceded by a motor-car. Vallis followed behind the car until the turning into Marston Road had been reached, when Mr. Coxeter suddenly turned the motor-car round. Vallis, in trying to avoid a collision, curved round in Cherwell Street; but unfortunately the car struck his back wheel, and he was thrown with some force under the motor, where he remained three or four minutes before he was extricated from his dangerous position. Vallis's right shoulder was dislocated, both knees badly cut, and his forehead and one side of his head much abraded, and he was much shaken. The back wheel of the bicycle was smashed and the machine damaged in other parts.

AT Ledbury, Mr. Frederick Ballard, Chairman of the Parish Council of Colwall, near Malvern, was charged under the bye-laws of the Herefordshire County Council with using a locomotive on the highway at Colwall on June 20th, without a licence. It was contended for the defence that no licence was required for the vehicle, which was a motor-car. Superintendent Phillips said what he objected to was that the vehicle emitted smoke and steam along the highway. It was not a motor-car. Police-Constable Thomas, of Colwall, said that he saw the vehicle being driven along the road, and it was emitting a great quantity of smoke and steam. He gave a description of the vehicle and observed that it made a noise like a traction engine, but he could not say it was a traction engine. Mr. Foster, addressing the Bench for the defence, said supposing that the vehicle emitted smoke or steam that contingency was provided for in the Act of Parliament, as an exception had been provided for temporary and accidental cases. The Bench decided to convict, and imposed a fine of £1. Notice of appeal was given.



# Motor-Car Exhibition at Agricultural Hall.

THE Motor-Car Exhibition at the Agricultural Hall in "merrie Islington" is now in progress, having been opened on Monday last. Each day has seen a steadily increasing stream of visitors, until by Wednesday the public interest was demonstrated in the crowded state of the hall. Some English and French firms have been late in arriving, but the outlook for next week is most promising, and all are anticipating a busy time. The entertainments provided each evening, some account of which has already appeared in these columns, have been much appreciated, while the presence of an efficient band has added to the enjoyment of the spectators and exhibitors alike. Several excursions from leading provincial centres are being run next week, and the interest which has been growing during the last few days should culminate in a very successful *finale* on Saturday week; although those anxious to examine the many types of vehicles shown should not delay their visit till the last day. The arrangements with regard to the Court Yard in Barford Street have been generally regarded as satisfactory, and the commencement of the various "Commercial Efficiency" trials on Monday next, at 10 a.m., is being anticipated with eagerness by many of the leading motor-carists and makers. The arena has been, and will be, a centre of popular interest, the Pennington and other cars demonstrating their possibilities therein at frequent intervals.

## THE EXHIBITS.

### [FIRST NOTICE.]

In a recent issue we expressed the opinion that however divided ideas may be as to the relative progress being made by builders of light motor-vehicles in this country as compared with Continental competitors, there can be no doubt that in one department at least—that of heavy steam-driven cars—English firms are rapidly taking the lead. If any proof of this fact be needed it is to be found in the large steam 'bus (Fig. 1) exhibited by the Liquid Fuel Engineering Company, of East Cowes, Isle of Wight. It is unnecessary to enter into a

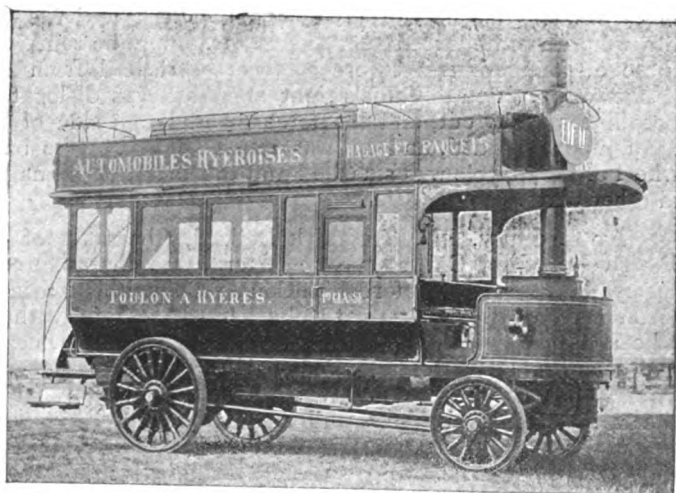


FIG. 1.—THE LIQUID FUEL CO.'S FRENCH OMNIBUS.

lengthy description of the boiler, engine, and transmission gear of this vehicle, which are now fairly well known, and which were described at length in *Industries and Iron*, November 25th, 1898. Suffice it to say that the boiler is of the water-tube type, is oil-fired, and is located in the fore part of the vehicle. The engines are of the horizontal compound reversing type of 45 h.p. The 'bus, which is finished in

handsome style, is arranged to accommodate twenty-eight passengers, twelve on top and sixteen inside. The interior is divided into two separate compartments, first and third class, with different entrances. Baggage to the extent of 10 cwt. can also be carried on the roof. Tanks for containing about eighty-eight gallons of water are arranged under the seats, while about forty-six gallons of oil for firing purposes can be stored in tanks arranged on the frame, under the floor of the

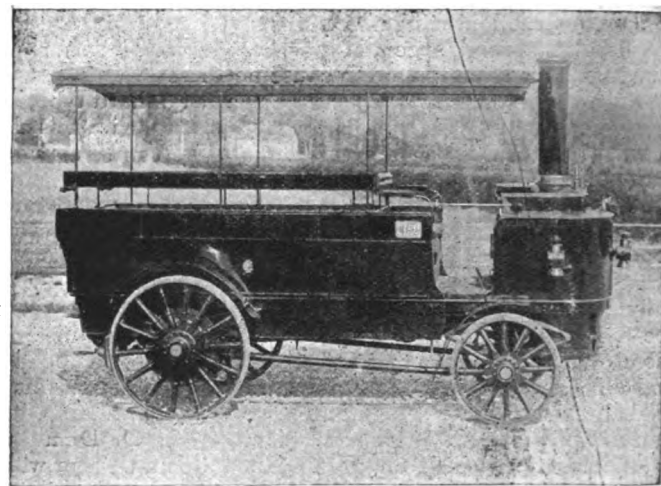


FIG. 2.—THE LIQUID FUEL CO.'S STEAM WAGONETTE.

'bus. The vehicle is, we understand, one of an order for four, and intended for a French company for service between Hyères and Toulon. The Liquid Fuel Co. also exhibit their well-known 14-seated steam wagonette (Fig. 2) and a steam lorry to carry from four to five tons. A specimen of their shielded rubber-tired wheels for heavy vehicles is also displayed. The wheel has a steel tire, above which is a layer of rubber, above which again is a steel rim built up in separate segments; the makers claiming that the arrangement reduces vibration, and also the tendency to slipping and skidding.

The Steam Carriage and Wagon Co., Ltd., of Homefield, Chiswick, London, W., exhibit a steam lorry intended to carry a load of three tons, and to haul a further three tons on a trailer, built on Thornycroft's system. The boiler, which is of the Thornycroft water-tube type, is located in the fore part of the vehicle; it is coal-fired, although it can be adapted for liquid fuel firing if desired. The heating surface is 65 square feet, the grate area  $2\frac{1}{2}$  square feet, the test pressure 350 lb. per square inch, and the working pressure 180 lb. The engine, which is of the horizontal compound type, is entirely enclosed in a dust-tight casing, the moving parts working in an oil bath. Provision is made for the carrying of coal sufficient for a run of fifty miles, or of water sufficient for about fifteen miles. The tare weight of the vehicle is 2 tons 18 cwt. This vehicle is fitted with a new power transmission mechanism, of which we are able to give but few particulars. From a cursory inspection, however, we gathered that the rear axle, which is a compound one, is driven by spur wheels. The rear road wheels are mounted loosely on the solid axle, and are driven through the medium of springs attached both to the hubs of the wheels and to the hollow axle surrounding the solid one. A two-speed gear is provided, with the low one of which it is stated that a gradient of 1 in 6 has been climbed. At the recent trials at Richmond a vehicle of this type maintained an average speed of 5.4 miles per hour, over a twenty-miles course, at an average expenditure for fuel of 1.055d. per mile.

Messrs. Bayleys, Ltd., of Newington Causeway, Southwark, S.E., exhibit a petroleum-spirit motor-omnibus (Fig. 3) capable of seating twenty-six passengers. In fact the body is similar to the 'buses used in London, but is mounted on a channel-iron frame, to which the motor and transmission gear is mounted. The motor which is located in front is on the Panhard system, comprises four cylinders, and is stated to be capable of working up to 12 h.p. The power is transmitted through bevel gearing to a counter-shaft at the rear,

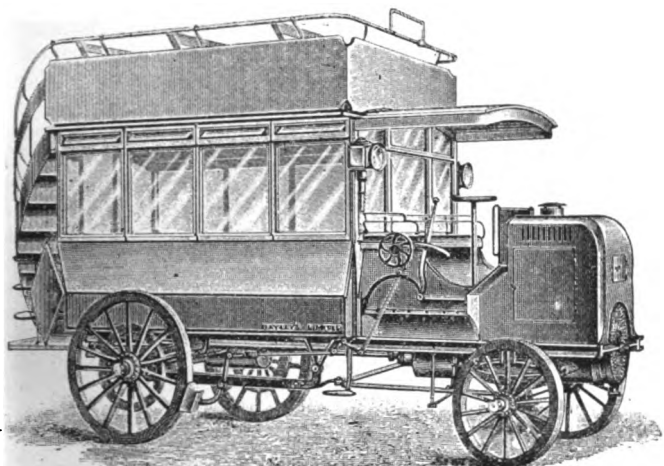


FIG. 3.—MESSRS. BAYLEY'S PETROLEUM-SPIRIT MOTOR-OMNIBUS.

and from the latter to the rear road wheels through pinions gearing with internal-toothed rings bolted to the road wheels. Three forward speeds ranging from five miles up to fourteen miles per hour, and one backward motion are provided. Steering is effected through the front wheels by means of a hand wheel. Three brakes are provided, two band brakes acting on the hubs of the rear road wheels, and a band brake working on a drum on the motor-shaft, which is automatically applied by the throwing out of the friction clutch.

Messrs. Bayleys, Ltd., also exhibit the steam trolley which took part in the recent trials, a tip-wagon body having been in the meantime substituted. This vehicle is a veritable combination of parts, comprising a De Dion water-tube boiler, a Straker motor, and a transmission mechanism very similar to that employed on the Daimler petroleum-spirit cars. The vehicle is stated to weigh, unladen, 58 cwt., and to be designed to carry a load of four tons. The De Dion boiler, which is coke-fired, is located in the fore part of the vehicle. The engine, which is of the vertical compound type, is arranged under the driver's seat; it is stated to indicate 20 h.p., the normal speed being 500 revolutions per minute. The shaft of the motor extends from the front right to the rear of the car, where the power is transmitted through bevel gearing to an intermediary shaft. The latter carries at its ends small pinions, which gear with internally-toothed rings bolted to the rear road wheels. A variable speed gear is provided, and it is stated that the wagon can attain any desired speed from two to seven miles per hour. The road wheels are strongly built and dished. Ample brake-power is provided, there being a shoe brake acting on a drum on the motor shaft, and band brakes on each of the internally-toothed rings connected to the rear road wheels. The result of a twenty-mile test of this wagon was given in our last issue.

The Crowds Accumulator Syndicate, Ltd., of Bridge Place, Eccleston Square, London, S.W., exhibit their "Crowds" accumulator, for which it is claimed that it has a capacity of 10 watt-hours per lb. of cell. The sheet lead used for the grids is of a specially pure quality, containing no antimony. It is passed through a press and cut and stamped to shape, the resulting grid having the appearance of expanded metal. The grid so obtained is very light, and bends under its own weight, the idea of this being that it is considered there is no advantage in making the grids so strong as to last longer than the active material they are incorporated with.

In assembling an element each plate is wrapped in a sheet of absorbent pulp or cellulose, and separators of perforated insulating material are then placed between each positive and negative plate. The whole is then placed within an ebonite box and the electrolyte added. The cellulose wrappers absorb the liquid, causing the former to swell, with the result that the plates are firmly held within the cell, and all chance of the active material washing away from the plates prevented. The cell is fitted with a light-fitting rubber cover, through which the poles project, and in the middle of the cover is a screwed cap for examination and filling. Connection between adjacent cells is made by a flexible stranded copper wire having brass collars and well insulated. The accumulator is being made in a number of sizes ranging from 100 ampère-hour up to 240 ampère-hour capacity. The following are the details of the 100 ampère-hour cell, the internal resistance of which is given as .008 ohm: Dimensions of box outside, 5 $\frac{3}{4}$  in. by 3 $\frac{7}{8}$  in. by 8 $\frac{1}{2}$  in.; total weight of complete cell, 14 lb.; height over all, 9 $\frac{7}{8}$  in.; available capacity at 10 ampères, 100 ampère-hours; 15 ampères, 90 ampère-hours; 20 ampères, 85 ampère-hours. We understand that the Crowds cell has already been adopted by a number of electrical motor-car builders in this country, including the Electric Motive Power Company, Balham, the Electric Street Car Manufacturing Syndicate, Wolverhampton, and the Madelvic Company of Granton.

The Electrical Undertakings, Ltd., of Miller Street, High Street, Camden Town, N.W., are attracting attention by their exhibit of a new type of electrical vehicle, which is built on Leitner's system. Five vehicles are shown, a four-seated sporting trap (Fig. 4), three two-seated buggies, and a phaeton (Fig. 5). Two electro-motors, of the Lundell type, and of 2 $\frac{1}{2}$  h.p. each, are provided—one to each of the rear road wheels—the connection being by means of spur-wheels on the motor shafts gearing with internally-toothed rings on the rear road wheels. The controller is adapted to give no less than six forward speeds, ranging from two to twenty-eight miles per hour and two backward motions. The motor is so arranged that in



FIG. 4.—THE ELECTRICAL UNDERTAKINGS', LTD., FOUR-WHEELED DOG-CART.

descending hills it can be reversed and employed in recharging the batteries. The battery consists of forty Leitner-type cells, the capacity of which, in the buggy, is given as 10,000 watt-hours at fifteen ampères discharge rate, corresponding to eight to ten miles per hour, while the weight of the battery is about 400 lb. In the sporting trap the battery weighs about 800 lb., while the capacity is given as 20,000 watt-hours, at twenty-five ampères discharge rate. Considerable attention has been devoted to these cars owing to the fact that one of

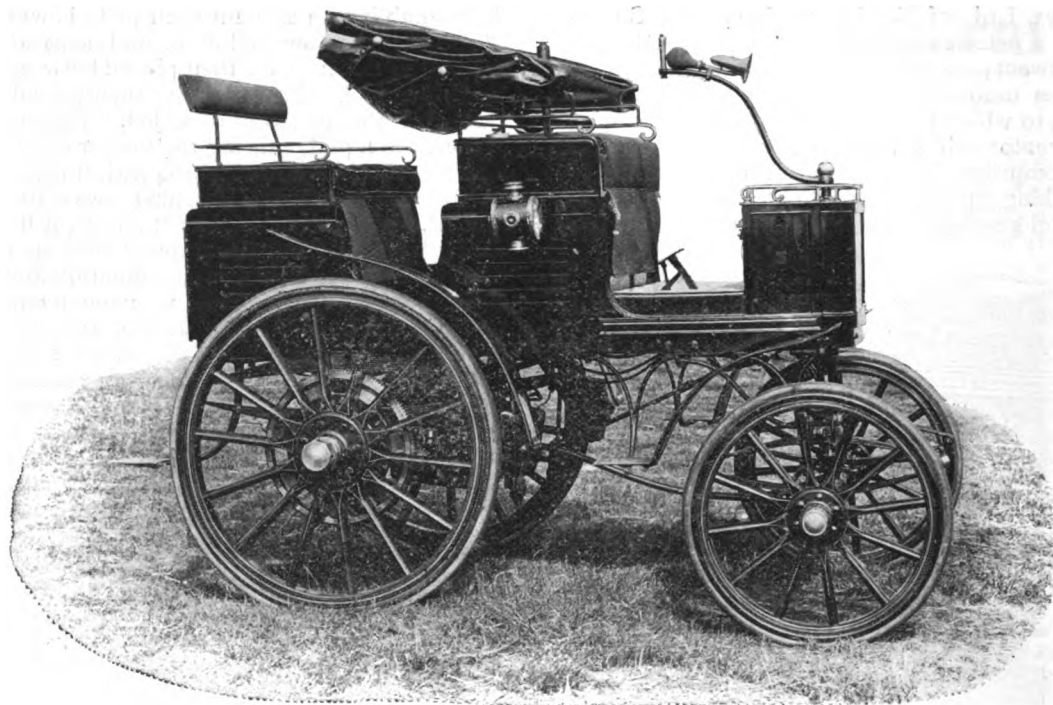


FIG. 5.—THE ELECTRICAL UNDERTAKINGS', LTD., PHÆTON.

them ran last week from London to Brighton at an average speed of twelve miles per hour, on one charge only, a record which the Company hope to beat in the early future. The total weight of the cars ranges from about 15 cwt. in the case of the buggy, to about 20 cwt. for the sporting trap.

The Mackenzie Carriage Works, of 26 Walnut Tree Walk, Kennington Road, Lambeth, S.E., exhibit three electrical cars—a Riker two-seated mail phaeton, a Mackenzie four-seated sporting dog-cart, and a Mackenzie three-seated phaeton. The frame of the Riker car is built up of steel tubing. The electro-motor is of  $1\frac{1}{2}$  h.p.; it is arranged in front of the rear axle, which it drives by means of spur gearing. The electrical energy is furnished by a battery of forty Headland accumulators of a capacity of 90 ampère-hours. The wheels are of the suspension type fitted with pneumatic tires, the weight of the car complete being  $18\frac{3}{4}$  cwt. Three forward and two backward speeds are provided. The Mackenzie dog-cart is built very much on Riker lines, but shows a number of detail improvements both in the carriage body design and in the mechanical arrangement. The frame is tubular, the connecting rods controlling the steering of the front wheels being of an improved design. The electro-motor, which in this case is of 3 h.p., is geared by means of spur wheels to the rear axle, a band brake operated by a foot pedal being incorporated with the spur wheel on the latter. The battery consists of forty cells of the "Victoria" type, of a capacity of 150 ampère-hours, or sufficient for, it is claimed, a run of sixty miles on one charge, the weight of the battery being 10 cwt. Three forward speeds—the maximum being twelve miles per hour—are provided, these being controlled by a single handle. The weight of this car complete is 23 cwt. The Mackenzie phaeton is of a very neat design, the electrical gear being the same type as the dog-cart with the exception that the motor is only of  $1\frac{1}{2}$  h.p., while the accumulators are of the "H. and H." type.

Messrs. Shippey Bros., Ltd., 13 King Street, Cheapside, London, E.C., have a large display of motor and electrical accessories of all kinds for electrical motor-vehicles, chief among which is a 2-kilowatt 80-volt electro-motor with fixed carbon brushes as used in automobile vehicles on the Riker system, and a 3-h.p. 75-volt "Paragon" four-pole motor. Other exhibits comprise a Riker standard controller-switch giving three forward-speed and two reverse motions, "Monarch" accumulators, a spark coil battery, switches and cut-outs for

motor-cars, ventilating fan sets, gongs, bells, etc., all of interest to builders and users of electrical cars, but to which pressure on our space forbids a lengthy reference at the present time.

Le Carbone (late Lacombe & Cie.), of Levallois-Perret, Paris, and 36 Lime Street, London, E.C., have an interesting display of electric accessories for use in connection with motor-carriages. Chief among them may be mentioned the "Sans-pareil" dry battery for use with the ignition apparatus of petroleum-spirit motors on carriages, yachts, tricycles, bicycles, etc. It is claimed for these cells that they give the maximum output for the minimum of weight and dimensions. The cells offered for tricycles, with suitable coils, will last between 300 and 500 working hours, according to the conditions in which they are employed. A special set is also now being made for bicycles. Another exhibit is to be found in the Rossel coils, which are specially wound and arranged for ignition apparatus on gas and oil motors. The advantages claimed over the coils hitherto employed are that they take a very small current and can be relied upon to give a spark at the desired interval without failing, while they can be run with dry batteries. Le Carbone Co. also makes a speciality of carbon brushes. It is claimed that the most successful carbon brushes yet offered are those made of X carbon, which is produced in electric furnaces under the Girard & Street patents. Its conductivity is double that of other carbon, and brushes made from it will, it is claimed, carry currents up to 16 ampères per square centimetre of surface contact, which allows for the reduction of commutators.

Mr. J. H. H. Berkeley, of Throgmorton House, Cophthall Avenue, E.C., shows a one-seated electric carriage, which takes the form of a bath chair, the motor being enclosed in a case at the rear. The electrical energy is stored in a small battery of 14 Sherrin cells arranged under the seat, one charge being sufficient for a run of about 20 miles. The switch is arranged to give any desired speed up to a maximum of about 9 or 10 miles per hour, a reverse motion being also provided. For simplicity this little vehicle would be hard to beat, there being only two small handles—one for varying the speed and one for a reverse motion—to control, in addition to the steering handle. We understand that a four-seated electrical Victoria and another vehicle will be on view at this stand in the course of a day or so.

An exhibition on which a large amount of interest is being centred is that of Messrs. Pennington & Baines, of 5 and 6 Great Winchester Street, London, E.C., and Manchester. A large display of the Pennington cars is made, including several types, prominent among which are a "Universal" four-seated car and a new Pennington-Stirling car. Fig. 6. The latter is an attractive-looking vehicle, the car body being of varnished walnut, upholstered in brown cloth to match, and fitted with a hood. The Pennington motor is mounted under the floor of the vehicle, the fly-wheel being fixed horizontally. Some alteration in the driving gear appears to have been made since the writer last inspected a Pennington car—the motor driving a horizontal pulley at the rear by means of a light cycle chain, the pulley being now connected to the front wheel axle by a belt in place of a rope as formerly. The road wheels are of the suspension type, shod with pneumatic tires; the rear wheels are the steerers, and are controlled by a handle at the side of the car. Another feature of the Pennington car is that no carburettor is employed in connection with the motor, the oil being fed directly into the explosion chamber, passing on its way through the exhaust silencer and so receiving a preliminary

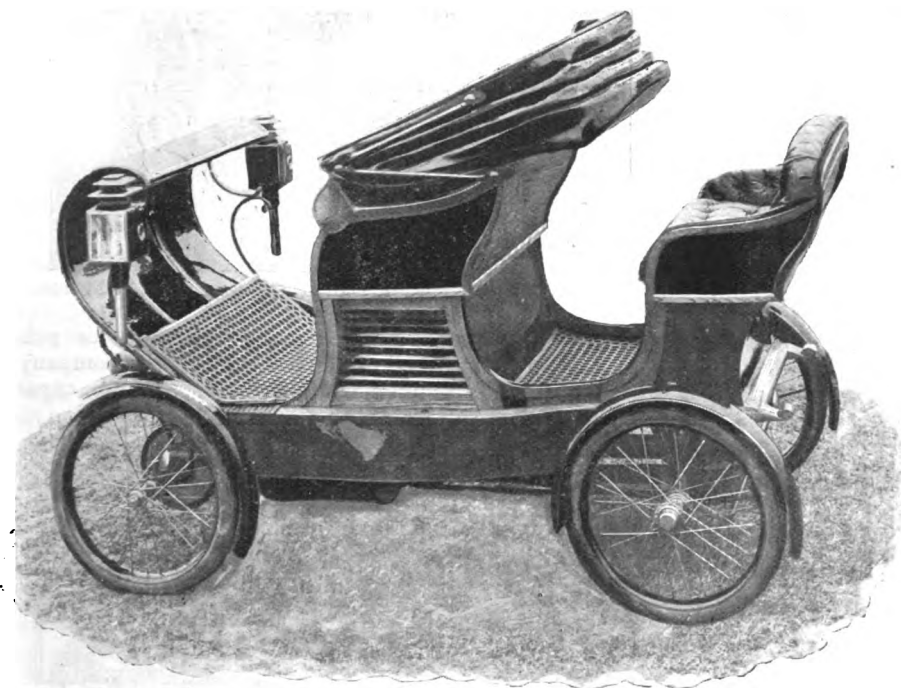


FIG. 6.—THE NEW PENNINGTON-STIRLING CAR.

heating. Although the use of a carburettor is avoided, it is claimed that not only is perfect combustion secured, but every drop of oil is utilised, and the maximum power is developed from the amount of the hydro-carbon consumed. The cylinder is fitted with both a water-jacket and radial discs, attention being drawn to the small amount of cooling water required to be carried. As the centre of gravity of the car is only some eight inches from the ground, and the wheel-base being long, it is almost impossible to upset the car; indeed, the stability is so great that the car can, it is stated, be swung round in a narrow road when going at its top speed. Besides the positive speeds obtained by changing the gears, two of which are provided, any intermediate speed can be got by the regulation of the oil supply, the oil being passed to the motor from the tank in which it is stored through a needle valve, and a quarter-turn of the valve handle, conveniently placed within reach of the driver's hand, will decrease or increase the oil supply, and the result on the motor is instantaneous. The entire motor and its mechanism, with the horizontal fly-wheel, is placed below the level of the framework, and consequently the carriage-builder finds no obstacle in the way, but has

free scope for the exercise of his skill in getting out a commodious and elegant super-structure; in fact, different types of bodies can be fitted on the same frame. For instance, a tradesman can have a parcels delivery van fitted on his motor frame, and through the week the motor can be used for trade purposes; and at the week end the van body can, by means of a pulley and block attached to the roof of the carriage house, be slung up, and a neat pleasure carriage body substituted—the whole change taking but a few minutes. The "Universal" car is fitted with a single-cylinder motor, by means of which a maximum speed of sixteen miles per hour can be attained. The new Pennington-Stirling has a twin-cylinder motor, which permits the car to be driven up to a maximum speed of thirty miles per hour. In order to enable persons to examine for themselves the details of the Pennington motor the firm are showing a number of the separate parts of the same, the high-class finish being generally admired.

Quite a new departure, to be seen for the first time at the Agricultural Hall is the Pennington motor-tricycle. This is fitted with a Pennington motor, with electrical ignition and radial discs for cooling purposes. A feature of this machine is the absence of the usual carburettor, the formation of the carburetted air being carried out on the same system as in the Pennington cars. The motor works up to about  $2\frac{1}{2}$  h.p., enabling a speed of 30 miles per hour to be attained. The motor pinion drives the spur wheel on the rear axle direct, but a new departure is the introduction of a friction clutch, so that the motor can be kept running whilst thrown out of gear with the rear axle of the machine. This is, of course, a great advantage when riding in crowded thoroughfares.

A vehicle of quite new design is the Oxford three-wheel two-seated car, shown by Messrs. F. Jackson & Co., of 77 Oxford Street, London, W. The body of the car, which is very attractively finished, is supported on the frame by C springs. The motor is of the vertical single-cylinder petroleum-spirit type, capable of working up to  $2\frac{1}{2}$  h.p.; the ignition is electrical, while radial discs around the cylinder provide for the cooling of the same. The motor is arranged centrally in the front portion of the car, and is provided with a starting handle. The crank shaft works in an oil-containing chamber. Two forward speeds are provided, the two-speed gear adopted being one of the most simple and compact that we have so far seen. The transmission is effected by belts which normally run slack. On the centre of the rear axle is mounted a large pinion, around which is fitted what may be termed a double-purpose gear case, for, in addition to enclosing the pinion, it serves as the support for two small shafts at the top and bottom, these shafts carrying at one end small pinions continually in gear with the large pinion, and at the other end small pulleys for the two belts. A feature of the device is that in changing from the high to the low speed or *vice versa* the handle lever pulls round or pushes back the gear case entirely through a short distance, carrying with it the pinions and belt pulleys. Thus, to put in gear the low speed the lever is pushed over; this has the effect of causing the small pinions to simply roll round the large pinion, one receding and so tightening the corresponding belt, the other coming forward and allowing its relative belt to run slack. Thus both small pinions are continuously in gear with the large pinion, although only one can be driving at a time. With the hand lever in a central position both the belts are slack, the motor being thus cut out from the transmission gear. The whole arrangement is exceedingly simple, and has attracted considerable attention



during the week. Another feature of the gear is that it enables the belts to be taken off for repair, etc., within a few minutes. Indeed, the representative in charge of the stand took off and replaced one of the belts in less than a minute in our presence. The frame of the car is built up of steel tubing, the wheels being of the suspension type with pneumatic tires. A band brake acting on the differential gear on the rear axle is provided, while the steering is controlled by a hand wheel. The car can, it is stated, attain a maximum speed of 15 miles per hour, while with the low gear gradients of 1 in 10 can be mounted. The weight of the car complete is given as 3 cwt., and in view of its low price—£90—there is reason to anticipate that the "Oxford" cars, which we hope to illustrate in a later issue, will soon become very popular. The firm are also building a vehicle of the same type but with four wheels. Another novelty on this stand is a new motor-bicycle which, on first appearance, reminds us of the "Werner." The motor, which is of 1 h.p., is fixed on the "head" of the bicycle and drives the front wheel by means of a cycle chain. The ignition is electrical, and the cooling of the cylinder by radial discs. The motor runs up to a speed of 2,000 revolutions per minute, a speed of 20 miles per hour being, it is stated, attainable without resorting to the use of the pedals. The carburettor in connection with this machine is of a new type, so arranged as to only permit a sufficient quantity of petrol for one explosion to pass at a time. Messrs. Jackson are also exhibiting a motor-tricycle fitted with a De Dion 1½-h.p. motor, and with a front seat attachment, so that the machine can be quickly converted into a quadricycle for two persons.

Although at first glance the vehicles exhibited by the Daimler Motor Co., Ltd., of Coventry and Shaftesbury Avenue, London, W.C., would seem to show but little change from those of a year ago, yet closer inspection brings to light that a good many modifications and improvements have been adopted with the view of increasing the efficiency of this well-known type of motor-vehicle. Of the standard 5½-h.p. type

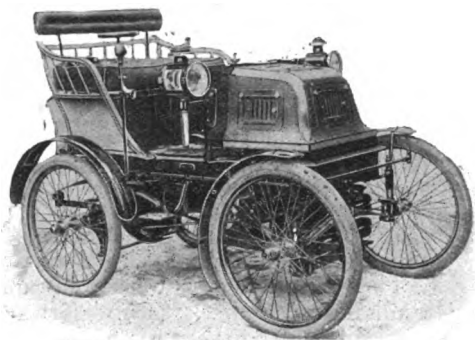


FIG. 7.—THE DAIMLER CO.'S NEW "CRITCHLEY" TWO-SEATED LIGHT CARRIAGE.

three vehicles are shown, viz., a "Universal" sporting car, convertible to dog-cart, phaeton, or wagonette, a Cranford wagonette, and a "Marseilles" phaeton. The foregoing vehicles are provided with four speeds, ranging from four to sixteen miles per hour, together with a backward motion. Stronger gearing is now being fitted into the vehicles, while larger bearings generally are being employed. The Daimler Company are also now fitting their vehicles with a water-cooling coil, by the use of which the amount of water to be carried for cooling purposes is reduced to four gallons, sufficient, the makers state, for an ordinary day's run, without it being necessary to refill the water tank. The vehicle of this Company which has attracted considerable attention during the week is the new light two-seated carriage illustrated in our issue of the 9th ult., to which we refer our readers for further particulars. The car (Fig. 7) is fitted with a motor capable of working up to 5½ h.p. The car weighs complete only 9 cwt., and is fitted with two speeds, eight and sixteen miles per hour, a hill-climbing gear giving four miles per

hour and a reverse motion. The Daimler Co. is also, we understand, now arranging to build large wagonettes and *chars-a-bancs* to accommodate from sixteen to twenty pas-

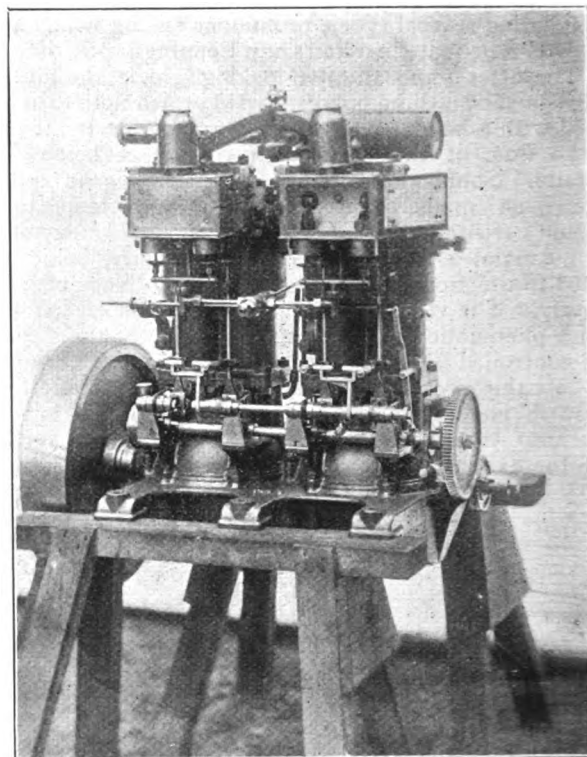


FIG. 8.—GENERAL VIEW OF DAIMLER FOUR-CYLINDER MOTOR.

sengers, the vehicles being specially adapted for public motor-car services. For these latter vehicles the company is now building a four-cylinder Daimler motor (Fig. 8), capable

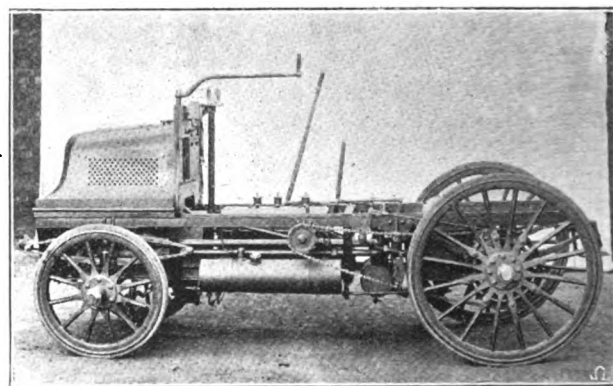


FIG. 9.—GENERAL VIEW OF DAIMLER STANDARD FRAME.

of working up to 11½ h.p., an example of which is to be seen on the stand. Fig. 9 gives a general view of the Daimler standard frame, with motor and transmission gear.

A very large display is made by the Motor Manufacturing Co., Ltd., of 47 Holborn Viaduct, E.C., and Coventry. The exhibit is of a very varied character, comprising no less than five distinct types of vehicles. First we find motor-tricycles fitted with a 1½-h.p. English-built motor of the De Dion type, arranged with either tube or electric ignition, one of the machines shown having a frame adapted for a lady. A two-seated motor-quadricycle is also displayed, while the second type is to be found in a three-seated Bollée voiture adapted to seat two persons in the front, with the driver at the rear. Class No. 3 is to be found in the Panhard-Daimler type of vehicles fitted with a 5½-h.p. motor on a standard frame. Of these several are shown, ranging from a neat four-seated dog-cart to a nine-seated *chars-a-banc* of the kind which is now being employed for public services in various parts of



the country. In this class must also be included a motor parcel van capable of carrying loads up to close upon one ton. Type No. 4 is to be found in the Sandringham phaeton. This is a four-seated vehicle of the type introduced towards the end of last year. It is fitted with a 6-h.p. Iden horizontal motor, four forward speeds and one reverse motion being available. The principal novelty at this stand is, however, the Princess two-seated sociable car. This vehicle was illustrated in our issue of May 26th, but has since been considerably altered in the details. It may be mentioned that the motor is of the two-cylinder horizontal type of  $4\frac{1}{2}$  h.p., with tube ignition and water-jacket. The power is transmitted from the motor-shaft to the counter-shaft by spur wheels and from the latter to the rear road-wheel axle by a central single chain drive, a jockey-pulley arrangement being provided to secure the proper tension of the chain, which is of a larger type than in the first Princess car. Three forward speeds and two reverse motions are provided, while a special feature is the provision of a governing device by means of which when the car is at rest the motor may be kept in motion but slowed down to the extent of but one explosion per minute. The normal speed of the motor is 750 revolutions per minute, but this can be increased to 1,100 revolutions, giving the car a maximum speed of 23 miles per hour. Another feature of the car is to be found in the suspension; not only is the body supported on the frame by helical and C springs but the frame is also supported on the axle through the medium of helical springs. The bearings of the axles are also carried in a box which is free to slide up and down in the support, provision being thus made for the taking up of any strain very much in the same way as is done in locomotives. Another new feature is the provision of a sleeve to, and entirely covering, the rear axle. The vehicle, which weighs complete only  $8\frac{1}{2}$  cwt., is provided with a detachable splash-board, in place of which a small additional front seat can quickly be fitted, while instead of a front seat a rear one can be attached if desired. The new car is very handsomely finished, and altogether is a vehicle which should rapidly attain popularity in the automobile world.

Messrs. Marshall & Co., of Belsize Works, Clayton, Manchester, are present with a couple of their English-built "Hurtu" cars. As we illustrated and described these neat and elegant cars so recently as our issue of June 9th last, it is unnecessary to further refer to them on the present occasion, except to state that they have excited general admiration. Mr. Rush, of the London Autocar Co. is in charge of the exhibit, and has given demonstrations of the running of these cars on the track.

Messrs. Friswell, Limited, of 18 Holborn Viaduct, London, E.C., have a large exhibit of motor-vehicles and motor-cycles. The former comprise cars of the well-known Mors and Benz types, and the latter are of Messrs. De Dion and Bouton's construction. One of the Benz cars on view is fitted with a detachable coupé body, of which Messrs. Friswell are making a speciality. Although the coupé presents a somewhat odd appearance, there is no doubt that for those who use their cars in all weathers it is a convenience. A novelty so far as this country is concerned is the "Elan" two-seated carriage, a French-built car of neat design. As we illustrated this car in our issue of the 23rd ult. it is only necessary to mention that the motor is of the vertical petroleum-spirit type; it comprises two cylinders, with electrical ignition, and is capable of working up to 3 h.p. For cooling purposes, radial discs to the cylinders are relied upon, aided by a small fan driven off the motor, which is located in the front portion of the car. As regards the transmission gear, in line with the motor-shaft, and connected with it by a friction-clutch working inside the fly-wheel, is a variable speed gear shaft, suitably enclosed. Four forward speeds—6, 12, 24, and 35 kilometres per hour—and one backward motion are provided, all controlled by a single lever within convenient reach of the driver. From the variable speed shaft the power is transmitted through bevel wheels to the differential shaft, and from the latter to the rear road wheels

through the usual sprocket wheels and chains. Three brakes are provided—a band brake on the differential shaft and shoe brakes on each of the rear road wheels. The weight of the carriage complete is a little over 6 cwt. Messrs. Friswell, Limited, also exhibit on a separate stand a large range of accessories for motor-car and tricycle users.

The exhibit of the Motor-Carriage Supply Co., Ltd., of Donington House, Norfolk Street, London, W.C., is of a varied character. A German-built Daimler motor-lorry occupies a large amount of space on the stand. It is fitted with a  $7\frac{1}{2}$ -a.h.p. Daimler motor and Daimler transmission gear, and is intended for loads of from  $3\frac{1}{2}$  to 5 tons. Four speeds forward are provided, ranging from 2 to 8 miles per hour. It is intended for a load of from  $1\frac{1}{2}$  to 2 tons. A Cannstatt-Daimler wagonette and a sporting car are the next vehicles which call for mention; these cars are fitted with a  $5\frac{1}{2}$ -h.p. motor, and four speeds ranging up to a maximum of sixteen miles per hour. The cars possess several novel features, the most important of which is the method of fixing the motor, which, together with the speed-gear, is mounted upon a separate tubular frame, so as to greatly minimise the vibration imparted to the main frame and body of the car. Another point worthy of notice is the means employed for reducing the quantity of water required for cooling purposes, which is effected by a new water-cooling apparatus, consisting of a reservoir containing only  $2\frac{1}{2}$  gallons of water, placed in front of the car. The tank is closely packed with small tubes, round which the cooling water circulates. A current of air is drawn through the tubes by means of a fan on the crank shaft of the motor, thus effectually preventing the circulating water from becoming overheated. The arrangement of the speed-gear is also new. The four speeds are divided into pairs, each pair being placed into or out of gear by a separate lever, and is so arranged that while one speed is in gear it is impossible to move the other pair, the lever for that being locked. The foot brake lever, as well as applying the brake, actuates the clutch on the main shaft, thus throwing the friction cone out of gear and applying the brake with one movement only. The bodies of the cars have been built in this country by Messrs. Mulliner, of Northampton. The Motor-Car Supply Co. also exhibit their "motor-wheel"—a three-wheel vehicle, their motor-scout for military purposes, Simms' petroleum-spirit motor of  $1\frac{1}{2}$  h.p. (the feature of which is the large *ailettes* or radial cooling discs), and their well-known magneto-electric ignition device.

The main feature of the exhibits of the Southern Motor-Car Co., of 59 Brixton Road, London, S.W., is the "Georges Richard" light two-seated petroleum-spirit motor-carriage known as the "Duke," an illustration of which was given in our issue of the 23rd ult. The car, which has a neat and attractive appearance, is French built, and is very much on the lines of the well-known Benz carriages so far as the motor and power-transmission mechanism is concerned. The motor is of the single-cylinder type, capable of working up to  $3\frac{1}{2}$  h.p. It is located in the rear portion of the vehicle; its normal speed is 750 revolutions per minute, but it may be varied from between 300 and 1,200 revolutions by means of a button controlling the quantity of carburetted air admitted to the explosion chamber and also by advancing or retarding the electrical ignition. The cylinder is water-jacketed, a series of tubes for cooling the heated water being contained in the rear portion of the body. Three changes of speed—5, 12, and 20 miles per hour—including the new hill-climbing gear of the crypto type, are provided, the transmission being effected by means of belts working on fast and loose pulleys. The road wheels are of the suspension type, fitted with pneumatic tires. The Company are also exhibiting a De Dion  $1\frac{1}{2}$ -h.p. motor-quadracycle for two persons, while in addition they have on view a large range of motor-cycle and motor-car accessories, such as horns, tool bags, dry batteries, mudguards, etc., etc.

The popular little Benz motor-cars are kept well to the front by Messrs. Hewetsons, Ltd., of Dean Street, Oxford Street, London, W., who have eight or nine cars of different

types on view. This type of car is now so well known that it is difficult to say much that is new regarding them. It may be mentioned, however, that the 1899 type of "Ideal" two-seated car is fitted with three forward speeds, including a hill-climbing gear, by means of which it is claimed the vehicle can readily mount gradients of 1 in 4. The various details of the car have also been modified and strengthened as experience has shown to be necessary, the result being a little carriage which is well intended to maintain the already great popularity of this firm. One of the cars shown is provided with a detachable front seat so that it can readily be adapted to accommodate three persons. A Benz dog-cart is also on view. This is capable of seating four passengers, and is fitted with a double-cylinder motor of 5 h.p. Provided with three speeds forward and one astern, this car will, it is claimed, maintain an average speed of eighteen miles per hour, and mount gradients of 1 in 6. Messrs. Hewetsons have also on view a large Benz brake capable of accommodating ten persons. The mechanism of this car is on the same lines as the other Benz vehicles, the counter-shaft being belt driven, with three forward speeds and one backward motion. The motor of this vehicle is a double-cylinder one, capable of working up to 8 h.p.

As usual the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, London, have a large and interesting exhibit. Dealing first with motor-tricycles, two types are shown—the Autocycle (a German-made machine), and the French-made Barrière. In addition to the ordinary tricycle, a new form of the latter is shown, a motor-sociable-tricycle, arranged to seat two riders side by side. Trailers for motor-tricycles are shown in a great variety of forms. Coming now to petroleum-spirit motor-cars, the first to be noticed is the "Orient Express," which is made in three forms—the Duc, the Victoria, and the Vis-à-vis, the two first-named seating three and the latter four persons. The "Duc," which was illustrated in our issue of April 21st last, to which we refer our readers for further particulars, is fitted with a 4-h.p. motor. The ignition is magneto-electrical, the cylinders are water-cooled, and the transmission is by means of belts with jockey tighteners. The "Orient Express" cars, which are of German construction, are exceedingly elegant in design, and by reason of their relatively low cost should soon become very popular. Several of the well-known Mors four-seated vehicles are shown, as also one of the new Mors two-seated 4-h.p. "Ducs," illustrated and described in our issue of March 10th last. One of the novelties on the stand is the Kühlstein-Vollmer petroleum-spirit motor-cab (Fig. 10), the feature being that the whole of the motor and transmission gear is mounted

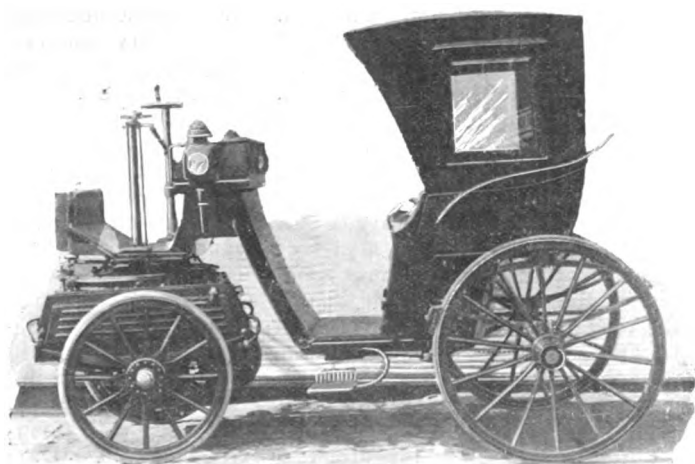


FIG. 10.—THE KÜHLSTEIN-VOLLMER MOTOR-TRACTOR.

on the fore carriage. In this case the tractor has been fitted to a carriage of the hansom type, but it may be adapted to any car or van existing, and thus affords an opportunity to owners of great numbers of delivery vans and the like to

have their carriages changed into motor-cars without a great outlay. The motor is a double-cylindered one, and develops up to 6 h.p. The transmission is effected by belts, and the two speeds are applied by jockey pulleys. The ignition is electrical. The front wheels being not only steering but at the same time motive wheels, a great feature of this car becomes the turntable, which is claimed to greatly increase the manœuvring capabilities of the car. The car has been built in Berlin, the system having been used for some time on vehicles employed by the German Post Office for delivering and collecting mails. We are informed by the Automobile Association that when attached to a delivery van this tractor has hauled a load of one ton on ordinary roads at a fair speed with perfect ease.

Other exhibits comprise the "Silent" car, made by Messrs. Gobron & Brillié, of Paris. It is claimed that these are the first cars driven by a petrol motor which are absolutely free from vibration. We gave a brief description of this interesting vehicle in our issue of the 23rd ult., but it comprises so many novel features as regards both the motor and the transmission gear that we propose to refer to it again at greater length in a later issue.

Electrical vehicles are represented by the Elieson "Swan" electric dog-cart. The motor is suspended underneath the car from a tubular frame. A chain is used to transmit the motion of the motor to the driving-wheels of the car. This chain gears with the teeth of a sprocket wheel on the motor spindle, but one of the rivets in every third link of the chain is substituted by a pin, which stands out about an inch on either side of the chain. Round the periphery of the driving pulleys (fixed on each hind wheel of the car) two bands of leather are fastened. These bands are placed the width of the chain apart, and the chain runs these two bands, while the pins grip on the leather. By this arrangement of chain-belt gearing differential gear is dispensed with, so reducing the number of working parts to a minimum. There are five fixed grades of speed, but any desired speed may be obtained. The vehicle—a dog-cart—will seat two persons, with a supplementary seat for a third passenger. The electrical energy is provided by a battery of Crowds accumulators.

In addition to vehicles, the Automobile Association display a large range of motor-car and cycle accessories, including magneto-electric ignition devices, carburettors, batteries, etc. They have also taken up the agency for the Dorey petroleum-spirit motor (Fig. 11). This is being made in three different sizes of 2, 3½, and 5 h.p. The 2-h.p. motor has been specially designed for small cars weighing 3 to 4 cwt. and seating two persons. The bore is 3½ in., the stroke 5½ in., and the number of revolutions 700 per minute. The ignition is by an electric spark, while for cooling purposes the cylinder is provided with radial discs. In respect of the 5-h.p. motor, this comprises two cylinders side by side, the two cranks being set at an angle of 180 degrees. The cooling is effected by water-jackets, and the ignition by electricity or tube as desired. The top of the motor is easily opened for the examination of the working parts.

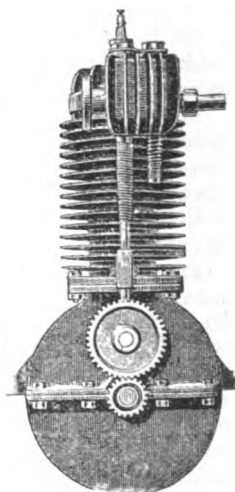


FIG. 11.—GENERAL VIEW OF DOREY MOTOR.

Messrs. Allard & Co., Ltd., Earlsdon Works, Coventry have on view three motor-tricycles. The motor is of the De Dion type, and is located at the rear as usual. The cylinder has a 3 in. bore by 3½ in. stroke, and is claimed to develop up to 2 h.p. Cooling of the cylinder is effected by radial discs, while the ignition is electrical, or by means of a lamp as desired. A feature of these machines is that the whole of the parts, including the motor, are of the firm's own construction.

A novelty to this country is to be found in the "Victoria Combination" two-seated car exhibited, through Mr. Dick Farman, by the Société Parisienne of Paris. The feature of the car, which has attracted considerable attention during the week, is that the whole of the motor and transmission gear is mounted on the front axle, the front wheels being thus both the drivers and the steerers. The motor is a De Dion single-cylinder one of  $1\frac{1}{2}$  h.p., the ignition electrical, and the cylinder cooling by means of radial discs, the position of the motor being such that cool air is free to circulate around it. A two-speed gear of the Didier type, illustrated in our issue of March 24th last, is provided, by means of which a maximum speed of twenty-two miles per hour can be obtained, or the motor cut out entirely from the transmission gear. The carburettor is of the well-known Longuemare type. Steering is effected by means of a long bar, on which all the control handles are mounted. The car, which is neatly finished, and of attractive design, can, it is claimed, mount gradients of six or seven per cent. The wheels are of the suspension type, with pneumatic tires. Shoe brakes acting on the rear wheels and controlled by a foot pedal are provided. Altogether the car is worthy of notice as showing what can be done in the way of light cars, and as its price is relatively low we may bespeak for it a large degree of popularity in this country as well as in France.

The London Autocar Co., Ltd., 182 Gray's Inn Road, London, W.C., show one or two motor-tricycles of both the De Dion and Beeston Co.'s make, as also a Coventry-built motor-quadracycle for two persons. They also display motor-car and tricycle accessories and an example of the new Accles-Turrell petroleum-spirit motor of  $1\frac{1}{2}$  h.p., one of the features of which are the radiating fins. These consist of thin steel discs, much more numerous and larger than is usually employed. The cylinder barrel and combustion chamber are also formed in one piece, so avoiding a top joint. We may add that this concern are the agents in London for the Hurler cars built by Messrs. Marshall & Co. of Manchester.

Mr. C. T. Crowden, of the Motor Works, Leamington, exhibits two vehicles which have already been illustrated and described in this Journal. The first is a four-wheel dog-cart, propelled by a petroleum-spirit motor, an illustration of which was given in our issue of May 5th last. It is therefore only necessary on the present occasion to briefly mention the details of the car, referring our readers for further particulars to the issue above mentioned. The vehicle has seating accommodation for six persons when carrying a full load, four persons facing the direction of progression and two facing towards the rear. The whole of the controlling and steering apparatus is placed on the right hand of the driver's seat. The motor is of 10 h.p. effective, and is of the twin-cylinder horizontal type. The cylinders are not provided with water-cooling chambers, but the whole of their length is inserted through a large wrought copper tank in such a way that the cylinders are closely in contact with the metal of the tank, and consequently completely surrounded by an envelope of water of considerable depth. The motor is carried at the rear of the vehicle, well off the ground, and above the main frame. The fly-wheel is central with the centre of the car, and rotates in the same direction as the vehicle travels. The engine is so constructed that, at the desire of the driver, either cylinder can be shut out of action, it being claimed that one cylinder furnishes sufficient power to propel the vehicle over fair roads at ordinary speeds. Three forward speeds and one reverse motion are provided, the power from the motor-shaft being transmitted to the counter-shaft by belts which, normally running slack, are tightened by jockey pulleys. From the counter-shaft to the rear road wheels chain gearing transmits the power. Electric ignition is employed, current being supplied to the coil from secondary batteries. The wheels of the car are of peculiar construction. They are of the gun-carriage type, the spokes being double dished. Increased stability is ensured by the fact that in wheels of this type double the width of stock is

obtained. The chain wheels, or sprockets, instead of being bolted to the spokes of the road wheel as is generally the case, are bolted to a flange provided on the wheel hub. By this means it is assured that the hub and chain will always run true with the axle, which is not the case when the sprockets are bolted to the spokes. It is also possible to employ a gear case in this arrangement, whereas this is impossible when the sprockets are bolted to the spokes. The axle boxes are made similarly to the long bolted mail-coach pattern, with a plate at the back of the collar, so that it is impossible for the wheels to come away from the axles unless they are absolutely broken up. The steering mechanism also presents some new features, details of which will be found in our issue of May 5th last. A powerful foot brake acting on the balance wheel shaft is fitted, also a lever brake acting on the two rear wheels; in addition to which the electric current can be turned off and the cylinders made to act as an emergency brake.

Mr. Crowden's other exhibit is the steam brake illustrated in our last issue. The car has been designed and made entirely for experimental purposes, to ascertain what advantages a steam vehicle possesses over a petrol one, and also the h.p. most suitable for the work. The carriage at present is not fitted with change speed gear, but, having a vertical compound engine, it will travel at a very high speed on the level, up inclines and steepish hills. The frame of the car is entirely of steel, with laminated steel springs, and long bolted mail-pattern axles, Crowden's wheels with oak spokes, ash felloes, and rubber tires. The boiler is of the multitubular type, constructed to burn coke or oil, and fitted with improved automatic stoking arrangement. The engine is of the compound type, fitted with link motion and an intercepting valve by which high pressure steam can be used in the low pressure cylinder for starting and for climbing steep hills. The car is fitted with a foot brake acting on a drum on the differential gear shaft, and a screw lever brake acting on both hind wheels, and both of these can be actuated from the driver's seat. The counter-shaft is driven by spur wheels, while chain gearing connects the counter-shaft with the rear road wheels. A number of axles, wheels, etc., made in accordance with his designs, are also displayed by Mr. Crowden, the whole exhibit being of an interesting character.

Messrs. Mulliner, of Northampton and 28 Brook Street, London, W., display a little Benz car, the carriage-builder's portion of which is the product of their works. This firm is making a speciality of, and has earned a high reputation for, this class of work, several specimens of their carriage bodies being visible in other parts of the Exhibition.

The Dunlop Pneumatic Tyre Co., Ltd., of London and Coventry, are present with an exhibit of their well-known wired-on pneumatic tires fitted on Dunlop-Welch rims. These are shown in several sizes, ranging from 2 in. to 3 in., suitable for motor-tricycles, light voitures, and heavy motor-cars.

Messrs. Simms & Co., Amberley House, 12 Norfolk Street, London, W.C., exhibit their special compound pneumatic tire for motor-vehicles, which is claimed to comprise several points of the solid, cushion, and pneumatic tire combined in one new tire. The tire has practically (1) a solid, interchangeable rubber-tread held by two endless electrically-welded steel wires on to the semi-circular (2) pneumatic tire and cover (inner tube), held in place by a special fastening to the side-flanges of the (3) steel rim (semi-circular), forming an air cushion. The rim is built up of three parts, so that the two side-rims may be cheaply and easily replaced without in any way interfering with the spoking of the wheel. The rim is so constructed as to provide surfaces for a rim brake.

The Pendleton Rubber Co., Ltd., of 63 Frederick Street, Edinburgh, exhibit a new solid rubber tire for motor vehicles, known as the "Woodlock." The steel rim is of C section, the rubber tire being held therein by special springs introduced at short intervals. No compression whatever is put on the rubber, and its whole resiliency is, it is claimed, retained, the attachment depending entirely upon the steel

springs. These are fixed in the rim by a simple appliance, and once there it is impossible for them to become detached accidentally. These springs are also claimed to entirely prevent slipping or "creeping" in the rim. The arrangement admits of the rubber being packed on the rim, with the result that any accidental cuts on the surface of the tire close automatically, the makers stating that it is possible to replace even the smallest section of the tire that may have become injured or worn.

Glew's Patent Steel-Shielded Rubber Tyre Syndicate, Ltd., 17 Queen Victoria Street, London, E.C., exhibit their improved cushion tire, which is claimed to combine the ease and comfort of the solid rubber tire without the liability of cutting and wearing out quickly. The felloe of the wheel is of steel, of channel section, and in the groove is a continuous rubber cushion, the rubber being covered and protected by a steel band. This, it is claimed, allows a more virgin material to be used than usual, while the running is smoother and vibration less than in the case of naked rubber tires. The tires can, it is stated, be easily removed and replaced by inexperienced hands in a short space of time. We understand that the tire has been in use on hansom cabs and omnibuses, and has given satisfactory results.

The leading feature of the exhibit of Messrs. J. W. and T. Connolly, of 65 Wharfedale Road, King's Cross Road, London, N., is, of course, the "Ideal" solid rubber tire for motor-cars. These tires are so well known in the motor-car world as to need but little reference at this time. It may be mentioned, however, that the tires are held on the rim by means of two electrically-welded wires in such a way that it is claimed that the tires cannot come off the rims or creep. The tires are now being made in sizes up to 2½ in., suitable for cars of a total load, with passengers, of two tons. We understand that the firm are now arranging to make a 3-in. tire, intended for heavier cars. Samples of the tires are shown fitted to both wood and steel wire-spoked wheels. Messrs. Connolly are also showing the Grant roller-bearing for motor-vehicles, which is being largely used in America. The rollers are conical and are carried on rivets mounted in a cage, each roller being held separately from the other; they work on a conical sleeve fitting over the axle end. This conical sleeve forms one of the special features of the bearing. The sleeve is not pinned or keyed to the spindle, but is free to turn. In the ordinary use of the vehicle, an occasional unusual jolt or jar will cause this cone to turn perhaps half way around, bringing another part of it to the bearing point, and so distributing the necessary wear upon it all over its surface, instead of upon a single point as is the case when the cone is keyed to the spindle. Thus it is possible to easily take up the wear, or end play, on the bearing. Another exhibit at this stand is Potter's roller brake for rubber tires. In this, the brake shoe, instead of bearing direct on the tires, carries two steel rollers, free to rotate, the action of the brake thus being not so violent, so preventing damage to the tire.

The Anglo-American Oil Co., Ltd., of 22 Billiter Street, London, E.C., it is almost needless to remark, are present with an exhibit of their well-known petrol for petroleum-spirit motors, together with a number of petrol storage tanks, barrels, etc. The Company has lately made a new departure in putting up their spirit in small-sized and air-tight cans, which greatly simplifies the question of storage, and also enables owners of motor-cars to conveniently carry a supply of spirit whilst on tour.

The Mossberg Roller Bearings, Ltd., of 6 Victoria Street, Westminster, and Birmingham, have an interesting display of their bearings, for which many claims are made in the way of reducing friction, etc. The rollers are made of hardened and ground tool-steel, and, while held in a bronze cage, are free to rotate on a tool-steel shell, generally fitted round the shaft or axle. A number of applications of the roller bearings are shown, including one to a brougham axle and wheels.

Messrs. Brampton Bros., Ltd., of Oliver Street Works, Birmingham, make a small display of their now largely-used

motor-car driving chains and chain wheels. The chains are made in both solid block and roller pattern, in pitches from 1 in. up to 3½ in. pitch. The products of this firm in the way of driving chains and chain wheels are too well known in the automobile world to require any lengthy description at this time. They are also exhibiting their "Multispiral" saddle, specially arranged for use on motor-tricycles. The claims made for this saddle are that there is no hard peak, no hard back plate, and that while lighter than usual it gives a comfortable seat.

Messrs. C. W. Burton, Griffiths & Co., of Ludgate Square, Ludgate Hill, London, E.C., are the only firm showing machine tools, their exhibit comprising a very large range of tools and machinery used in the manufacture of motors and motor-cars, such as Garvin milling machines, Cincinnati screw-cutting lathes, etc.

Messrs. Crossley Brothers, Ltd., of Openshaw, Manchester, show in motion one of their 8-h.p. high-speed gas engines capable of working up to 24½ effective h.p. The engine is fitted with an extra heavy fly-wheel, and is claimed to be specially suitable for electric lighting work. The firm also display a couple of their oil engines—one of 7 h.p., working up to 11 effective h.p., and a small one of the same type, working up to 3 h.p. The consumption of oil in these motors is stated to be only .8 pint per b.h.p. per hour.

Messrs. Salsbury & Sons, Long Acre, London, W.C. in addition to showing their acetylene candles, make a large display of the well-known and largely-used Dietz tubular petroleum lamps and head-lights for motor-vehicles. The lamps are of 25 candle-power throwing a light a considerable distance ahead of the car.

Late on Wednesday evening a neat little car was placed on exhibition by Higg's "Champion" Car Syndicate, of 17 Ironmonger Lane, London, E.C. The vehicle takes the form of a small four-seated dog-cart. It is propelled by means of a 1½-h.p. De Dion motor. There are several novel features about the car, especially in the steering and starting gear, to which we intend to refer at greater length in our next issue. Pressure on our space also prevents us from dealing this week with quite a number of the exhibits, but these will be dealt with in due course next week.

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Boston, U.S.A., intends transporting its street-cleaning machinery with automobiles in place of horses.

LA SOCIÉTÉ DES SPORTS DE SAINT ETIENNE is organizing a series of three races for Sunday next, the 9th inst.—one for motor-tricycles, one for motor-tricycles with trailers, and one for motor-voitures.

A COMPANY has just been formed at Jersey City, N.J., U.S.A., with the title "Riker Electric Vehicle Co.," with a capital of £1,400,000. The incorporators are Andrew L. Riker, William G. Meyer, and James C. Young.

WE learn from a Mexican correspondent that an application has been made for permission to run a service of motor-omnibuses in the city of Mexico. No information is so far available as to the type of vehicle to be adopted.

THE municipal authorities of Boston, U.S.A., are wrestling with an ordinance to compel the licensing of all motor-vehicles. The ordinance introduced reads as follows: "Nor shall any owner or driver of any vehicle drive it or permit it to be driven on the streets of Boston by power of steam, gas, gasoline, naphtha, compressed air, electricity or combination of any or all without a permit from the Board of Aldermen." There is no shadow, states the *Horseless Age* of New York, of justification for the licensing of motor-vehicles, unless all vehicles are to be licensed. The motor-vehicle is not a road destroyer like the horse, but a road maker; it is safer and more manageable than a horse; it will relieve the congestion of the streets and facilitate travel and traffic in general. How, then, can it rightly be subject to restrictions from which horse vehicles are exempt?



## THE GAILLARDET MOTOR-TRICYCLE.

WE are now able to give in Fig. 1 an illustration of the Gaillardet petroleum spirit motor as fitted to a motor-tricycle, about which so much has recently been heard. The motor, which is made by La Société

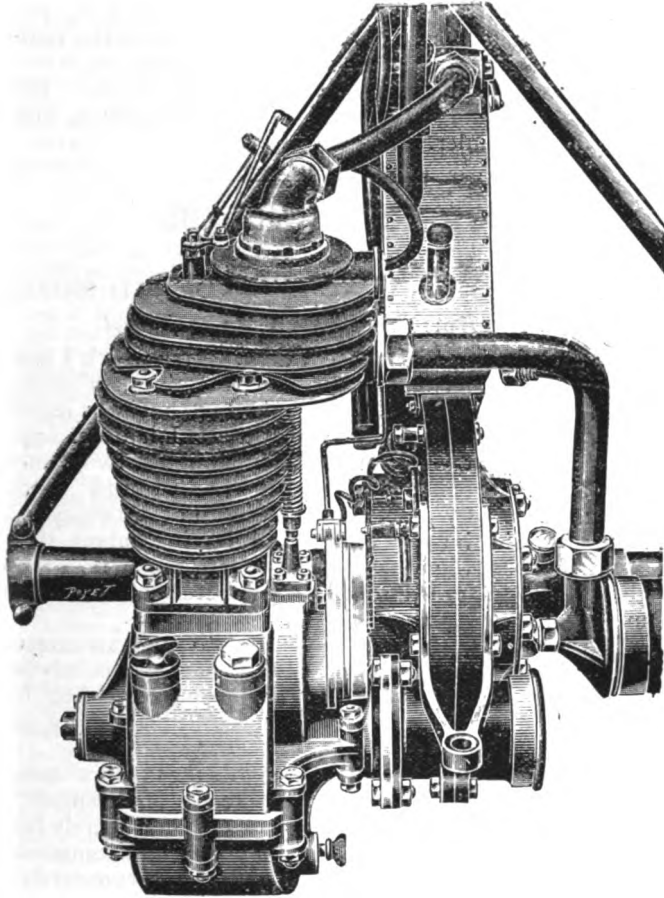


FIG. 1.—THE GAILLARDET PETROLEUM MOTOR.

Française d'Automobiles, Quai National, Puteaux, France, is claimed to be capable of working up to  $2\frac{3}{4}$  i.h.p. at

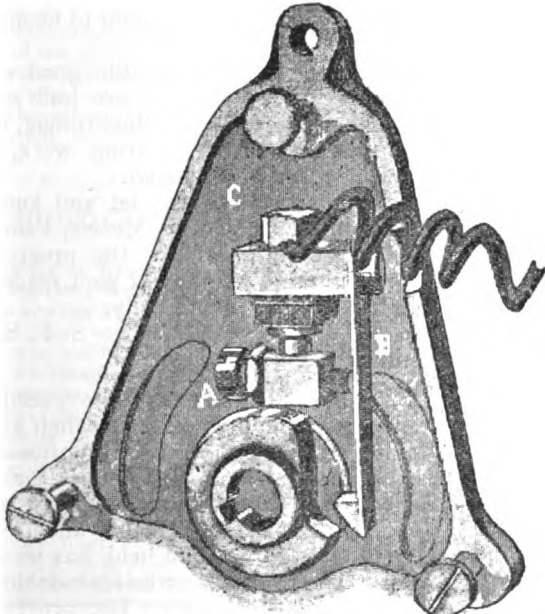


FIG. 2.—THE GAILLARDET IGNITION APPARATUS.

from 1,200 to 1,800 revolutions per minute. A striking feature of the motor are the cooling discs, which are not only

larger than usual but extend to the top of the explosion chamber. The inlet and exhaust valves are so arranged that by removing a couple of bolts they can be instantly taken out for cleaning purposes, etc. The working parts, including the exhaust-valve operating gear, are all contained in an aluminium case. The ignition is electrical, an illustration of the Tremblet arrangement being given in Fig. 2. The carburettor consists of a brass tank capable of holding about 3 litres of petrol; it is filled by means of a pipe at the side, so placed as to indicate the maximum level. An air inlet at the top is so devised that its inner orifice can be adjusted to within a few centimetres of the level of the spirit, being lowered and raised as required. Another valve at the top regulates both the admission of carburetted vapour and the air, in one of its extreme positions shutting off the vapour entirely and admitting only air, and in the other extreme position shutting off the air entirely and admitting only vapour. A further valve regulates the supply of explosive mixture to the explosion chamber of the indicator. The mixture is given a slight preliminary heating by means of the exhaust gases, a part of which are conveyed by a pipe through the bottom of the carburettor.

THE Leith Cycling Club has had a successful moonlight run, a motor-car with a party of six leading the way.

REFERRING to the Motor-Car Exhibition, the *Daily Chronicle* mentions the facilities for hiring vehicles for drives as a popular and special feature.

THE gentleman on the *Financial News*, in alluding to the Exhibition now in progress, heads his article "More Motor Madness," with the usual smell, coughing, and spluttering.

THE NATIONAL WHEEL AND TRACTION Co. is the name of a company which has just been formed in New York to manufacture motor-vehicles, etc. The capital is 16,000 dols.

ALTHOUGH the motor-car has not appeared in any of the recent bye-elections it has lately been seen at an election at Leamington, the occasion being a school board election contest.

THERE are about a dozen Pennington cars on view at the Exhibition, and much interest has been centred in their movements, but considerable disappointment has been expressed at the absence of the Star Motor Co.'s vehicles from the display.

MR. AND MRS. JOHN DAVIS have started from the office of the *New York Herald* to go to San Francisco on a motor-car. In the course of the 3,700-miles run they will call at the offices of many leading newspapers, and report upon the roads in a way that they hope will be serviceable to future motorists "going that way."

THE City Motor-Car and Carriage Syndicate, Limited, is the name of a company which has been registered, with a capital of £10,000, to carry on the business of motor-car, carriage, and cycle manufacturers, steam, oil, gas, and electrical engineers, etc. The registered office is at 31 Westgate Road, Newcastle-on-Tyne.

FROM a pamphlet explanatory of the patent agency of Messrs. Phillips, Ormonde & Co., 533 Collins Street, Melbourne, we learn that to "our Mr. Phillips belongs the proud privilege of being the first patent agent in Australia to make use of a motor-car"—which indicates that the spirit of enterprise is with his firm.

ON Saturday a motor-cycle race meeting was held at the Crystal Palace under the rules of the Motor-Car Club. Mr. S. F. Edge won all events. He did the one mile handicap in 1 m. 50 s., the five mile race in 8 m. 55½ s., the two mile handicap in 3 m. 28½ s., and won the Crystal Palace Brassard 100-guinea cup by motoring 34 miles 540 yards in the hour. His final success was with Mr. C. Jarrott, when they did a mile on a motor-tandem bicycle in 1 m. 43½ s.



## MOTOR-CARS ON THE CONTINENT.

### A Russian Motor-Tricycle Race.

THE annual cycle race between Moscow and St. Petersburg is this year being extended to include motor-cycles. The journey was to be made in two stages, commencing midnight, July 2nd, the first stage being from Moscow to Volotchok, the second from the latter town to Tsarkoie-Selo (St. Petersburg). The result of the race has not yet reached us.

### Motor Road Services in Spain.

WE learn from a Spanish correspondent that a service of motor-vehicles has just been started between Rosas and Figueras, a distance of about 18 kilometres. The vehicles employed are of 8 h.p. and have seating accommodation for nine passengers.

### A Paris-St. Malo Race.

THE Association Velocipedique d'Amateurs, of Paris, is organizing a race between that city and St. Malo for the 30th inst. The distance is 365 kilometres, the race being divided into the following three categories: (1) vehicles with motors of 5 h.p. and over, (2) vehicles with motors of less than 5 h.p., (3) pedal-aided motor-tricycles.

### The Paris-Brest Motor-Tricycle Record

THE recent record for motor-tricycles between Paris, Brest and back established the other week by the old racing cyclist Terront has just been broken by Corre, who covered the 1,200 kilometres in 33 h. 3 m. 46 s. as against Terront's 40 h. 26 m. 4 s.

### A Projected Automobile Fete at Pau.

A PROPOSAL to hold an automobile fête extending over a week in February next is under discussion at Pau. In connection with the fête there will probably be a race from Pau to Bayonne.

### A New German Motor-Car Company.

ONE of the latest concerns in Germany to enter the motor-car industry is the Motorfahrzeug Gesellschaft, 44a Kaiser-Wilhelmstrasse, Dusseldorf. From the particulars sent us this company appears to be not only constructing motor-bicycles of the Werner type and motor-tricycles on the De Dion system, but is also making a light two or three-seated petroleum-spirit motor-carriage very much on the lines of that known in France and in this country as the Decauville. The motor is a 2-cylinder one of 3 h.p. located in the rear portion of the car; radial discs to the cylinders provide for the cooling of the same, while the ignition is electrical. Two speeds are provided, the power being transmitted to the motor shaft to the intermediary shaft through spur gear wheels and from the intermediary to the rear road-wheel axle through bevel wheels. The frame is built of steel tubing: the road wheels are all 23 in. in diameter; they are of the suspension type with pneumatic tires. Fitted with a hood, the little car has a very neat and elegant appearance.

### Postal Motor-Vans in Austria.

THE Austrian Ministry of Commerce is reported to be contemplating the introduction of motor-cars for the conveyance of mail bags to and from the railway stations, as well as for the delivery of the parcel post and the collection of letters from the pillar-boxes.

### The Belgian Automobile Races at Spa.

AT the Belgian Automobile Club race of 120 miles on Tuesday over a very hilly course, through the Ardennes, beginning and ending at Spa, M.M. Charron and De Knyff used for the first time new 16-h.p. Panhard cars specially adapted for a hilly course, the lowest speed being 10 and the highest 40 miles per hour. It was raining hard at the start. M. De Knyff won in 4 h. 37 m. M. Charron could not use his third speed for the latter portion of his time, which was 5 h. 31 m. M. Pinson, on an 8-h.p. Panhard, was third, his time being 5 h. 51 m. Other carriages used were an Amedée Bollée, a Bolyde, and a Belgian-built Daimler.

## CORRESPONDENCE.

### THE PENNINGTON TWO-CYLINDERED MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the recent controversy which I had in your paper with Messrs. Pennington & Baines, or perhaps I should rather say Mr. E. J. Pennington, business recently called me to Manchester, and whilst there I had an opportunity of not only trying the latest Pennington two-cylinder car, but also their cheap single-cylinder, and I must say that they seem to be very practical vehicles, and the two-cylinder one does work in the way of speed and hill-climbing that is only equalled by the very expensive cars made in France. The simplicity in regard to the manufacture and running of them is something marvellous.

This did not impress me, however, to such an extent as when I was down at some cycle works where some of these were being manufactured. They were being turned out by a cycle manufacturer, and, he told me, with his ordinary cycle tools.

I myself saw a good number of these cars coming through the works and several just ready for despatch, so that there is no doubt Pennington cars are not merely being advertised, as I rather inferred in my previous communications, but are now being manufactured and sold commercially.

I was myself so impressed that I placed an order for a two-cylinder car, and am quite prepared to wait my turn for this being delivered, as I can see that it is something worth waiting for; and now that they are coming through good responsible works regularly, it is only a matter of undoubtedly a few weeks for a very large number of them to be launched all over the country.

It seems to me that the keystone to the good running and simplicity of these cars is that they are built on cycle lines, with ball bearings, and steel, and steel tubing, etc., in the place of heavy carriage or engineering work, where ordinary solid steel or cast iron is employed.

I thought it only common fairness to let you know this after my recent letters on the subject of Messrs. Pennington and Baines' car, and I have no doubt the progress that is being made will be of interest to many of your readers.

London, W.C.,

July 3rd, 1899.

Yours truly,

S. F. EDGE.

MOTOR RACES AT NEW BRIGHTON.—The executive of the New Brighton Tower Grounds are turning their attention to motor-cycles, for to-morrow a grand international motor cycling tournament is to be held. The entries include the names of the celebrated French motorists, Béconnais (the winner of the "Criterium de Motor-Cycles," and Deemster, who, since motor-cycle races have been held, has won nearly a score of first prizes. The English entries include the names of Messrs. S. F. Edge and C. Jarrott. The programme of events will be:—1, Promenade of competitors; 2, one mile open; 3, ten miles record by Pennington torpedo car; 4, five miles open; 5, attempt on five miles tricycle record.

## HOW TO KEEP COOL—BY MOTOR-CAR.



WHILE, during the recent spell of hot weather, a perspiring world was wondering how to keep cool, the solution came to a representative of the *Pall Mall Gazette*, who thus describes the process: It is simplicity itself. All you have to do is to get a motor-car and go careering about the country. The gentle gliding through the air produces an ineffable content, and one is fanned into a state of delightful coolness. The discovery, like all great ones, came about in a simple manner. I had chance to remark that I had never been on a motor-car. "Then come for a ride on mine," said a friend, and I, without knowing all that depended on my answer, boldly said yes.

I almost repented when I saw the machine, panting and puffing, quivering almost with the excitement of a greyhound in the leash, anxious to be off. But, fortunately for a long-suffering mankind, I mounted beside my host and we started. It follows as a matter of course that when you want to show off the good points of anything, a horse, a dog, or a piece of machinery, something is bound to go wrong. And so it was in this case. Only "a little stomach-ache," however, as the owner humorously put it. A turn or two of a screw soon made this right and we began to thread the maze of London traffic on the way to the country. The car, like the majority of those at present in use, was driven by petrol, the motive power being obtained from the ignition of the mixture formed by the gas from the oil on coming in contact with the air. I am bound to say that it smells unpleasantly at first, but when any rate of speed is obtained this all disappears, and nothing but agreeable sensations are felt. That is, if you are on a good road, and of these, I'm sorry to say, we soon had striking proof there are very few in London. Some of the pavements, in fact, gave a kind of combined hunting and driving exercise.

The one thing in particular that struck me as we twisted in and out among cabs, omnibuses, and the thousand-and-one vehicles one sees in the streets was the marvellous control that the driver had of his machine. With his hand on the steering-bar—very much like the helm of a small yacht—and his feet on two piano-like pedals, it was marvellous how he manipulated the car's career.

"In what distance can you pull up?" I asked. "In the car's own length," was the reply, and the sudden halting of a brougham in front provided me with an excellent sample of the truth of the statement. As we went along my host began to show me how fast the car could go.

"Is there a policeman in sight?" he said, as we approached the open country. "No," I replied, and the next minute we were flying along at the speed of an express train—much faster than you travel in those open-air carriages that they have on the railway between Dublin and Bray.

"Ware hawk!" I cried, and as we passed the man in blue he looked astonished to see that what he would have sworn was going twenty-five miles an hour was really not going much more than six. Out of his sight off we were again, the rush of air producing a most exhilarating effect; cyclists, traps, we simply walked past, and I grew enthusiastic. My host expects that electricity will be the motive power when ordinary locomotion is conducted in this way. That has no smell; there is none of the miniature earthquake business prior to a start. The machine, which it is safe to say is the forerunner of the car of the future, is the invention of an English firm, Messrs. Leitner—although the name sounds rather German.

I was invited by one of the partners to try it, and although it may seem ungrateful, the difference between it and the oil-driven car was really wonderful. The ease with which it could, without any fuss, back, turn, and stop—thanks to a marvellous electrical brake—and the speed at which it could travel were simply a revelation. The motive power is stored, and the small quantity that can be carried is at present the only drawback of the electric car. But when their use is more universal and storage stations are fixed up and down the country the difficulty will disappear. I went out a sceptic and returned a convert. I easily foresee the time when all our travelling will be done by motor-car; there will be no more stuffy railway carriages, and, above all, we shall be able to keep cool.

## MOTOR-CAR SERVICES AT NEWCASTLE.



THE motor-car has invaded Newcastle, and last week, while the races and the temperance festival were in full swing, a car ran between the Grey Monument and the Town Moor, making three or four journeys each way within the hour, and being filled each time. This vehicle is of the wagonette type, holding eight passengers, who were carried at a twopenny fare, and, for speed and comfort, is far and away ahead of any other vehicle at present in the streets of Tyneside. After the extraordinary traffic northwards ceased with the races and the festival, the car—which is the property of the Tyne Motor-Car Company—has been carrying passengers between the Monument and the end of Jesmond Road, and upon that route has been entirely successful. During the busier parts of the day it has always as many passengers as it will accommodate, and it has always a "paying cargo"—to apply a nautical expression. With the modern motor there is no more danger, either to pedestrians or to passengers, than there is with a cab or a tram-car. It is under thorough control as to steering, and its powerful brake enables the driver to stop it in a moment. Given smooth roads, such as they are not in Newcastle, there is nothing in existence that could beat the motor-car in speed or comfort. The motor-car now running in Newcastle is the first that has plied there for traffic, but the service of motor-cars will be extended immediately. The success of a similar venture

in Sunderland suggested the introduction of this car by the Tyne Motor-Car Company at Newcastle. The other local company, to whose energy was due the series of trials that were held in Newcastle some weeks ago, has been registered, and has several cars already in Newcastle. These will shortly be put upon the streets. It is called the City Motor-Car and Carriage Syndicate, Limited, with a capital of £10,000. The signatories to the memorandum and articles of association are County Alderman John Dent, J.P., Mr. F. S. Strickland, Mr. W. S. Vaughan, Mr. Frederico George Lundy, Councillor Whitley, Councillor William Spicer, J.P., Councillor J. J. Forster, and Councillor Ralph Carr, all being, with the exception of Councillor Whitley, residents of Newcastle. Mr. Ralph Carr is the general superintendent. Mr. Rowland Barnett, who is the pioneer of the motor-car industry in Newcastle, has been appointed consulting engineer to the syndicate, of which Mr. F. G. Lundy is solicitor and secretary. This Company will put five cars upon the streets immediately, covering first the Jesmond route. Subsequently, all the tramway routes as proposed in the Corporation's Bill will be covered. Even this does not exhaust the interest in motor-cars at Newcastle, for rumours as to the formation of yet another company are afloat.

## MOTOR-CAR VERSUS HORSE.



On Friday last, at Westerham, Mr. C. W. Brown and Mr. F. F. Maclean were summoned for driving a light locomotive over twelve miles an hour at Riverhead, on May 27th. Mr. A. Y. Hyland appeared for the complainant, Mr. Walter Brydan, and explained that defendants were driving the locomotive regardless of the bye-laws laid down by the Local Government Board, and were liable to conviction under article four of those bye-laws. Mr. O. Holmes Beatty defended. Mr. Brydan stated that he was riding horseback with Mr. Alexander. Defendants came along in a motor-car. He put up his hand for them to stop, but they took no notice. His horse was frightened and bolted. He afterwards followed defendants, who refused to stop, or to give their names when ultimately brought to a standstill. They called him a blackguard, and threatened to run into him. They were travelling from fifteen to sixteen miles an hour. By Mr. Beatty: He held up his hand for defendants to stop. The alarm was not sounded until then. He did not know who was driving the car. The Chairman said he did not think prosecutor could be expected to know who was driving while he was engaged with a restive horse. Mr. Alexander, of Kemsing, gave corroborative evidence, and said when he called upon defendants to stop they refused, and looked back and laughed at him. "Do you know much about a motor-car?" asked Mr. Beatty.—"No, thank goodness, I don't," witness replied. "Who was driving?"—"I don't know how you drive the thing. It may have taken two to go at the pace it did." Miss Dunster, a lady from Knockholt, said she was driving from Westerham towards Sevenoaks. When she turned on to the main road she saw a man on horseback holding up his hand. His horse was very frightened at the motor, which was going at a tremendous pace. All defendants said to the rider was "You ought to be able to manage your horse better." Mr. Beatty contended that only the driver could be summoned. It was admitted that Mr. Brown was the driver, therefore he asked that the case against Mr. Maclean should be dismissed. The former, a journalist well known in the cycling world and an authority on motor-cars, was experimenting with the machine at the time. The low gear was on, and it was impossible to travel with it at a greater pace than nine miles an hour. Motor-cars, he said, were going through the times experienced by cyclists in the early stages. It was unreasonable to pull up for everyone that called to them. Mr. Brown then gave evidence. He denied that he heard complainant call to him until after the car had passed. Complainant said something as they passed, but he could not hear what was said. By Mr. Hyland: The maximum speed at high gear was from sixteen to eighteen miles. Mr. Maclean, of Putney, said he did not know much about horses, but certainly the horses did not appear frightened at the car. One horse was dancing in front of the car and another at the side, whilst going up the hill. Mr. Maclean was acquitted. Mr. Brown was fined £5, and 10s. costs.

## "ALL A POLICE MISTAKE."



THE action of the House of Commons police in refusing, on Monday night, to admit the automobile belonging to the Hon. John Scott Montagu, M.P., to Palace Yard was, it turns out, one of the very rare errors on the part of the custodians of Parliament.

On Tuesday evening, the Hon. J. S. Scott Montagu, M.P., accompanied by Capt. H. R. Langrishe, was allowed without let or hindrance to drive his automobile past the police on duty.

To a representative of the *Daily Mail* Mr. Montagu said: "The sergeant at the gate told me he had received no orders to prevent my entry, and so I drove in. After the occurrence of Monday I saw the Sergeant-at-Arms, who told me he had given no instructions with respect to petrol-driven cars as distinguished from electrical vehicles.

"Inspector Horsley told me that as far as he knew a rule had been made to exclude tradesmen's carts driven by any other means than that of electricity, as on one occasion, some years ago, one had caused some annoyance. I naturally claimed the privilege as a Member to go to the House exactly as I pleased, and was prepared to carry the matter further, but it was intimated that no further opposition would be offered, and so I just ran in on Tuesday on my way from the Motor-Car Exhibition at the Agricultural Hall to prove this.

"My car is an 11-h.p. English Daimler, and to talk of its being dangerous is ridiculous. It might just as well be said that hansom cabs should be kept out of the yard, for a horse might quite easily run away and cause damage to the railings.

"I'm very pleased that the matter has been settled, as in a few years a very large proportion of the vehicles visiting the House are certain to be automobiles, and therefore it is better to have a distinct understanding to commence with.

"The whole thing is admitted to have been a mistake by the police," was the explanation given at Her Majesty's Office of Works to a *Daily Mail* representative. "In March last an order was issued prohibiting tradesmen's oil motor-vans from entering the yards at the Houses of Parliament, owing to a tradesman's oil motor having flared up in the yard, but the regulation was not intended to apply to M.P.'s or other private automobiles. The police made a mistake in prohibiting Mr. Montagu from entering in his automobile, but the matter has now been explained, and there is no need to make any alteration of the regulations as to horseless vehicles."

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**FOR SALE.**—Mytholm Motor-Car, double cylinder, 3-h.p. petrol motor, three speeds, ball bearings, rubber tires, £110. Photo, three stamps. Also 8-h.p. two-cylinder Mytholm Petrol Motor, complete with tube ignition and carburettor, £55. 3-h.p. two-cylinder Mytholm Petrol Motor, £32.—Brown & Buckton, Hipperholme, Halifax.

**WANTED to Hire,** by a Dental Practitioner in Ireland, a small Motor-Car or Tricycle, suitable for two persons. De Dion preferred.—Apply Box 101, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**MOTOR-CARRIAGES,** deliverable directly, system Panhard, Benz, Peugeot, Mors, Decauville, Cambier, Rochet, Silmeider; tricycles.—Apply to Géo. de la Nézière, 51 rue Vivienne, Paris.

**FOR SALE.**—Beeston Motor-Tricycle, almost new; owner going in for Motor-Car. Will accept £55.—Nesham, 25 Bright Street, Middlesbrough.

**FOR SALE.**—Benz 5-h.p. Dog-Cart, nearly new; written guarantee given as to condition; many improvements added.—Price and full particulars to Box 72, *The Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**BOLLÉE,** in good order, £60; Motor-Tricycle, tube ignition, £50. Both fast machines.—Owner, 83 Cautsfield Street, Liverpool.

**REV. ARUNDELL WHATTON** offers splendid Daimler Marseilles Phaeton, in thorough going order and excellent condition. Luncheon basket, clock, extra screw brake. £290.—16 Montpellier Square, Knightsbridge.

**1899 BEESTON QUADRICYCLE,** for two riders, Dunlop tires, almost new, having been ridden only about 100 miles; good reason for selling; bargain.—Prince, 198 Stretford Road, Manchester.

**FOR SALE AS BARGAINS.**—Two Bollées and three De Dion Tricycles, all new, fast machines. Inspection invited. Platinum Tubes and Accessories always in stock.—Motor Agency Co., Ryley Street, Coventry.

**WANTED TO HIRE.**—Motor-Car. As it is to be used for advertising purposes, a noisy one would suit. Quote terms by the day or week to M. D., c/o Mr. Carter, 161 Strand, W.C.

**FOR SALE.**—International 3-h.p. Benz Dog-cart, spare tank and accumulators, in splendid condition, £130.—M., 48 Thomas Street Limehouse, London, E.

**MOTOR-TRICYCLE.**—Beeston 1½ h.p., tube ignition; almost new, fine running order, £33.—Homan, Claygate, Surrey.

**DECAUVILLE CAR,** nearly new, pneumatic tires, very handsome. To be seen and tried.—Simkiss & Knighton, Engineers, California Works, Derby.

**INTERNATIONAL 3-h.p. CAR,** splendid condition, very little used. Owner going abroad. Real bargain. For full particulars address Box 123, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**FRENCH ENGINEER,** motors and motor-vehicles, desires Partner active or sleeping, to establish works in France and England to construct new type of motor and motor-vehicles; or would collaborate with an existing firm.—Address G. Gautier, 14 Rue du Pont, Suresnes, Paris.

**TO Motor-Omnibus Touring and Hiring Companies.**—Experienced MANAGER (Secretary) Disengaged.—Box 131, *The Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**PLATINUM.**—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797.

**LARGE STOCK** of Motor-Car Tricycle Frames, with all latest improvements; two band brakes, cased-in pattern axle, free chain, hubs and pedals, and all connections ready to attach to motor; electric connection in handle-bar; highly enamelled and plated.—Brown Brothers, Ltd., Great Eastern Street, London, E.C.

**MOTORS ON HIRE.**—Daimlers, Panhards, Benz, New Beestons, etc., in good order, by day, week, or month.—The Yorkshire Motor-Car Co., Ltd., Bradford.

**ELECTRICAL EQUIPMENT FOR MOTORS.**—Improved Dry Cells, Accumulators, Special Transformer Coils, Ignition Plugs, Flexible Wire Connections, etc. General Accessories, wholesale and retail.—J. Burns, 44 Berners Street, London, W.

**AGENCY.**—Royal Lancashire Agricultural Show, Liverpool, August 3rd.—Wanted, Charge of Exhibits; fully experienced; can drive, and would act as agents.—The Syren Motor Co., 101 Smithdown Road, Liverpool.

**WORKING DRAWINGS AND TRACINGS EXECUTED.**—Apply, stating terms and wants, to D. 691, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 19.]

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## COMMENTS

### The Exhibition— a Great Success.

At 10 p.m. to-morrow (Saturday) the doors of the Agricultural Hall will close upon the Motor-Car Exhibition, which for the last fortnight has demonstrated the possibilities of motor-vehicles and evidenced the public interest in improved locomotion. As to the success of the event there has been no doubt. Visitors have come from Scotland and Ireland, as well as the busy centres of Lancashire and Tyneside, Yorkshire, and the Midlands; while prospective promoters of motor-car services in holiday resorts have recognised the value of bringing such a collection of vehicles under one roof. From the exhibitor's point of view everything seems to have given satisfaction, and business has been good. Not only have the public been present, but the endeavours made to secure the attendance of that section interested in automobilism have so far succeeded that exhibitors generally have had a busy time, not only in answering inquiries, but in booking orders and cultivating acquaintances that will be useful in the future. Flattering have been the remarks addressed to the promoters of the Exhibition, and the following letter from Mr. H. Hewetson is selected as typical of the opinions freely expressed:—"Your Exhibition has been a great success. We did fairly well at Richmond, but at the Agricultural Hall we have done far more than we anticipated. One car we could have sold twelve times over, and we must at least have booked and sold for forward delivery forty to fifty Ideal motors, besides a few 8-h.p. dog-carts, and you have completely cleared us of all our stock."

### Juvenile Automobilists.

A NOVEL sight was witnessed at the Exhibition at the Agricultural Hall on Wednesday afternoon, when the Berkeley electric bath chair was driven round the arena for a considerable time by two little children, the eldest of whom was only eight years of age. A better testimony as to the simplicity of the Berkeley vehicle and the ease with which it can be controlled could not be imagined.

### An "Albone" Motor-Car.

IN the course of a chat with Mr. Dan Albone, of Biggleswade, at the Agricultural Hall this week we learned that he is at present engaged on the construction of a new four-seated car in accordance with his own designs. The motor is a 3-h.p. one, of the Benz horizontal type, so arranged that it can be started from the seat. The transmission will be by belts and steel chains, a two-speed gear being provided. The motor and transmission gear will all be mounted on a distinct tubular type, to which any kind of carriage body may be fitted. The wheels are to be of the suspension type, fitted with Albone ball bearings. We are promised further particulars of the car as soon as it is finished.

### A 2½-h.p. De Dion Motor and Motor-Tricycle.

WE learn that the United Motor Industries, of 3 Rue Meyerbeer, Paris, which is managed by Mr. H. O. Duncan, are in a position to supply to England the latest 1899-1900 standard pattern 2½-h.p. genuine De Dion-Bouton motor, either separately or fitted to tricycles and quadricycles. This new motor has been kept a secret, but it has been going through some severe tests before being adopted by Messrs. De Dion-Bouton & Co. as their new standard model. This 2½-h.p. motor is, we understand, the identical type that was placed first, second, and third in the recent Paris-Bordeaux contest, and ridden in England by Mr. S. F. Edge and Mr. Charles Jarrott with great success. We anticipate a large demand for tricycles and quadricycles fitted with this motor, as more power is required for England, where roads are more hilly than in other countries.

### A Whitney Steam-Carriage at the Exhibition.

CONSIDERABLE interest was evinced at the Exhibition at the Agricultural Hall on Tuesday afternoon by the arrival of Mr. Whitney, of the Whitney Steam Wagon Co., of Boston, U.S.A., on one of his steam carriages. As a lengthy illustrated description of this type of vehicle was given in our issues of June 2nd and 9th last, it is only now necessary to briefly refer to the details. The car, which is the first one to be brought to this country, has an extremely neat appearance, and, while weighing only 615 lb. complete, can accommodate four passengers. The boiler and engines are arranged under the body of the car on a tubular frame, the engines, which comprise two 3½-in. by 6-in. cylinders, driving the rear axle direct. A feature of the car is that the whole of the control—forward and rearward motions, steering, etc.—are controlled by one lever. The road wheels are of the suspension type with pneumatic tires. As we have said, the car attracted considerable attention, not only from the point of view of its novelty, but from the way it answered to the control of Mr. Whitney in the run round the demonstrating arena.

### The Makers of the Pennington Cars.

IN the course of a chat with Mr. Pennington this week, we learn that he has arranged with quite a number of well-known firms to manufacture his cars. Among the firms are the following: Stirling's Motor Carriages, Hamilton, N.B.; Palmer's Shipbuilding Co., Jarrow; The Eclipse Machine Works, Oldham; Wm. Sellers & Sons, Keighley; the Protector Lamp & Lighting Co., Eccles, near Manchester; T. Coulthard & Co., Preston; Messrs. Gilbert & Son, Limited, Lincoln; Frank Morris, Motor Works, King's Lynn; Messrs. F. Savage & Co., Ltd., King's Lynn; Pearson & Bennion, Leicester; and T. C. Courteen, Cheltenham. It will be seen by the above names that the construction of the Pennington cars is in good hands, and with so many concerns engaged on their manufacture they should soon be seen in large numbers on the roads throughout the country.

### The Duke of Westminster an Automobilist.

WE learn that after an interview of Mr. Frederick R. Simms with the Duke of Westminster, who paid a visit to the Exhibition at the Agricultural Hall, his Grace has placed an order with the Motor-Carriage Supply Co., Ltd., for one of their new 4-h.p. Cannstatt-Daimler motor-cars, fitted with magneto-electric ignition, the carriage part of which will be specially built by Mr. Arthur Mulliner, of Northampton.

### Baron de Zuylen and the Automobile Club.

WE are informed that M. le Baron de Zuylen de Nyevelt, the President of the Automobile Club of France, has accepted the invitation of the Automobile Club of Great Britain and Ireland to a dinner to be given in his honour by the Club at the "Star and Garter" Hotel, Richmond, on the 24th inst.

### The Coming Boom.

"THAT the motor-car movement is making very rapid progress in this country is apparent to everybody with their eyes open. Yet" says a correspondent, "I venture to say that only a comparatively few people who have been fortunate enough to get a glimpse of what is now going on behind the scenes, so to speak, have the slightest conception of the present extent of the movement or the magnitude of the business being placed for the coming year. From France I have this week been furnished with figures relating to the position of the motor industry in that country, and I can only say that their magnitude is astounding; and although the volume of business passing through the hands of the makers in Great Britain is small in comparison, yet in proportion to our present capacity for production the demand for all kinds of motor-vehicles is nearly as great, and there is now not the slightest doubt that the year 1900 will witness a genuine boom in everything pertaining to motors that will rejoice the hearts of shareholders in motor companies, and vindicate the hopes held out to them in the earlier days."

### Scottish Visitors in London.

"Among the numerous Scotch visitors at the show this week, I observed," continues our correspondent, "Mr. Stirling from Hamilton, and Mr. Peck, managing director of the Madelvic Motor Carriage Co., Ltd. Mr. Peck, I understand, expected to have some of his vehicles ready for exhibition in London, but found it impossible to get them ready in time, his large contract with the postal authorities having monopolised most of his efforts. I had this week the pleasure of inspecting an entirely new design of motor-carriage, specially built as a touring car by Messrs. Stirling for Mr. Reoch of Buchlyvie, and it struck me as being one of the most complete cars for the purpose which I have seen. It is built on wagonette lines and has a panelled top which is portable. The top extends over the driving seat, with hinged plate-glass windows in front, and side doors with dropping windows entirely protect the riders from the cold winds felt so much on open fast-driven cars. It is beautifully painted in claret and black with white lines, and is luxuriously upholstered in brown moroccos. Under the inside seats are four extra storage tanks for petrol while touring. It is a most elegant car, and for all-the-year-round work I can conceive of nothing more comfortable. I hope to send a photograph of this car for reproduction in next week's issue of *The Motor-Car Journal*."

THE FABRIK FÜR ELECTRISCHE AUTOMOBILWAGEN (Max Schneider & Co.) is the style of a new concern which has just been formed at Dresden.

## THE LIVERPOOL HEAVY-TRAFFIC MOTOR-VEHICLE TRIALS.

MR. E. SHRAPNELL-SMITH, the Hon. Secretary of the Liverpool Self-Propelled Traffic Association, has sent us some particulars of the above trials, which will extend from July 31st to August 2nd next. There are eleven entries, including one vehicle each from America and France, so that a most interesting contest may be anticipated. The vehicles will arrive in Liverpool on Friday, the 28th instant, but the judges require the first two days for their preliminary observations. A limited number of motor-carriages will be provided, to enable visitors to follow the competing vehicles. The hill-climbing capabilities will be tried on Monday morning, July 31st, at Everton. The manœuvring tests will take place in the afternoon at the Prince's Dock. The distance runs, about thirty-five miles each, will occupy August 1st and 2nd. The vehicles will start from the Small Dock Yard, S.W. corner of the Prince's Dock, adjoining the riverside station, beginning at 9.45 a.m. Light carriages will follow at 10.30 a.m. On Tuesday, August 1st, the run will be *via* Water Street, Dale Street, William Brown Street, London Road, Prescott Street, Old Swan, Prescott, Rainhill, Great Sankey, Widnes, Ditton, Speke Church, Garston, Aigburth Road, Park Road, St. James' Street, Park Lane, Canning Place, South Castle Street, Castle Street, Water Street, to the Yard, being "route B" of the 1898 trials. On Wednesday, August 2nd, the run will be *via* Chapel Street, Tithebarn Street, Moorfields, Dale Street, Byrom Street, Scotland Road, Walton Road, County Road, Rice Lane, Walton Vale, Aughton, Ormskirk, Scarth Hill, Rainford, Mossborough, Knowsley, The Hazels, Old Swan, Prescott Street, London Road, William Brown Street, Dale Street, Moorfields, Tithebarn Street, Chapel Street, to the Yard, being "route A" of the 1898 trials. Although the conditions stipulate level platforms, *i.e.*, lorry bodies, it is pointed out that the superstructure can be modified to meet any requirements. The Secretary of State for War, the Postmaster-General, and numerous corporations have deputed representatives to attend the trials.

The following are the entries: Class A. (minimum load, 2 tons; maximum tare, 2 tons; minimum level platform, area 50 square feet).—The Automobile Association, Ltd., London, official number, 11; T. Coulthard & Co., Cooper Road, Preston, official number, 3; The Thornton Motor Co., Ltd., Worsley Mills, Hulme, Manchester, official number, 7. Class B. (minimum load, 3½ tons; maximum tare, 3 tons; minimum level platform, area 65 square feet).—Byleys, Ltd., Newington Causeway, S.E., official number, 9; The Clarkson and Capel Steam Car Syndicate, Ltd., Deverell Street, London, S.E., official number, 6; The Graham Equipment Co., 170 Summer Street, Boston, Mass., U.S.A., official number, 8; The Lancashire Steam Motor Co., Leyland, official number, 5; Simpson and Bodman, Cornbrook, Manchester, official number, 10; The Steam Carriage and Wagon Co., Ltd., Homefield, Chiswick, official number, 1. Class C. (minimum load, 5 tons; maximum tare, 3 tons; minimum level platform area, 80 square feet).—C. & A. Musker, Ltd., Liverpool, official number, 4. Class D. (minimum load, 6½ tons; maximum tare, 4 tons; minimum level platform area, 110 square feet).—The Steam Carriage and Wagon Co., Ltd., Homefield, Chiswick, official number, 2.

L'AUTOMOBILE CLUB BOURGUIGNON is organizing a motor-tricycle race between Dijon and Chalon and back, to be run off on September 6th next. The distance is 150 kilometres.

THE illustrations Figs. 1, 3, and 20 connected with the report in the present issue of the exhibits at the Motor-Car Exhibition at Islington are reproduced from photographs taken by Messrs. Curzon, Robey & Co., 7 Newman Street, London, W., the official photographers to the Exhibition.



## Motor-Car Exhibition at Agricultural Hall.

SINCE our last issue quite a number of new motor-vehicles have been placed on exhibition at the Agricultural Hall, including several types which have not before been seen in this country, with the result that the body of the Hall now presents a crowded aspect. The attendance has considerably improved, and from the majority of the exhibitors we learn that a very large amount of business has been done. The evening sports in the arena have been continued, while the courtyard has all day long presented a most animated scene. The efficiency trials, which have been proceeding daily, the results of which up to Wednesday evening are given in another column, have also evoked considerable interest, especially on the part of the builders of the competing vehicles. Altogether the week has been of an exciting character, and those interested in motor-vehicles who have not yet inspected the show should not fail to pay it a visit either to-day or to-morrow (the closing day), otherwise they will miss an excellent opportunity of seeing for themselves the great progress that has been recently made in motor-car construction in this country.

### THE EXHIBITS.

#### [SECOND NOTICE.]

The British Motor-Coupé Co. of 366 and 368 Euston Road, London, N.W., show a couple of very comfortable motor-vehicles of the type they are now letting out on hire for private use in town or country. One is a four-seated vehicle which can be used either as an open carriage or a closed brougham. The other is a four-seated open carriage with hood. The motor is of the Daimler type of 4 h.p. nominal; it is located at the rear of the vehicle and is suspended on springs, by means of which vibration is reduced to a minimum. The cars are provided with four forward speeds, including a low one for hill-climbing, and one astern. The speed-varying gear is all controlled by one lever, the power being transmitted from the motor-shaft to the counter-shaft by belts, and from the latter to the rear road wheels by pinions and internal-toothed rings. The Coupé Co. state that these vehicles, of which an illustration was given in our issue of June 16th last, can travel fully 100 miles per day, maintaining a good speed throughout.



From a Photograph by

FIG. 1.—A GROUP OF MOTOR-CARS AND CYCLES AT THE EXHIBITION, TAKEN IN DEMONSTRATION ARENA.

Curzon Robey & Co., 7 Newman Street W.

The British Motor-Coupé Co. are also exhibiting a motor-quadracycle built by Messrs. Humber & Co., of Coventry. The vehicle, which is well finished, is fitted with a De Dion motor of  $1\frac{1}{2}$  h.p., and carries two persons. The Company has also on view an example of Messrs. De Dion and Bouton's latest productions in the way of racing motor-tricycles.

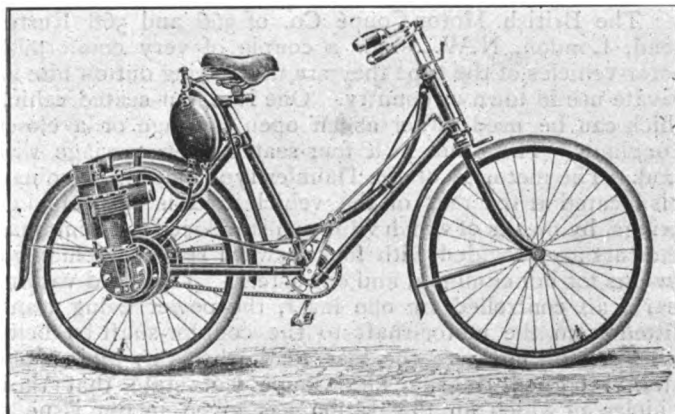


FIG. 2.—LAWSON'S MOTOR-BICYCLE.

Lawson's Motor Safety Co., of 40 Holborn Viaduct, London, E.C., in addition to exhibiting the new motor-bicycle (Fig. 2) in both racing and roadster form, which we described some time ago, is showing a two-seated motor-tricycle and a new light motor-delivery-tricycle. In the bicycle and the two-seated tricycle the petroleum-spirit motor is placed on one side of the back wheel, its fly-wheel balancing it on the other. The motor is stayed by being fixed to two brackets fastened to the back wheel. The crank shaft, of course, passes through the rear wheel, and the speed reduction is

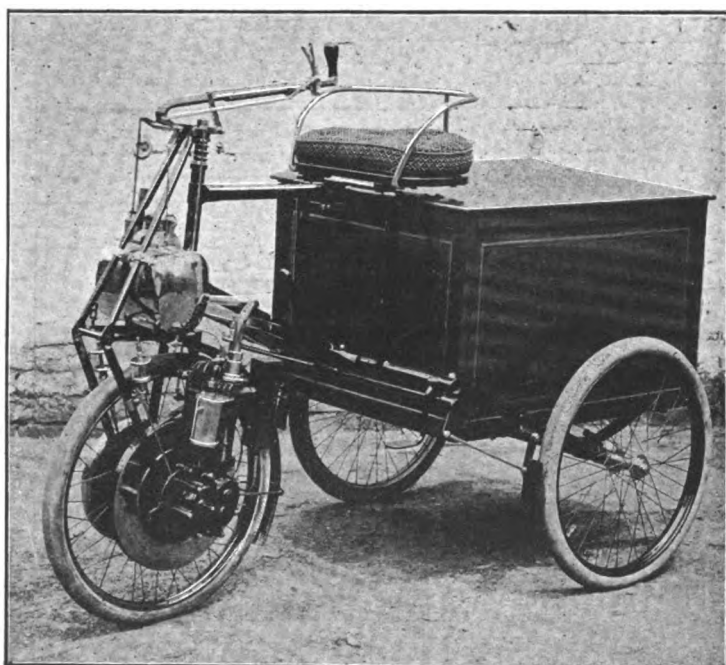
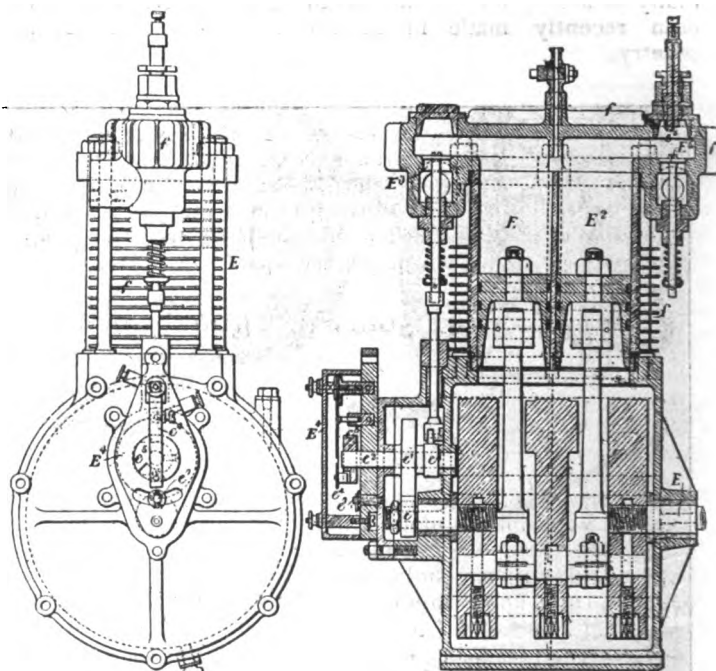


FIG. 3.—LAWSON'S MOTOR-CARRIER-TRICYCLE.

attained by means of epicyclic gearing connected up to the inside hub by a clutch. The motor, in the case of the bicycle, is designed to develop  $1\frac{1}{2}$  h.p., the bore of the cylinder being 4 millimetres and the stroke  $2\frac{1}{4}$  in., while in the two-seated tricycle the motor is capable of working up to  $2\frac{1}{2}$  h.p. Ignition is by an incandescent tube heated by a burner supplied from an independent tank fitted with a pressure

pump. The brakes are powerful and so coupled to the carburettor that at the time of their application the supply of explosive gases is automatically cut off from the motor. The tank carried at the rear of the saddle is oval in shape and fulfils a four-fold purpose. It contains the supply of spirit, a special carburetting chamber, a lubricating oil chamber, and a pressure tank fitted with pump for the supply of spirit to the burner. Speed is regulated by the coupled brake and mixture control device, and also by varying the air supply. By the release of the clutch, controlled by a small screw-handle placed on the head of the machine, it is possible to cut off the power transmission from the bicycle. It then runs without the motor driving at all, when coasting, etc. The delivery tricycle (Fig. 3) is quite a new departure, for while being larger than an ordinary carrier tricycle, it is not so large as a light van, its carrying capacity being about 2 cwt. The motor and transmission is the same as in the two-seated tricycle, but it is all mounted on the front wheel, which is carried in a specially strong fork and "head." A comfortable seat is provided on the front of the carrier for the driver.

The De Le Croix Motor Syndicate, Ltd., of Throgmorton House, 15 Cophthall Avenue, London, E.C., have on view a



FIGS. 4 AND 5.—END VIEW AND SECTIONAL ELEVATION OF DE LE CROIX MOTOR.

new type of motor sociable quadracycle, weighing complete about 300 lbs. The frame is built up of steel tubing, the four wheels being of the suspension type fitted with pneumatic tires. The motor is a twin-cylinder one of the De Dion type; it is located in the rear portion of the vehicle and is capable of working up to 2 h.p. at a speed of 800 revolutions per minute; the ignition is electrical and the cooling of the cylinders effected by means of radial discs. Two illustrations of the De Le Croix motor, which is of Belgian origin, are given in Figs. 4 and 5. It will be seen that both pistons are linked to one crank pin on the shaft, *E*. Only one sparking plug is provided, an impulse to each piston being given simultaneously. The carburettor is also of the De Dion type. Since this vehicle was first introduced into this country, considerable changes have been effected in the transmission gear. The vehicle exhibited is incomplete, but when finished the power will be transmitted from the motor to the rear axle of the machine by a belt which, normally running slack, can be tightened by a jockey pulley, thus enabling the motor to be started before the vehicle is put in motion, and also the motor cut out from the trans-

mission gear, when riding through traffic. A maximum speed of from 12 to 14 miles per hour can, it is stated, be attained by the vehicle.

The exhibit of Mr. E. A. McLachlan, of 55 Brighton Road, Stoke Newington, is interesting from several points of view, particularly from the fact that it is the only vehicle fitted with a heavy-oil motor in the Exhibition, and also of its low price. It is a two-seated three-wheel car (Fig. 6) fitted with a single-cylinder horizontal motor at the rear, which, working with ordinary paraffin oil, gives  $2\frac{1}{2}$  a.h.p. The ignition is by



FIG. 6.—THE McLACHLAN HEAVY-OIL MOTOR-CAR.

means of an incandescent tube, the lamp for the latter also heating the vaporiser. Two speeds are provided, the motor-shaft driving the counter-shaft by spur-gearing, while a couple of belts connect the counter-shaft with the rear axle. These belts normally run slack, and are tightened by jockey pulleys. The frame is built of steel channels; the body of the car, which completely encloses the motor and gear, being of polished walnut. The oil tank has a capacity of two gallons, stated to be sufficient for a run of 50 miles, while the tank containing the cylinder-cooling water will hold seven gallons. The road wheels are of the suspension type with pneumatic tires. Two brakes are provided—one acting on the fly-wheel of the motor, and one a band brake on the rear axle. The car, which weighs complete about  $7\frac{1}{2}$  cwt., is listed at only £75. Mr. McLachlan is also making a four wheel vehicle of the same type, with a differential gear, at a slightly higher price. Mr. McLachlan also displays a  $2\frac{1}{2}$ -h.p. electro-motor for launches; the armature is of the ring type—8 in. in diameter—and runs at 2,500 revolutions per minute. The motor is reversible, a metallic brush being employed.

Mr. F. C. Blake, of Ravenscourt Works, Hammersmith, who has been known in the automobile world for his electric ignition apparatus, exhibits for the first time a light two-seated carriage (Fig. 7), built in accordance with his own ideas. The motor is a horizontal two-cylinder one of the petroleum-spirit type; it is of 3 b.h.p., with water-jackets, and is located in the centre of the rear portion of the frame; its normal speed is 800 revolutions per minute. In the car on exhibition the ignition is electrical by means of small accumulators. It was not possible to completely finish the vehicle, as it finally will be, in time for the show. In this case, for example, Mr. Blake has only fitted the accumulators temporarily, it being intended to use an electro-magnetical device driven off the motor-shaft known as Dawson's. A carburettor of the Longuemare type is employed. Two speeds, about five and fourteen miles per hour, are provided. The motor-shaft carries a drum, which is connected by a single belt to a first counter-shaft, carrying one loose and two fast pulleys. Connected

to each of the fast pulleys is a pinion which gears with corresponding pulleys on a second counter-shaft. The belt-shipping lever is controlled by the foot and not by the hand as usual, this single lever being made to serve a number of purposes. The foot pedal works in a  $\Lambda$  slot in the floor of the carriage, and is arranged to take four different positions: (1) the high speed; (2) the low gear; (3) belt on loose pulley, motor thus running free; and (4) application of band brake. The first counter-shaft is carried in swinging arms, the belt being continually kept taut by means of a spring. From the second counter-shaft to the rear road-wheel axle the power is transmitted by a single chain. The wheels are of the suspension type with solid rubber tires. Steering is effected by means of a hand wheel controlling the front wheels. Another feature of the vehicle is the pneumatic spring device fitted to the fore-carriage frame. This is of the compensation lever type, allowing each wheel to rise and fall independently, according to the inequalities of the road, the strain being taken up by a centrally-located pneumatic pad encased between two metal discs. The petrol tank, which has a capacity of 8 gallons, is arranged in the front of the car, providing an additional seat for two persons. The car is started by means of a detachable handle, while all the working parts of the motor are readily accessible. The water tank is of large capacity and fitted with cooler sufficient for a day's run. The upholstery is in Morocco leather, and the back of the seat is carried up high enough to make a comfortable rest. The front mudguards are fastened to the front axles and move with the wheels, so keeping mud from being splashed over underframe and machinery. The car appears to run very quietly and with a minimum of vibration. Its weight complete is between 7 and 8 cwt. In addition to this car Mr. Blake is also showing his well-known induction

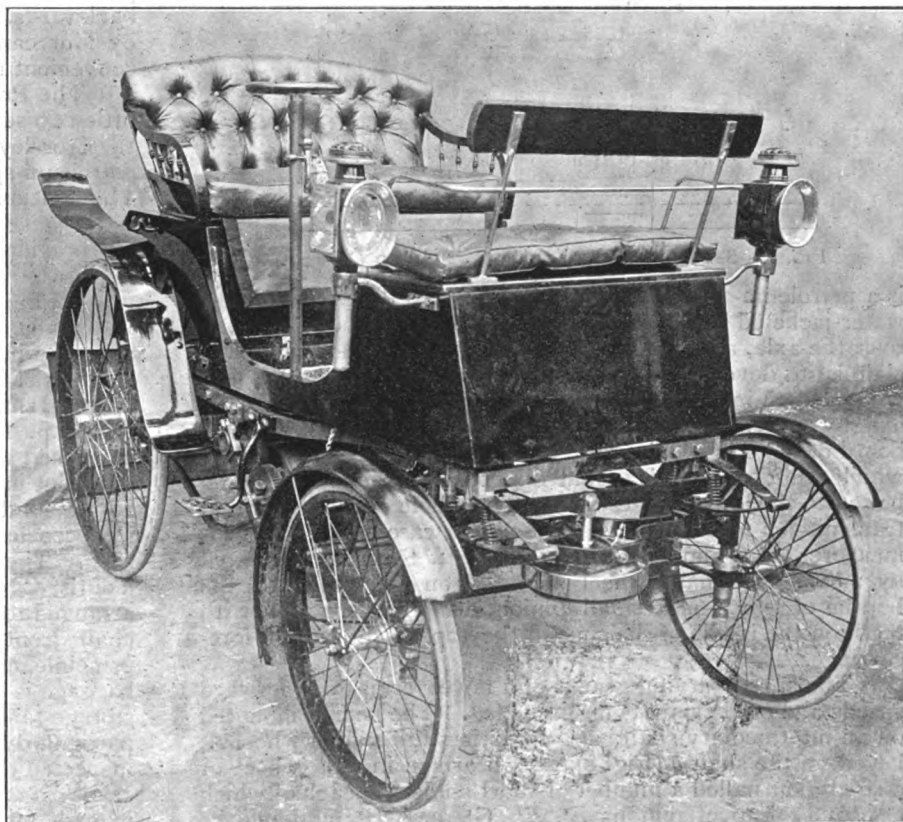


FIG. 7.—THE BLAKE TWO-SEATED MOTOR-CARRIAGE.

coil for the ignition of the charge in motors. They are fitted with large platinum contacts for continuous and heavy work, and the secondary winding is protected from damp and mechanical injury by a strong light covering from end to end. The coils give a very bright flaming spark, and are largely used by owners of motor-cars. The Blake portable accumu-



lator is another exhibit. This is of 2 volts E.M.F. and 35 ampère-hour capacity, made up in vulcanite case, with large rubber vent hole so that the plates can be seen. The cells are now supplied with lead terminals above the case instead of brass. Other exhibits at this stand are an improved Benz sparking plug, so arranged that the plug can be taken out without it being necessary to remove the flange; an improved Benz compression chamber in which the space is reduced  $\frac{1}{8}$  in. in depth, resulting, it is claimed, in an increased compression; a vertical two-cylinder petrol motor for launches; a small accumulator charging dynamo, which at 2,600 revolutions gives 6 ampères at 30 volts.

The Pretot Motor Syndicate, Ltd., of 24 Budge Row, E.C., show a comfortable-looking Victoria, fitted with a Pretot *avant-train*, an arrangement whereby an ordinary horse-drawn vehicle may be quickly converted into a motor-carriage. This arrangement, which is of French origin, consists of a fore-carriage on which the motor and the power transmission mechanism are mounted, the front wheels thus serving both for driving and steering, the whole forming an attachment by which any four-wheeled vehicle can readily be converted into a motor-carriage. The whole of the motor and transmission gear, with the exception of a tubular water-reservoir placed in the fore-part of the carriage, is contained in a box or casing placed upon the axle, and practically the only alteration required in the carriage is the provision of two holes in the foot-board—one for the steering-gear, and the other for the lever that regulates the speed. The engine frame, and with it the front wheels, are kept in position by a central shaft, which also serves as the steering spindle. The motor, which

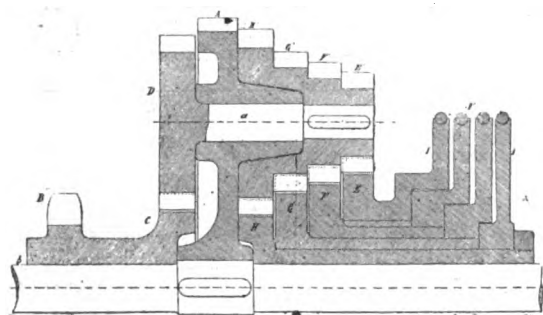


FIG. 8.—SECTION OF PART OF PRETOT SPEED CLUTCH.

is a petroleum-spirit one, is of the horizontal, twin-cylinder, water-jacketed type. It is arranged on one side of the frame over the axle, and, running at 700 revolutions per minute, is claimed to develop 5 h.p. The power is transmitted by gear wheels to an intermediary shaft, and from the latter to the axle by sprocket wheels and chains. Underneath the foot-board of the carriage is a disc plate, fitted with castor-wheels, which run on a ring of equal diameter to the upper plate, bolted to the lower frame-work. The whole of the motor and transmission mechanism is enclosed in a case or cover, which measures approximately 3 ft. 6 in. by 2 ft. Steering is effected by means of a hand-wheel mounted on a spindle, on the bottom of which is a small pinion, which is engaged with teeth on the inside of the ring on the top of the motor fore-carriage.

The speed-varying gear is of a novel form, three forward speeds and one reverse being provided. The gear is mounted on an intermediary shaft, and comprises the pinion wheel *A*, keyed on the shaft *b* (Fig. 8). In bearings in this wheel or disc are journaled a number of short studs *a, a*, each of which carries a group of pinions *E', F', G', and H'*, and on the opposite side a single pinion *D* gearing with a pinion *C*, loose on the shaft *b* and connected to a sprocket-wheel *B* from which the road wheels are driven. Each of the pinions *E', F', G', and H'* gears with wheels *E, F, G, and H*, having on their bosses brake-discs *I*. By means of brake-straps *I'*, any one of the wheels *E, F, G, and H* may be held stationary, and the motion of the driving wheel *A* conveyed to the wheels *C* and *B*. The wheel *H* is made smaller than *C*, so that when

it is in gear the motion of *C* is reversed. The action of the gear, which is controlled by a single lever, is as follows: Suppose *A* is revolving at a constant speed, and the four wheels *I* are allowed to turn freely, the brakes being loose, then *C* will not rotate, but *D* will revolve as it circles round *C*, and will impart motion to *H', G', F', E'*, and they to *H, G, F, E*, in proportion to their relative sizes. Now, suppose the brake is applied firmly to *E*, then, as *A* revolves, *E'* rotates

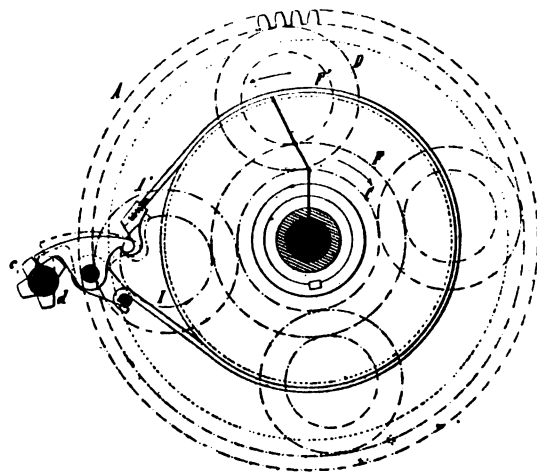


FIG. 9.—TRANSVERSE SECTION OF PRETOT SPEED CLUTCH.

at a speed proportional to the difference in diameter between it and *E*, and imparts motion to *D*, which in turn passes it on to *C* and *B*, and so to the driving wheels. The two other wheels *G F* give lower speeds, but when the pair *H' H* are put in action the driving is reversed, and the carriage goes backwards. The brakes and brake wheels *I* are controlled by four cams *c* (Fig. 9), actuated by a hand lever within convenient reach of the driver.

The Pretot Motor Syndicate, Ltd., are also showing a little two-seated car, built by Messrs. Brown & Buckton, of 14 Crossley Street, Halifax. The motor is a horizontal petroleum-spirit one, with two cylinders, working up to  $3\frac{1}{2}$  h.p. The ignition is electrical, while the cylinders are fitted with a water-jacket. Two forward speeds and one reverse motion are provided, the transmission being effected by belts and chains.

Stirling Motor Carriages, Ltd., of Hamilton, N.B., have an exhibit of four excellently-finished Daimler cars. The motor and transmission mechanism of these vehicles is of the Daimler standard type, and needs no description at this time. The "Hamilton" dog-cart, to seat four persons, is fitted with a  $5\frac{1}{2}$ -h.p. Daimler motor. The body of the vehicle is of varnished walnut, while the under-carriage is painted umber, lined out in straw colour. The road wheels are fitted with  $2\frac{1}{2}$ -in. solid rubber tires. The upholstery work is in morocco leather, the whole turn-out being of a handsome kind. The next vehicle is what is known as the Miniature Tourist Car. It is fitted with a  $5\frac{1}{2}$ -h.p. Daimler motor, and arranged to seat four persons, there being a comfortable arm-chair front seat, and two seats at the back on wagonette principle, accommodating two persons. Accommodation for baggage is provided, while the car is furnished with extra storage tanks, so rendering the vehicle, as its name implies, particularly well adapted for touring purposes. We next inspected the "Brandon" brougham. The entrance to this car is arranged at the front next to the driver's seat; provision is made for two inside passengers, although two folding seats for children are also provided. The interior of the vehicle is upholstered in old gold silk plush, the body is painted black and brown, the wheels and undercarriage being grey, lined out in old gold colour. The last exhibit of the Stirling-Daimler cars to be noticed is a family omnibus to seat eight persons. The roof of this vehicle is made detachable, so that it may be readily converted into an open wagonette. The motor is of  $5\frac{1}{2}$  h.p., of the standard type, the wheels

being fitted with solid rubber tires. Altogether these cars are excellent specimens of workmanship, and have been greatly admired during the past week.

Considerable attention has been attracted by the twenty-seated Stirling-Leyland steam omnibus shown by this Company. The "body" of the car is the production of Messrs. Stirling, while the boiler, motor, and transmission are the construction of the Lancashire Steam Motor Co., of Leyland. The boiler is located in the front portion of the car; it is of the fire-tube type, and is constructed for a working pressure of 200 lb. The water is fed to the boiler by means of a small brass feed-pump, which is set to give a constant feed. The vehicle is fitted with an air condenser, which weighs only 95 lbs., on the roof of the cab. Liquid fuel is employed to generate steam. The system adopted provides for the automatic regulation of the supply of the oil fuel to the burner, the regulator being divided by a slightly flexible steel diaphragm into two chambers, the upper of which is in communication with the steam space of the boiler, whilst the lower contains the upper end of the oil valve spindle, which is kept in contact with the under surface of the diaphragm by means of a spiral spring. The burner proper is a casting suspended inside the fire-box of the boiler by a coil of piping, the oil being forced by compressed air through the regulator to the burner, and vaporized on its passage to the orifice. The burner is started by igniting a handful of shavings or paper beneath it, and allowing a small quantity of oil to pass. As soon as the burner becomes sufficiently hot, oil vapour issues from the fire hole beneath the centre of the air cone, and ignites at the top of the cone. The flame thus produced is deflected outwards by the chamber on the upper portion of the burner, so that the fire-box is filled with flame. When the steam acquires the desired pressure the deflection of the diaphragm causes the closing of the oil supply valve, and this valve is re-opened by the action of the spiral spring already referred to when the steam pressure is reduced. The supply of oil to the burner is thus so regulated that steam pressure should be maintained automatically. The engine is of the compound, vertical two-cylinder type; the cylinders being  $2\frac{1}{2}$  and  $5\frac{1}{2}$  in. in diameter. A small pump is driven off the main shaft and forces lubricating oil through special channels to the engines and driving-shaft journals. Three forward speeds and one reverse motion are provided. Spur gearing is used to transmit the power from the engine-shaft to the first counter-shaft, reverse motion being effected by means of a clutch. Hans Renold's chains form the connection between the first counter-shaft, the differential gear, and the driving wheels. The vehicle is fitted with two brakes, a band brake on the first counter-shaft and shoe brakes on the rear road wheels. The former is actuated by a foot lever, the latter by worm gearing. The water tank holds 26 gallons and the oil tank 18 gallons. The vehicle is roomy inside, well ventilated, and extremely comfortable. The windows, which are large and give a light and airy appearance, are made movable. They are hinged at the top and can be opened or closed as required, or they can in summer be entirely removed from the vehicle. The carriage therefore can be used either as a closed bus or open brake or *chairs-a-banc*.

We briefly alluded in our last issue to the light four-seated dog-cart (Fig. 10) exhibited by Higgs' "Champion" Car Syndicate, 17 Ironmonger Lane, London, E.C. The motor in this car is a De Dion  $1\frac{1}{4}$  h.p., but it is intended to fit future cars with a more powerful motor. The motor and the whole of the transmission gear is arranged under the "body," so

that none of the working parts are visible. The motor drives by pinions a first counter-shaft, which in turn is geared by a belt, working on fast and loose pulleys, to the rear axle. Only one speed is provided in the car exhibited, but it is intended to fit a two-speed gear in future. The starting of the motor is effected from the front seat by means of a foot-pedal, which terminates in a rack in gear with a ratchet wheel on the second counter-shaft. A hand lever is provided which serves a three-fold purpose, its operation controlling simultaneously the application of a band-brake, the cutting off of the electrical ignition, and the shifting of the belt on to the loose pulley. The steering arrangement is also of a new type. The lower end of the steering pillar is rigidly connected to one end of a horizontal short arm, to the other end of which is fixed a short vertical rod fitted with a roller. This short rod works in a recess formed in the lever connected to the steering wheels. Both the front and rear axles are provided with helical springs. The car weighs complete about 4 cwt. The road wheels have wooden spokes, with solid rubber tires.

Messrs. Noé Boyer & Co., of 30 Avenue de la Grande Armée, Paris, make a very imposing display of their Phébus



FIG. 10.—HIGGS' "CHAMPION" MOTOR-CAR.

motor-tricycles and quadricycles, which are all fitted with Aster motors. Three tricycles are shown, including a racing machine, and a very highly finished quadricycle. The suspension of the front seat of the latter is well provided for, the seat being supported on the frame by both C and plate springs. Messrs. Boyer & Co. also exhibit a very ingenious front seat attachment for converting a tricycle into a two-seated quadricycle, the seat of which, when not in use, can be folded up into a kind of box. The feature of the Phébus motor-cycles is the "Aster" motor with which they are fitted, and which is made by Les Ateliers des Constructions Mécaniques "L'Aster," of 33 Cours Benoist, Saint-Denis (Seine), France. The chief feature of the motor (Fig. 11) is to be found in the *ailettes* or radial discs fitted round the cylinder to effect the cooling of the latter. These discs, instead of being cast with the cylinder, are made of corrugated copper, and it is claimed for them that they will disperse six times as much heat as an equal surface of cast iron. The motor can be arranged for either electric or tube ignition, although the former is generally employed; the exhaust valve is actuated in the usual way by a cam on a small shaft driven by spur wheels off the crank shaft. The motor occupies a very small space, and, while weighing only 66 lb., is claimed to develop  $2\frac{1}{4}$  h.p.



In connection with this motor a new form of carburettor (Fig. 12) is employed, the claim for which is that it will work regularly, even when the machine is travelling over rough roads. It consists of a copper cylinder of a capacity of five litres. The petrol is introduced at *A*; *F* is a float of a special form, the top of which carries a copper plate *P*. To this plate is fixed a tube *C*, which extends right to the top of the tank, passing on the way through a diaphragm. This tube *C* is pierced at its upper end with small holes covered with a wire gauze. Within the tube *C* is a rod, terminating in a small conical cork float, while at the top of the outside of the tank is a double valve, one part of which controls the admission of fresh air, while the other controls the quantity of explosive mixture allowed to pass to the motor. The tank is

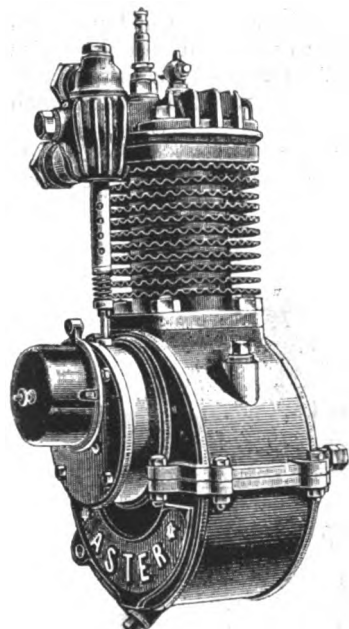


FIG. 11.—THE "ASTER" MOTOR.

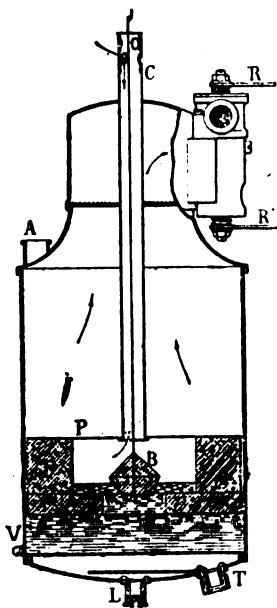


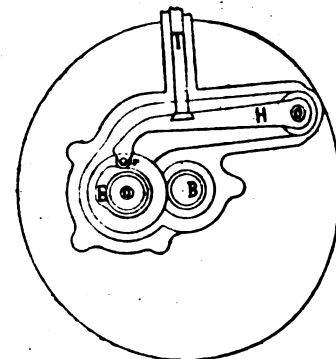
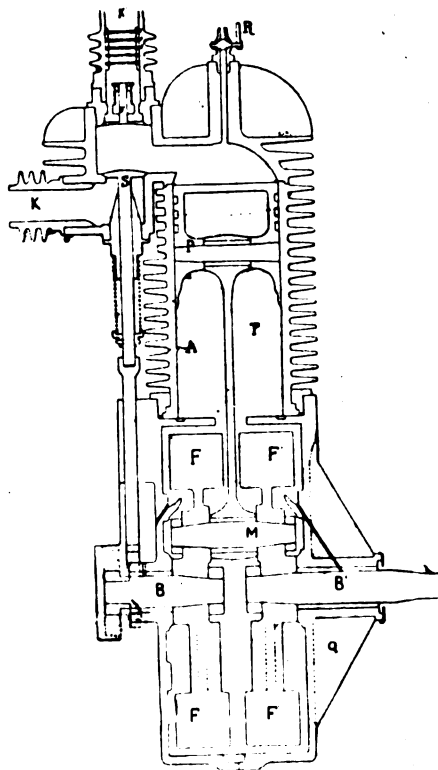
FIG. 12.—SECTION OF "ASTER" CARBURETTOR.

provided with a double bottom, a part of the exhaust gases being conveyed through it to give a slight preliminary heating to the petrol. The air drawn in by the motor enters by the pipe *C*, and passing down the tube meets and is dispersed by the float *B*, over the surface of the petroleum-spirit. The carburetted air then rises into the dome of the tank, passing through a wire gauge, which serves to prevent any chance of a return flame in the carburettor. From the dome the carburetted air passes through the double valve to the motor in the desired quantity, and mixed with the requisite amount of fresh air. The Phébus motor-tricycle with Aster motor has already met with a large adoption in France, and judging from the reception it has met with at the Exhibition it is likely to be soon very popular in England.

A motor-tricycle fitted with a new type of petroleum-spirit motor is that which is shown by La Société des Moteurs Sphinx (Damas & Clément), of Levallois-Neuilly, France, and 58 Holborn Viaduct, London, E.C. The motor (Figs. 13 and 14) has a cylinder 70 mm. diameter by 70 mm. stroke; at a speed of 1,800 revolutions per minute it will, it is claimed, indicate  $2\frac{1}{2}$  h.p. The motor shaft is in two parts, each carrying on their inner ends, within a phosphor-bronze oil-containing case, discs which take the place of the usual crank, the oscillating piston rod being connected to a short shaft carried by the two discs. The inlet and exhaust valves are placed one above the other in such a way that they can readily be removed for cleaning purposes, etc. The ignition is effected electrically, a spark due to the sudden breaking of the circuit being employed. The motor, which is provided with radial discs not only to the cylinder walls but also to the outsides of the two valves for cooling purposes, is stated to weigh only about 60 lb.

Several examples of the motor are on view, apart from

the tricycle, the firm supplying these to builders of motor-tricycles. The petrol tank and carburettor is of the De Dion type. Messrs. Damas & Clément are also making a two-cylinder motor of the same type for light voitures. The two cylinders are set in the same plane, but at an angle to each other, the piston rods of the two cylinders being connected



FIGS. 13 AND 14.—SECTIONAL ELEVATION OF "SPHINX" MOTOR AND DIAGRAM OF EXHAUST-VALVE CONTROL.

to the same crank. The two cylinders are arranged with independent petrol supply pipes, the sparking gear being also independent, so that one of the cylinders can be cut out when not required, as, for instance, on a slight down grade. The ignition device is arranged to give an impulse in each cylinder alternately, the two-cylinder motor being capable of working up to 4 h.p.

The Star Cycle Co., Ltd., of Wolverhampton, are exhibiting through the Automobile Association, Ltd., of Notting Hill, W., a couple of their new "Star" light motor-

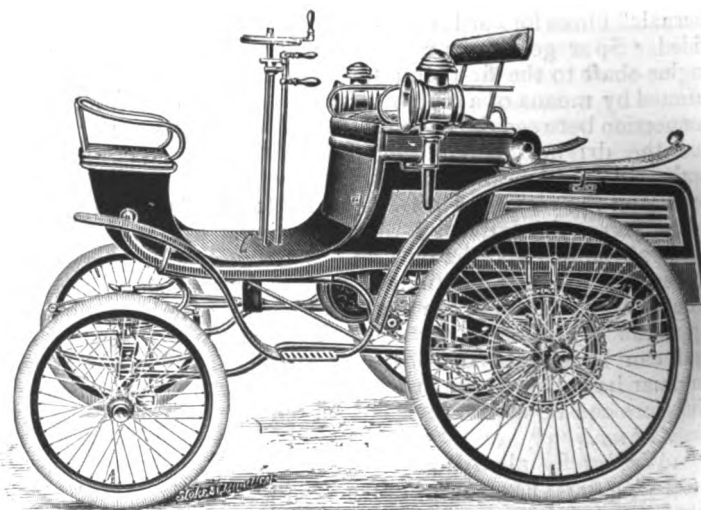


FIG. 15.—THE "STAR" MOTOR-CAR.

carriages (Fig. 15). These cars follow Benz lines, but are throughout of English construction. They are fitted with a

"Star"  $3\frac{1}{2}$ -h.p. single-cylinder petroleum-spirit motor, and are capable of taking three persons up the steepest gradients. Electric ignition is used, and a throttle valve, conveniently placed on a level with the seat, renders the management of the car very easy. The transmission is by means of belts and driving chains. Two speeds are provided, as also a starting gear, and two independent brakes. The wheels are of the tangent spoke type, and the whole carriage finished in the best style.  $\frac{3}{4}$ -in. balls are used for the bearings. On a good smooth road they are adapted to run from any speed up to twenty miles per hour. Each carriage is fitted with two powerful brakes which are capable of stopping it on the steepest down grade. Each car for the electric ignition is provided with a double set of accumulators, each of which will, it is stated, work continuously for 350 miles.

The Endurance Motor Co., Coventry, on Saturday last brought in for exhibition one of their new two-seated vehicles, which has a very smart and fast appearance. The body of the car is entirely distinct from the frame. The motor is somewhat on the lines of the Benz, but is of English construction throughout. The engine is of 4 h.p., the cylinder being 5 in. diameter by 5 in. stroke; the ignition is electrical, while the cylinder is water-jacketed. Two speeds are provided, the transmission being effected by belts working on fast and loose pulleys. All the control handles are mounted on the steering standard, the shifting of the two belts being controlled by a single handle. The wheels are of the cycle type, with tangent spokes and Dunlop pneumatic tires. The London agency for the Endurance car has, we learn, been secured by Mr. J. Burns, of 44 Berners Street, W.

Messrs. De Dion, Bouton & Co., of Puteaux, France, had intended to make a large display of their productions, but unfortunately were unable to send over more than a couple of machines—an ordinary motor-tricycle with  $1\frac{3}{4}$  h.p., and a similar machine convertible to a two-seated quadricycle. The latter is of a very attractive appearance, the additional seat being upholstered in light brown leather. This machine is meeting with immense success throughout France, as it is admirably adapted for carrying a lady companion. It is geared down low, so that it can climb almost any hills without pedalling, and up very stiff hills with a very slight assistance from the pedals. The front part is fitted on easy springs, which make the machine comfortable and renders the steering most simple. The productions of the De Dion-Bouton firm are too well known to need any lengthy reference at this time, but it may here be mentioned that the firm is about to introduce a motor of  $2\frac{1}{4}$  h.p. in place of the  $1\frac{3}{4}$  h.p. hitherto employed.

Messrs. Farman & Co., of 25 Rue de la Paix, Paris, exhibit a well-finished motor-tricycle, with  $1\frac{3}{4}$ -h.p. De Dion, of the *cloche* type. The machine is provided with two band-

from wet, etc. Messrs. Farman are also showing a front-seat attachment for a tricycle, so that the latter may be quickly converted into a two-seat quadricycle. A large range of motor-cycle accessories, including sparking plugs, induction coils, lanterns, etc., is also displayed.

We have already mentioned in this journal that Messrs. Brown Bros., Ltd., of Great Eastern Street, E.C., the well-known cycle and cycle accessory factors, are engaging extensively in the motor trade; consequently it is not surprising to find them making a large display at the exhibition. Their display includes not only motor-tricycles and quadricycles, but also motors and fittings to enable cycle makers and others to build motor-tricycles. The tricycles shown are all fitted with De Dion motors, both of French and English construction. The "Perfecta" tricycle, made by Messrs. Darracq of Paris, has a De Dion motor, fitted with a two-speed gear, arrangements being also provided so that the motor can be cut out from the transmission gear. A "Perfecta" quadricycle fitted with the same change speed gear is also on view. The workmanship throughout appears to be of a high-class character. On the stand is also to be seen a large display of motor-car and cycle accessories, including hubs, chains, chain wheels, sparking plugs, carburettors, etc., as also a new alarm for use on motor-cars. The latter is known as the "New Departure," and is arranged to be operated by the foot. The bell, which is largely used in America, gives a very loud alarm, and is simply controlled.

Another addition has been made to the stand of the Automobile Association, Ltd., of Notting Hill, W., during the past week in the shape of the Waverley electrical "Runabout." This vehicle, which from its smart appearance and high finish has attracted considerable attention, is of American construction, being made by the Indiana Bicycle Co., of Indianapolis. The framework of the running gear is tubular, with brazed joints. All wheels have ball bearings, wire spokes, and pneumatic tires. The motor, which is of the multipolar type, is rigidly hung to the frame, and it and all gears are covered, amply protecting them from dust and water. The motor-shaft is geared directly to the two rear wheels by a single reduction. Each rear wheel is made to revolve independently of the other by compensating gears placed in line with the motor shaft. The motor is of  $1\frac{1}{2}$  h.p. The battery employed is of a new type, and is claimed to be less than half the weight of the storage cells used in other vehicles of the same capacity. It consists of forty-four cells, varying in size from 60 ampère-hour to 125 ampère-hour capacity, according to the power desired, the weight of the lightest being about 9 lb. for each cell. They are arranged in four trays of eleven cells each. The normal discharge rate of the battery is about 15 ampères, at which rate the car runs at a speed of from twelve to fourteen miles per hour. A watt-meter is conveniently placed, enabling the operator to see at any time at a glance the amount of energy in store. A simple ratchet lever set on notches for starting the vehicle, regulating speed, etc., is placed at the extreme left side of the seat, and actuates a controller beneath the seat. The slowest speed is obtained by grouping the four trays in parallel, the second by grouping two trays in parallel and two in series, the third or highest speed by four trays in series. The current delivered to the motor for each of the speeds is stated to be practically constant, but the speed of the motor and the current delivered from each tray of batteries vary directly with the voltage, thus making the consumption of energy at all times proportional to the speed. The carriage is reversed by a key placed directly below the controller, the turning of which simply reverses the polarity of the armature. The removal of this key makes the vehicle inoperative. A band brake is applied to the periphery of the compensating gear drum, and is operated by a foot-pedal. The capacity of the battery is stated to be sufficient for a run of thirty-five miles.

Mr. Carl Oppermann, of 2 Wynyatt Street, Clerkenwell, E.C., displays a very neat electrical Victoria, which is, we learn, being largely taken up on the Continent for service in

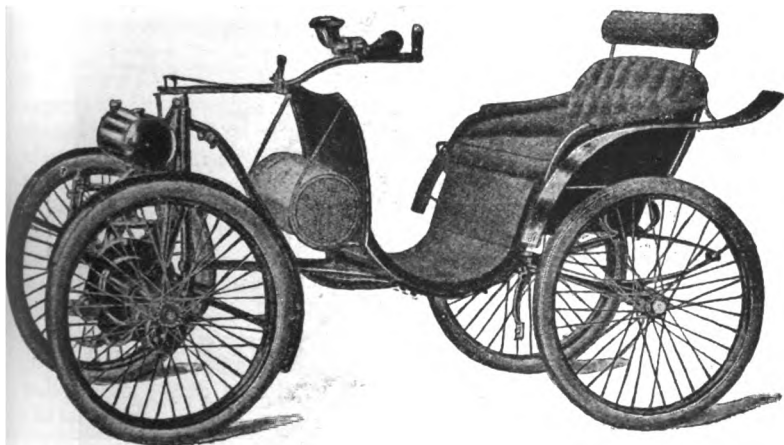


FIG 16.—LA SOCIÉTÉ PARISIENNE "VICTORIA COMBINATION."  
(For description see last issue.)

brakes, one on the differential gear and one on the front wheel. The induction coil is entirely closed, so being shielded

busy towns. The battery, which consists of forty-two cells of Mr. Oppermann's own type, is slung by steel springs under the frame of the carriage. The weight of the battery is stated to be only about  $7\frac{1}{2}$  cwt., while its capacity is sufficient

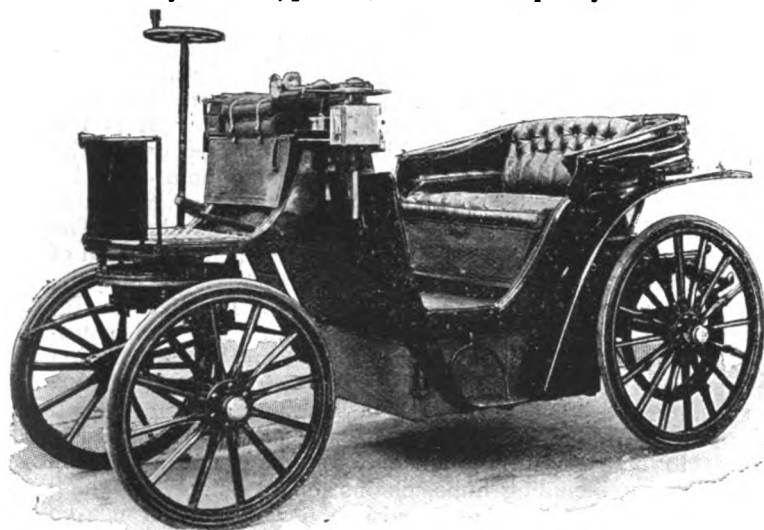


FIG. 16A.—THE OPPERMANN ELECTRICAL VICTORIA.

for a run, in towns, of about sixty miles. The motor, which is located in the rear portion of the vehicle, runs at 1,600 revolutions per minute; and, while its normal capacity is 3 h.p., it is capable of working up to 7 h.p. The motor is located in the rear portion of the vehicle under the passengers' seat. From the motor shaft the power is transmitted through silent hide gear wheels to an intermediary shaft, provided with a differential gear, and from the latter to the rear road wheels through sprocket wheels and chains. All the motions—starting and stopping, reversing the motor, and the application of the electrical brake—are controlled by a single handle. Three forward speeds—the maximum in the Victoria being eleven miles per hour—and one backward motion are provided. Steering is effected through the front wheels by means of a hand wheel. The steering wheels are not mounted on the usual vertical pivots, but on an ordinary axle, the steering effected being through a special turn-table, fitted with a double reduction gear, by means of which the car can turn in a very small space. In addition to the electrical brake, band brakes acting on drums on the rear wheels are provided, these brakes being controlled by a foot lever and flexible cable. The weight (Fig. 16A) of the Victoria is 23 cwt. Mr. Oppermann has also lately completed a new electrical car, in which the whole of the motor and transmission gear is mounted on the fore-carriage, occupying but a very small space, the

noiselessness of the vehicle being another feature. In the course of a chat with Mr. Oppermann, we learn that he has lately secured an order for fifty of his electrical vehicles for service in Vienna. These cars will be provided with a standard tubular frame, carrying the motor and transmission gear, etc., in such a way that any type of body may be fitted.

A very neat-looking electrical vehicle is the four-seated Victoria (Fig. 17) exhibited by Mr. E. H. Clift, of the Sinclair Motor Works, Sinclair Road, Kensington, W. The car, which can be fitted with a detachable "tiger" seat at the rear, is provided with a battery of 40 accumulators arranged under the seats. The cells are of a special type, having Headland positive plates and Clift negatives; the weight of the battery is 1,200 lb., one charge being sufficient for a run of 50 miles over ordinary roads. The battery is arranged to be recharged *in situ* from either a 50 or 100-volt circuit, an operation which can, if necessary, be done in two hours. The electro-motor is of the series type, of 3 normal h.p., but capable of working up to 6 h.p. The speed of the motor, which is reversible, is 1,200 revolutions per minute. The motor is located under the centre of the car and is geared to the counter-shaft by raw-hide pinions and from the counter-shaft to the rear road wheels by sprocket wheels and chains. A two-speed gear controlled by friction clutches is fitted on the counter-shaft. The controller is arranged to give three forward and three reverse speeds—4, 8 and 16 miles per hour—while an extra-special speed—18 miles—is provided, controlled by the heel of the foot, for quick manœuvring in traffic. The road wheels have wooden spokes and solid tires. Two brakes are provided—a band brake operated by a foot pedal, and acting on the differential, and shoe brakes controlled by a hand lever on the rear wheels. The weight of the Clift car complete is 25 cwt.

An addition has been made to the stand of the Crowds Accumulator Syndicate, Ltd., Bridge Place, Eccleston Place, London, S.W., in the shape of Armstrong's electric parcel



FIG. 17.—THE CLIFT ELECTRICAL VICTORIA.

carrier. This is a light four-wheeled vehicle fitted with a small battery of Crowds accumulators. A seat for a driver is arranged at the rear, the chest being in front.

The Joel Electric Carriage Motor and Battery Syndicate, Ltd., E.C., have an exhibit of interest to the electrical engineer. Prominent on the stand is the electrical brougham illustrated and described at length in our issue of March 17th last. The car weighs complete about 20 cwt., including a battery of accumulators weighing 8 cwt. There are two 2-h.p. motors; three speeds, 4, 8 and 12 miles per hour are provided, as also reverse motions, while the car can run a distance of thirty miles on one charge. Another exhibit is Joel's standard elastic frame, fitted with motor and transmission gear, to which any type of body can be attached. The Joel Company are arranging to supply this type of frame, with motor, etc., attached, to carriage builders, so that the latter may fit their own "bodies." One of the Joel electro-motors is also to be seen on the stand; it is of 2 h.p. and runs at 600 revolutions per minute, the weight being only 112 lb. The motor, which is reversible, is guaranteed to have an efficiency of 80 per cent. Another speciality of this concern is the Rosenthal battery, which is claimed to be exceptionally light, having regard to its output—the weight per cell being 22 lb. and the output 140 ampère-hours at 20 to 40 ampères discharge rate. The plates are of the perforated pasted lead type, giving  $17\frac{1}{2}$  watt-hours per lb. of plate. The cells are made up in trays of nine, so as to be easily handled.

Mr. Percy H. Frost-Smith, of 68 Coleman Street, London, E.C., is present with an electrical dog-cart on the Riker system. The car is provided with a 3-kilowatt electro-motor and has three forward speeds ranging from 2 to 12 miles per hour, and three backward motions. The feature of the car is, however, to be found in the battery, which consists of forty cells of a new type of accumulator, known as the H. and H. The cell, which has a capacity of 100 ampère-hours, is constructed on the pasted plate method and weighs, including the acid and the rubber case,  $32\frac{1}{4}$  lb., the total weight of the battery of forty accumulators being given as 1,378 lb.

Mr. G. Hopkins, Clun House, Surrey Street, Strand, London, W.C., exhibits an early type of Serpollet steam carriage, arranged to seat four persons. The car is of the 1897 type, many improvements having, however, since been introduced by Mr. Serpollet in his steam-propelled vehicles.

The Whitney Steam Wagon Co., of Boston, U.S.A., show one of their light steam-carriages, the first one of the kind to be seen in England. Some brief particulars of the car will be found under "Comments" in another column of the present issue.

A very ingenious variable-speed gear is that which is shown by Mr. Ralph Lucas, of Upper Siebert Road, Westcombe Park, S.E. The device, as will be seen from Fig. 18, consists essentially of two pulleys automatically expanded by springs, each driving by belts on to an intermediate twin pulley, so that by shifting the position of the twin pulley, relatively to the two expanding pulleys, the one is allowed to expand while the other is forced to contract in diameter; so changing the ratio of their diameters, thus giving a change of gear. The intermediate twin pulley is carried on a spindle, which in turn is mounted on pivoted levers, so that the pulley can be moved either forward or backward, either by a hand lever or screw. The first experiment in developing the device was, we learn, to make up a pulley in segments which parted as the pulleys expanded. With this method, however, the belt made a great noise in striking the segments one after the other when the pulleys were run at a high speed. A way had then to be found to envelop the pulley with a ring which would give good belt service and at the same time would run silently. This has been done by making up a ring of lattice work in steel lazy-tongs fashion, in such a way that the strips on which the belt lie arrange themselves helically, so preventing the noise due to the belt striking each segment separately. In order to keep this ring in a uniform circle and capable of being

uniformly expanded and contracted from any point round the circle by applying pressure, the ring is mounted on a series of supporting bars, which are controlled by a system of toggles. One end of each of the latter is fixed to a star plate free to revolve on the shaft of the pulley, the other end of the toggles being attached to the supporting bars, the end of which slide in radial slots in plates fixed to the shaft on the

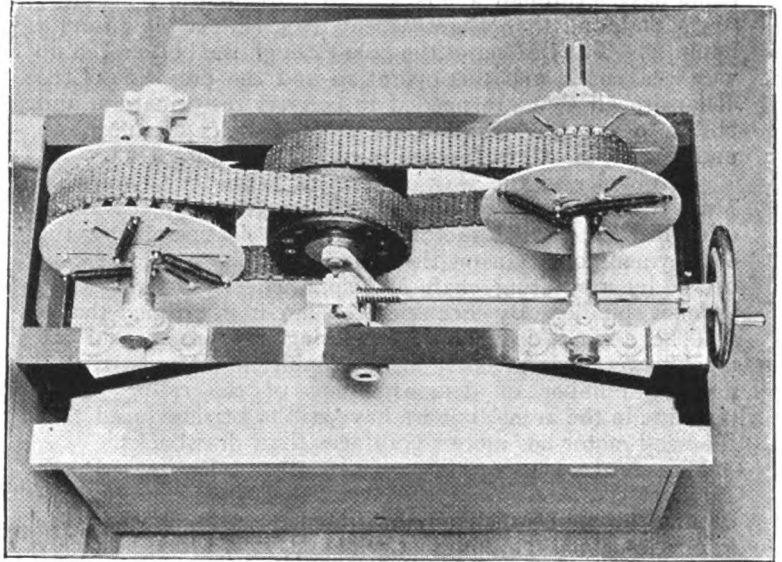


FIG. 18.—THE LUCAS VARIABLE SPEED GEAR.

two sides of the lattice. These slots act both to take the drive of the belt and to complete the toggle action; thus by revolving the star plate relatively to the radial slotted plate the toggles slide the supporting bars up the radial slots, so expanding the pulley. This function is performed by six tangentially-arranged springs. A further use of this gear is obtained by placing stops on the driven pulley near the full extent of its range, by means of which the driven pulley reaches the limit of its expansion before the driving pulley has reached its minimum. The result of this is that as the driving pulley is finally being reduced down to its smallest diameter the driven pulley reaches the stops, so ceasing to keep the belt tight and performing the function of a friction clutch for starting and stopping by allowing the belt to slip. The pulleys—driver and driven—are arranged to expand from 6 in. to 1 ft., and have a range of speed variation from *nil* up to 4 to 1. Not only does the device act as a variable speed-gear but it provides an automatic belt tightener and also obviates the use of a friction clutch. The gear is undoubtedly ingenious, and has attracted considerable attention at the exhibition.

A new safety lock-nut bolt (Fig. 19) forms the exhibit of the Evinof Safety Lock-Nut Bolt Co., Ltd., of 94 Victoria Street, London, S.W. That a simple locking arrangement

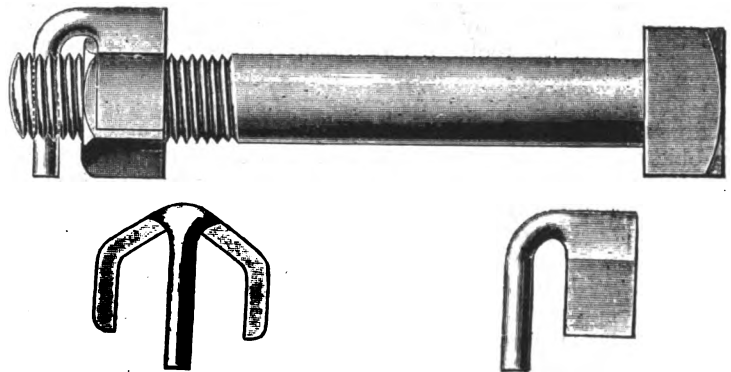


FIG. 19.—THE EVINOFF SAFETY LOCK-NUT BOLT.

is a desideratum no one acquainted with engineering can deny, for the places where such a device will prove useful



are exceedingly numerous. In motor-vehicles in particular a simple and comparatively inexpensive locking arrangement for bolts should prove invaluable. The new safety lock-nut bolt is the invention of Dr. Evinof, and, briefly described, consists of a pin and collar of mild steel. The pin and collar are in one piece. The collar or clip fits over the nut when screwed well home, and is immovably fastened by the pin being passed through a hole drilled through the bolts close to the end, and then slightly bent over with a blow from a hammer. The drilling of the hole through the bolt end in no way weakens it, and this operation and the provision of the collar are all that are needed to convert the usual nut and bolt into a safety lock-nut bolt. The bolts are now, we understand, in extensive use for a variety of purposes.

A novelty in the way of bicycles is the one shown by Mr. W. Bettis, 48 Arthingworth Street, Stratford, E. It is described as a wind motor-bicycle, the feature being the employment of a fan on the "head" of the machine, connected by a rotating shaft and spur wheels to the bottom bracket spindle. By means of the fan it is claimed that a stiff head-wind, instead of hindering the progress of the machine, is made to assist in its propulsion. Mr. Bettis has given a number of demonstrations of the riding of his machine in the arena, but we have still to be convinced that the wind-motor has more advantages than drawbacks.

Messrs. Lawrence & Co., Ltd., of 132 Latimer Road, London, W., are showing the Grouvelle-Arquembourg water-cooling tubes, of which an illustrated description was given in our issue of June 16th last. This device, which is largely used on motor-vehicles in France, is made with pipes of two sizes. For motors indicating up to 8 h.p., pipes 15 mm. internal diameter are employed, the length of the serpentine required being 2 metres per h.p. of the motor; for motors above 8 h.p. a serpentine with pipes 18 mm. diameter is made and recommended, the length per horse-power being only 1.35 metres. The radiating plates, which can be either of iron or aluminium, as desired (the latter affording the advantages of lightness, and the feature that mud does not adhere to them), measure 40 mm. by 40 mm. in the smaller size and 50 mm. by 50 mm. in the large size. The weight of the serpentine is: Small size, with iron radiating plates, 2.8 lb. per metre; ditto with aluminium plates, 1 lb. 14 oz.; large size, with iron plates, 4 lb.; ditto with aluminium plates, 2 lb. 11 oz. Messrs. Lawrence, who are the sole licencees for these tubes in Great Britain and Ireland, claim that by means of this water-cooling apparatus it is possible for a petroleum motor-car to be driven a distance of 200 kilometres at an average speed of 20 kilometres (12½ miles) per hour without it being necessary to take in a fresh supply of cooling water. Messrs. Lawrence are also exhibiting specimens of the Velox pipe joint, in which the use of solder or brazing material is obviated. The joint is made metal to metal, no packing being required. The pipes are simply squeezed one against the other, and in this manner an absolutely tight joint even under very high pressures can, it is claimed, be made. The pipes can be easily disconnected and connected again. The joints are made by forming a collar at the ends of the pipe with suitable tools, before doing which the flanges or unions are slipped over the pipe and afterwards screwed up.

The North British Rubber Company, Ltd., Castle Mills, Edinburgh, are present with a display of their well-known solid rubber tires for motor-vehicles, and also Clincher pneumatic tires for cycles. This Company are also now introducing a pneumatic tire of the Clincher type, suitable for light motor-cars, specimens of which are to be seen at the stand; an illustration of this stand is given in Fig. 20.

Mr. William Howard, 13 Theobald's Road, London, W.C., has on view several sizes of a steel-protected pneumatic tire, which is made in several forms suitable for light cars weighing about 5 cwt. up to 4-ton vehicles. The felloe of the wheel is surrounded by a steel rim, with ridge projecting outwards, shrunk on in the usual way and also retained by bolts. The wearing surface of the tire consists of a second steel rim, with a similar projecting ridge, having two grooves

or recesses running circumferentially on its inner surface. The pneumatic tube and its covering occupies a position between the two steel rims, and consists of a vulcanized rubber tube, covered by a double canvas lining, waterproofed on its inner surface. The tube and the lining are unattached. The tube is again protected by a second double canvas lining and finally by a thick hand-sewn cover of hide, which forms the outside of the flexible part of the tire. Close to the free edges of the outer hide covering (which open outwards) holes are bored at equal distances to receive lacing. Next to these holes stout strings or bands of leather of double or treble thickness are firmly attached by rivets. These when in position exactly fill the grooves or recesses in the outer rim. The edges of the hide cover and the enclosed linings are brought together, and the whole secured by cord lacing. The tire when inflated secures itself firmly by pressure to the outer rims, the outer one being locked and held in position by this means; but in order to prevent any possibility of its being accidentally detached by a sudden and heavy shock, the outer rim is fixed to the leather bands of the leather cover by screws. The first canvas linings, together with the hide cover, are themselves secured by means of short bands of iron, which are firmly retained in position by bolts, which pass through them, the inner rim and felloe of the wheel. A tire of this type has been successfully used for some time on the wheels of an omnibus in London.



FIG. 20.—THE NORTH BRITISH RUBBER CO.'S STAND.

Messrs. Smith, Parfrey & Co., Ltd., of 141 Buckingham Palace Road, London, S.W., make a large display of wooden road wheels, of which they make a speciality. These range from wheels for light phaetons up to 'bus and heavy wagon wheels. The wheels, which are fitted with both solid rubber and iron tires, are used by several motor-car builders in this country, as also on many horse-drawn omnibuses.

Collier's Twin Tire Syndicate, of 15 Walbrook, London, E.C., exhibit a new tire for motor-vehicles and cycles. It consists of a combination of the pneumatic and solid tires, the pneumatic being between the wheel and the solid rubber, but both the pneumatic tube and the solid rubber tire are contained in one piece of fabric, or outer cover, by which great strength and durability is stated to be obtained. The advantages claimed for the tire are (1) freedom from puncture, as the pneumatic tube is kept well off the ground, and (2) narrow tread, the twin tire being deep without being broad.

The main feature of the exhibit of M. L. Bleriot, of



42 Rue de Richelieu, Paris, is a large acetylene lamp specially arranged for use on motor-cars. The lamp, which is the invention of Messrs. Letang & Serpollet, weighs 15½ lb., and with one charge of carbide will give a continuous light of 50 candle power for eight hours. The lamp throws a light a distance ahead of no less than 150 metres and a width of 8 metres. The Blieriot lamp is very largely used in France, being employed by all the principal members of the French automobile world, including such well-known racing men as Charron, De Kynff, etc., and when its merits become known in this country will no doubt be largely used by English automobilists.

## “MY FIRST EXPERIENCE WITH A MOTOR.”

By AN AMATEUR.



I SHALL not soon forget it. I did not take any lessons in the art of moting, simply because I had no time; business was too pressing. I only went up to London to see the thing and buy it, and then set to work in my spare moments at home to learn the mysteries of the machine by experience (a hard task-master) and the aid of a little guide book supplied by the makers.

After a few rides up and down a pleasant level road, I considered myself a first-class motist, and began advising my acquaintances to “mote.” “Nothing to equal it—glorious! A lady could manage the car after about an hour’s teaching!” (So says the guide book). At the same time I was finding little phases in the behaviour of the car that I never dreamt of at first; for instance, it would pant, and jerk, and pant, and then stop without any instructions to do so, and without any cause that I could see, and of course along that part of the road where a few big houses with big people were; and some friends always found it convenient to be abroad at that time in that particular spot. Of course I had to get off; and if I had been foolish enough to bring any of my family I had to make them hop down while I lifted the back seat in order to gaze upon the “internals” and see what was wrong—that is, if I *could* see, for sometimes it seemed beyond mortal ken to discover the why and wherefore of the obstinacy.

Often it took a long time. It bothers a man to have a family continually harping on one string—“What’s the matter, father? Won’t she go?” and sometimes I longed earnestly for the seclusion of my back garden, where I might fight the matter out with the fly-wheel alone. And the motorless friends who always managed to whizz past at these awkward moments, on their bicycles, their horses, or their feet, bothered me with their loud “Good evening, Mr.—!” Some went quickly and called “Don’t blow up!” Some went slowly and said “Enjoying it, Mr.—?” and some inquisitive ones said “What’s the matter? Can I help you?” It was no use picking hedge roses or admiring sunsets to allay suspicion, for they stayed there, and even asked to “see the works going.”

Nevertheless I got on pretty well, and didn’t give up courage. In my ignorance I never dreamt of oiling springs and valves well on these occasions, and quite forgot that electric currents could be disturbed by foreign contact. I ignored (unwittingly) the facts that oil in the carburettor three days old could be *flat*, or electric wires could get loose, or that water supplies could run short. And, now, when I come to look back on it, I find that I tried to take pleasant runs with the oil and water gauges turned off, as they were, in the stable—that was forgetfulness, through having no one to remind me.

So I blamed the “mixture,” and when accidents happened set one of the family in the front to twirl the pointer from gas to air, from air to gas, and half-way between, an inch this way and half an inch that, in the hope of arriving at the right mixture, while I everlastingly tugged at the obstinate fly-wheel.

At last, one fine morning—I couldn’t find anything wrong with the car (I don’t know if there was much right)—I said to a special friend of mine who lives next door, “Come for a spin?” And the brave man came, and trusted himself with an *experienced* motor-car driver like myself.

Well, we really intended to run up and down the road till lunch, but everything went so nicely (no pistol-shots or other emotional sounds from within) that we decided to go for a longer ride. It was my first attempt of the kind. Of course, the thought of sufficient oil or water, or anything else, never suggested itself to my mind. The guide book did not inform us as to the time that a charge would last. I was learning in the school of experience and was in the infant class, so may be excused. Mine was a Benz dog-cart—a little beauty. I had cleaned the carcass that morning, and was quite proud of the outward appearance. That was enough. What the inside meant to do I did not know.

We made for the next town, about eight miles off. All went well. We cut a dash in the principal streets there, went at a good pace, and enjoyed ourselves so much that we tackled the high road to another town about twenty miles or more away. We thought of having dinner at a small village midway, but eventually decided to run straight on, as everything seemed so delightfully easy, and Providence was still kind. About a mile and a half outside the town we were making for, the machine began to slow down without any apparent cause, and in a few minutes came to a full stop. We both got down to inspect everything that we thought might want attention, and discovered the whole affair to be almost on fire, both oil and water having run short.

Out came the miserable little guide book (for I never ventured outside my own gate without it), and after perusing the numerous instructions for half an hour I concluded that I must take off my coat and get on my back under the car to try my “prentice hand” at engineering. The guide book informed me that on such occasions all nuts, etc., would need tightening. So I set to work (on my back), to the amusement of the public in general, and after a short but warm time I assured my friend that it was all right, and only needed oil and water. For this we started on foot to the town, leaving the motor in the care of the road mender, who (kind friend) happened to be there at his work.

We had our dinner, which we needed, and returned with a supply of oil. The water we got at a cottage near by. Imagine our astonishment when, having replenished and settled the thing as well as we were able, we could not get her to move an inch. Of course, I didn’t understand then that I had run the machine perfectly dry, burnt all the packing, and otherwise injured it, and that, under the circumstances, it was not likely to work. The so-called “guide book”—worn almost to a shred from constant perusal—instructed me in the remedies for these accidents, but never even whispered how to prevent them.

In the end, my friend and I had to hire the services of a butcher boy passing in his cart to tow us into the town. This we entered in triumph(?)—seated in state in our motor tied by a long rope to the back of the butcher’s cart, trying to look as though we had but been experimenting with the machine in some workshop in the wilderness. Of course the butcher smiled (he enjoyed it—so did his horse, I think), and, of course, we met plenty of people, and a whole rank of smiling “cabbies,” but we had to put the most dignified face we could on it, and take no notice of the horsey ones. We lodged the car at an inn and returned to our homes by train—an ignominious return, but we managed it after dark. I had a mechanic sent out next day to re-pack the cylinder, etc., and bring the car home, while I set myself with renewed vigour to the study of the guide book. I did not give up because my ignorance led me into such scrapes. Motoring is fascinating, and since I learnt to understand the machine I have had many long rides in it, for days together, over all sorts of ground. So my advice to beginners is: Don’t think you will get along so well with a guide book and no teacher.

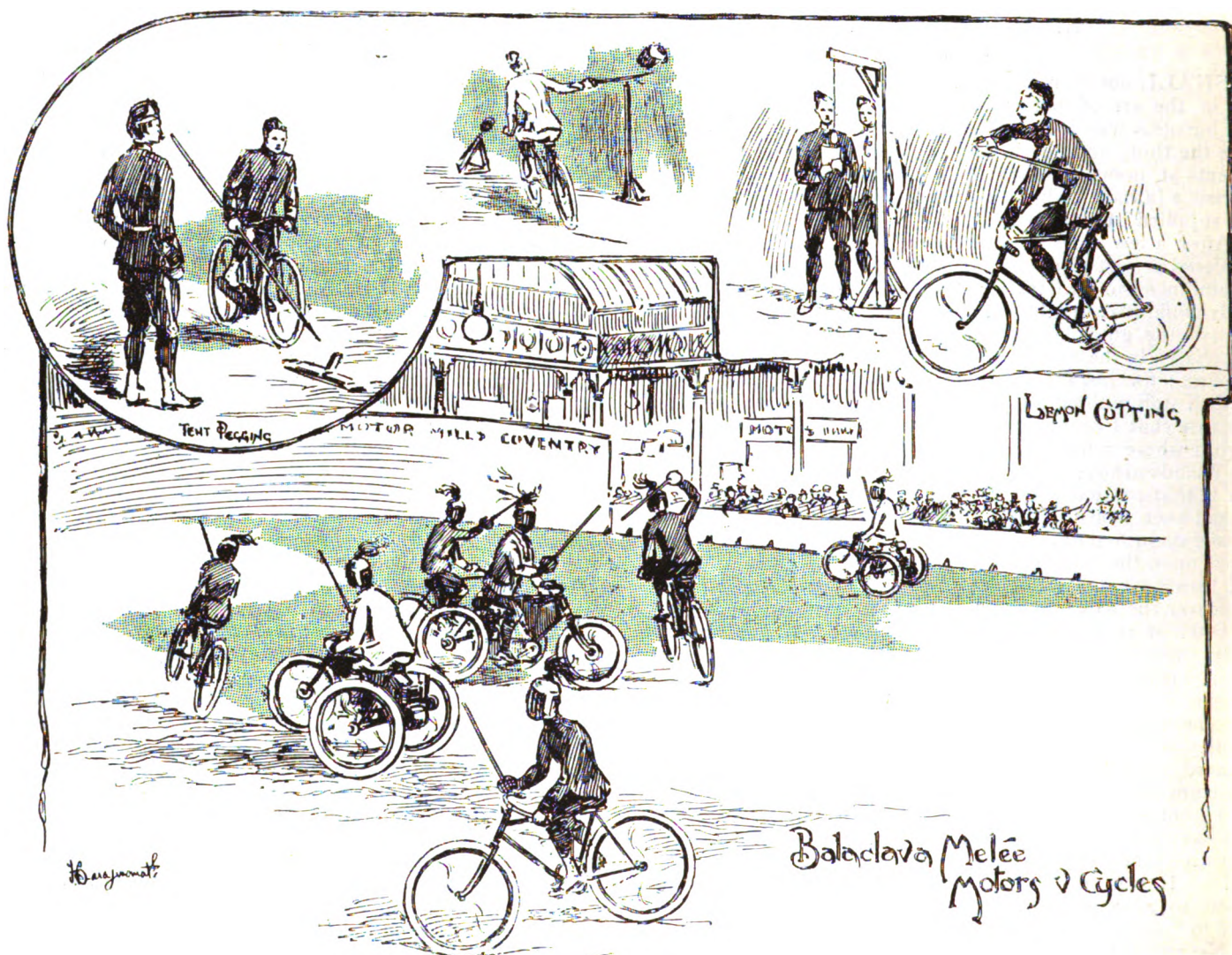
## THE EVENING SPORTS AT THE MOTOR-CAR EXHIBITION.

**I**N connection with the above show a series of very successful tournaments have taken place every evening, and considering that this is the first thing of its kind that has ever been held in England we think the Committee has every reason for congratulation upon the results. Competitions have been held for carriages, which were steered up and down the arena through a number of figures, some very excellent steering being shown. The Electrical Undertakings, Limited, entered a very pretty little carriage which has been very skilfully handled, as has also the Hon. C. S. Rolls' Panhard & Levassor car. The tricycle steering has

bicycle v. motor causing much excitement. In the first race the bicycle won, but in the second the motor got in first.

Up to the time of going to press the principal winners have been as follows:—Car steering—Electrical Undertakings, Ltd.; Hon. C. S. Rolls; Benz. Tricycle steering—heads and posts, and lemon cutting—C. G. Wridgway, C. Jarrott, Hon. C. S. Rolls, and S. Farman. Dismantling—C. Jarrott.

The *finale* each evening has been a Balaclava melée, which members of the Volunteer cyclist corp and motorcyclists have taken part, their skilful riding eliciting hearty applause and adding much to the pleasure of the spectators. Some idea of this event, which will be repeated to-night (Friday) and to-morrow (Saturday) for the last time, may be gleaned by the sketch made by our artist.



THE EVENING SPORTS AT THE EXHIBITION.

proved very interesting, such well-known men as Messrs. C. Jarrott, C. G. Wridgway, Hon. C. S. Rolls, and B. Banks taking part. Another practical competition of considerable interest has been the dismantling of tricycles, the competitors having to take off the trembler, unscrew the platinum-tipped nut and disconnect all the electrical wires; they then had to connect them up and race round the arena, the first home being the winner. In the heads and posts and tilting the ring the motorists have every reason to be pleased with themselves, for they have handled their swords in quite a military manner. A Volunteer cycle corp has also given a very interesting display of lemon cutting, tent pegging, and heads and posts each evening. Although the space for racing was rather limited, some interesting contests took place, that of

The duties of judge each evening have been undertaken by Mr. F. F. Wellington, and the programme carried out under the capable direction of Mr. Frank Eason.

WE learn that Mr. T. Roland Outhwaite, Secretary of the Edinburgh Autocar Co., Ltd., has placed an order for a special Stirling-Pennington car, which is guaranteed to attain a minimum speed of twenty-seven miles per hour on the level, and is specially constructed to run over 130 miles without a stop. We understand that Mr. Outhwaite has designs on establishing some long-distance records in Scotland.

## THE MOTOR-CAR JOURNAL'S "COMMERCIAL EFFICIENCY" TRIALS.

—8—

IN connection with the Motor-Car Exhibition at present being held at the Agricultural Hall at Islington, a series of "Commercial Efficiency" trials of motor-vehicles is this week being carried out. The trials do not partake of the nature of "races," speeds of travel being only regarded as a minor point in determining results. The conditions of the trials have already been published in this Journal, but it may be mentioned that the principal points which will be taken into consideration in making the awards will be the following:—

Ability of the vehicle to run a given distance (according to class and type) out and home each day for *three consecutive days*, within the limits of a maximum and minimum given time for each class, without effecting repairs or reparations, and only having those adjustments made that may be necessary and strictly within the capabilities of an ordinary motor-car driver, without the aid of other appliances than the customary tool kit supplied with each car according to specification. It is not made an essential condition that the amounts of spirit, oil, and water, coal, coke, or electric current should form any criterion in making the awards. It is essentially a feature of the competition that no vehicle shall travel at a greater average speed than that permitted by law for each class of vehicle. A compulsory stop has been arranged as nearly as possible to mid-distance of the run.

The trials were divided into fifteen different classes, so as to include every type and size of motor-vehicle, and so great has been the interest taken in the trials that entries in nine different classes have been received. A start with the tests was made on Monday, when vehicles in three classes were started, altogether six vehicles leaving the hall; on Tuesday ten vehicles participated, while on Wednesday fifteen cars of different types were out on trial. In Class 1—"parcel vans propelled by petroleum-spirit motors and designed to carry a minimum load of 15 cwt. and two persons"—two vehicles, up to Wednesday, have competed. The route was to Welwyn and back, fifty miles, the minimum time allowed being 6 hours, the maximum 6½ hours, with a compulsory half-hour stop at end of journey. The results up to Wednesday evening are as follows:—

### CLASS 1.

Time occupied  
between  
leaving Hall  
and return.

| Name of Entry.                     | Day.        | Time occupied<br>between<br>leaving Hall<br>and return. | Observer's Report.  |
|------------------------------------|-------------|---|---|
| Motor Mfg. Co., Ltd., Coventry.    | 1st (Tues.) | 7 h. 1 m.   | Slow up hill, even on first speed. Stopped on return journey 5 min. to replenish petrol tank. |
| Do.                                | 2nd (Wed.)  | 6 h. 21 m.  | No incident.  |
| Daimler Motor Co., Ltd., Coventry. | 1st (Wed.)  | 6 h. 19 m.  | No incident.  |

Class 6, which is devoted to "pleasure carriages designed to carry not more than two persons, actuated by steam or petroleum-spirit motors, and carrying a full load during the trials," brought the largest number of entries, no less than six vehicles competing. The route in this case was from the Agricultural Hall to Baldock, *via* Hatfield, and back, a total distance of seventy-two miles. A compulsory stop of one hour at Baldock was required, and no car had to take less than 7 hours or more than 7½ hours for the journey. The times of the competing cars in this class are shown below:—

### CLASS 6.

| Name of Entry.                                   | Day.        | Time Occupied. | Observer's Report.   |
|--|-------------|----------------|--|
| Star Cycle Co., Ltd., Wolverhampton (No. 1 car). | 1st (Mon.)  | 8 h. 48 m.     | Frequent stoppages, both on outward and return journey, owing to motor over-heating. |
| Do.  | 2nd (Tues.) | 7 h. 48 m.     | Stopped once each outward and return journey for water.                              |
| Do.  | 3rd (Wed.)  | 7 h. 25 m.     | Ditto.   |

| Name of Entry.   | Day.        | Time Occupied.          | Observer's Report.  |
|--|-------------|-------------------------|---|
| Star Cycle Co., Ltd. (No. 2 car).                        | 1st (Mon.)  | (See Observer's Notes.) | Exhaust pipe required attention outward journey, 17 min. delay. Return journey a tire burst at Finchley, where car had to be left.  |
| Do.  | 2nd (Tues.) | 7 h. 48 m.              | Stopped once on journey each way for water.   |
| Do.  | 3rd (Wed.)  | 8 h. 19 m.              | Outward journey no incident. Return journey, accumulators gave out at Finchley.   |
| Daimler Motor Co., Coventry (Critchley car).             | 1st (Tues.) | 8 h. 33 m.              | 85 min. delay outward journey owing to belt-joint breaking, tire burst, and extinguishing of lamps. Return journey, 25 min. delay owing to belt-joint breaking, and water-pipe leak.                  |
| Do.  | 2nd (Wed.)  | 7 h. 36 m.              | Several stops owing to trouble with water circulation and pump.   |
| Marshall & Co., Manchester. (Hurtu car).                 | 1st (Tues.) | 7 h. 14 m.              | No incident.  |
| Do.  | 2nd (Wed.)  | 6 h. 49 m.              | Stopped once on outward journey to oil up and for water. Return journey, one stop for water.  |
| London Autocar Co. (Hurtu car).                          | 1st (Wed.)  | —                       | Had not returned at 10 p.m. owing to tire troubles.   |
| The Automobile Association, Notting Hill. (Cambier car). | 1st (Wed.)  | —                       | Car only got as far as Liverpool Road, Holloway, when in turning corner sharply vehicle skidded, dragging off a tire, and slightly damaging a wheel. Car returned to Hall without completing journey. |

In Class 7—"pleasure carriages designed to carry not less than four persons, actuated by steam or spirit-motors, and carrying a full load"—there were three competitors. The route was the same as in Class 6. Appended are the results to Wednesday:—

### CLASS 7.

| Name of Entry.                        | Day.        | Time occupied. | Observer's Report.   |
|---------------------------------------|-------------|----------------|--|
| Motor Mfg. Co. (4-seated dog-cart).   | 1st (Tues.) | 9 h. 38 m.     | Vehicle slow all outward journey, especially up hills; three stops, 5 m. for burners, and two stops for steering gear. |
| Do.                                   | 2nd (Wed.)  | 7 h. 16 m.     | Everything satisfactory.   |
| Motor Mfg. Co. (Iveagh phaeton).      | 1st (Mon.)  | 6 h. 59 m.     | No stop, no incident.  |
| Do.                                   | 2nd (Tues.) | 7 h. 9 m.      | Stopped three times—10 m. steering gear, 2 m. carburettor, and 4 m. ignition tubes.                                    |
| Do.                                   | 3rd (Wed.)  | 7 h. 0 m.      | Everything satisfactory.   |
| Daimler Motor Co. (Knighly Victoria). | 1st (Mon.)  | 6 h. 52 m.     | No incident.   |
| Do.                                   | 2nd (Tues.) | 7 h. 3 m.      | Do.  |
| Do.                                   | 3rd (Wed.)  | 6 h. 55 m.     | Do.  |

In Class 8—"pleasure carriages actuated by electricity designed to carry not less than two persons,"—only one vehicle started up to Wednesday, but several cars were fixed to start in this class on Thursday. The course was to Bell Bar and back, a distance of 31½ miles. Maximum time allowed 3½ hours, minimum 3 hours, including half-hour compulsory stop. Results are appended:—

### CLASS 8.

| Name of Entry.  | Day.       | Time Occupied. | Observer's Report.       |
|---|------------|----------------|--------------------------|
| Mackenzie Carriage Works, London, S.E. (2-seated electric car). | 1st (Wed.) | 3 h. 43 m.     | Everything satisfactory. |

Class 10—"Motor-vehicles of any design, such as a light omnibus, wagonette, carrying a minimum of eight persons including driver." Three vehicles have competed. The



course was to a point  $1\frac{1}{2}$  mile beyond Welwyn and back, a distance of 50 miles:—

## CLASS 10.

| Name of Entry.                            | Day.        | Time Occupied. | Observer's Report.   |
|---|-------------|----------------|--|
| Motor Mfg. Co.<br>(8-seated wagonette)    | 1st (Mon.)  | 5 h. 52 m.     | No incident.   |
|   | 2nd (Tues.) | 5 h. 55 m.     | Everything satisfactory.   |
|   | 3rd (Wed.)  | 6 h. 16 m.     | Do.  |
| Daimler Motor Co.<br>(8-seated wagonette) | 1st (Mon.)  | 7 h. 24 m.     | Car went to Baldock instead of to near Welwyn—72 miles instead of 50 miles.<br>(See Observer's notes.) |
| Do.                                       | 2nd (Tues.) | 6 h. 3 m.      | No incident.   |
| Do.                                       | 3rd (Wed.)  | 6 h. 4 m.      | Do.  |
| Motor Mfg. Co.<br>(chairs-a-banc)         | 1st (Wed.)  | 8 h. 50 m.     | Tire came off 5 minutes after start. Ran short of oil on homeward journey.                             |

As already mentioned, the trials are attracting considerable attention both on the part of motor-car builders and of those interested in automobilism generally, and should do much to prove that motor-cars are not only possible but are practical and efficient vehicles. Full particulars of the remaining tests, as also of the awards, will be given in our next issue. The competing vehicles have, of course, been despatched with a full complement of passengers. No small difficulty was experienced in the early part of the week in obtaining the requisite number of persons to undertake these long trips at practically a moment's notice, but each and every one have come back delighted with their run and anxious to participate in the subsequent days' trials.

## MIDLAND MOTOR NOTES.

By "VERAX."



## The Motor-Car and the School Board Election.

THE car referred to in your last issue was a Benz dog-cart, and was the property of Mr. A. Valintine, of Leamington. He kindly lent it, and drove it for the purpose of bringing voters in from an outlying parish, and who would certainly not have come by other means. The car was lent in the interests of the Church Party, and more especially to canvass for a new vicar, who had only been installed a few weeks previous to the election. The result of motoring so many voters brought the new vicar out at "the head of the poll." Between the hours of 6 p.m. and 8 p.m. the motor made eight visits to the polling booth, the distance to and from the picking-up point being very close on three miles. A horse conveyance was also used, but this only made two journeys in the same time. The voters carried on the motor numbered during that two hours 24, by the horse conveyance for the same time 5! The remarks of some of the astounded voters as they "journeyed to the poll" were very funny. One in particular, who was sitting next to Mr. Valintine, after being asked repeatedly what he thought of motors, at last plucked up his courage and replied, "*Them be a-all right if them be sa-afe.*" However, this gentleman safely recorded his vote, and also returned safely home, much to his gratification. The moral is obvious. If you have a number of people to be conveyed from place to place in a limited time, use a well appointed motor-car.

## Special Motors for Special Districts.

THERE is no doubt that motor-cars would gain public confidence very much quicker if the people who handle them would only consider the elementary laws of nature and mechanics. And this is especially the case when a "motor-car service" is proposed. A car of a certain gear which will run very satisfactorily in fairly flat country will not run at all successfully in a hilly country, and if put to do so will certainly do anything but gain the public

confidence. Now, this is not the fault of the motor at all, but simply of the man responsible for giving it impossible tasks. Let us consider for a moment our locomotives, which undoubtedly are the finest in the world, and what do we find? Firstly, the "fast express" engine with its large driving wheel, or, in other words, "high gear." This class of engine runs at a high speed, and can maintain it when once going as long as the road is fairly easy, but a "stiff bank" of 1 in 30 about four miles long would stop her (of course, there is, metaphorically speaking, only one gear on a locomotive), and once stopped in such a bank she could never start again without the use of a "bank" engine; and it is for this reason that so many various types of locomotives are to be seen, each and all adapted for their various duties. In fact, the "road" has to be carefully considered, and an engine designed to satisfactorily negotiate that "road," whether for express, heavy passenger, or goods traffic. In the same way with a motor-car, the district in which it is to run should first be carefully surveyed, all gradients measured, and the builders of the car should then have these data laid before them, and they can supply for that particular district the car most suited as to gear and power to negotiate it. We have on our railways a locomotive type known as the "mixed locomotive," that is an engine capable of dealing with all classes of traffic, but it cannot be said to be either an express or a heavy goods, and cannot do the work of either of these thoroughly efficiently. And so with the motor: it is impossible to make one to "do everything," so to speak. What is really wanted is a standard type of motor with various gears (petrol motors) interchangeable, so that a car could be supplied with "*gear according to district*," so to speak. The engine supplied with the car should, of course, also be standardized for two to eighteen people—that is, the passenger capacity should be the guide to the engine power, the nature of district the guide to the gears to be used. This is, of course, at the moment an "idealism," and it will be a long time before such a perfect state of things will exist. However, it seems to me that these are the main points engineers should make for, but, of course, the expense of carrying them out in the first instance would be very great, and will, no doubt, be the chief deterrent to progress in this direction. Though at first sight this may seem to some an impracticable scheme, yet a little careful consideration will show that it is not, if carried out right.

## An Amusing Complaint.

THE following extract from a letter of a Midland owner of a Benz car, who of course must be nameless, strikes me as being a decidedly novel way of describing one's experiences in connection with motoring. The gentleman mentioned is an elderly gentleman, and a keen horseman and sportsman generally, and he certainly has a novel way of describing the vagaries of his motor-car. He says, in the course of the letter: "The only conclusion I could arrive at, as regards the car on Monday, was that the devil entered into it, and the devil at about his worst. However, I have since discovered that it was ill-health and not temper. It started *sulky* in the morning, inclined to jib, and not stepping out free at all. I got it along to Welincote, but it went slow and was evidently not fit. Did not go as far up Bishopstree Hill as usual on the high speed. However, it went there. Coming back it laboured in its stride and seemed tired. I tried various expedients, altering the mixture, drawing benzolene, and so on, but by the time I got to the gas works it stopped, evidently clean beat. At last I shoved it to the gas works yard and wired for you. As you did not come I went up to see it in the evening, and found it rested, and managed to get it home. Then I went out with it again; on the way home it stopped again, too tired to go on. Luckily I had my boy with me. We spent a long time investigating its complaints, and finally decided to change the batteries. Then it was quite dead. Then I cussed it as a car generally, and all its component parts

together with the water, benzolene, and grease. I moved the wires carefully to the same point, but it was too dark to see that the fresh cells were put in *l'other way round*. So we shoved the dead corpse home, amidst jeering boys. This morning I did not have it out—then I had an urgent message in the afternoon. Put wires back to the cells, found it worked, and started off again. It did eight miles all right. Then I wired you again, thinking the *brat* had recovered. Then was wired to go immediately to Kineton. Started off again. Again to my intense annoyance it stopped dead beat four miles out. At last I resolved to change the wires again, and off it went in good style, and brought me home well, and now appears to have recovered its health and spirits. In hot weather I do my work in half the time, with half the fatigue." I have in my time seen some curious references to the sometime unreliability, as it is called, of motors, but I think the above absolutely caps every one of them. It is clear that all the trouble was caused by one set of batteries being run down, and the other set not connected up correctly, hence the term "dead corpse," but I think in fairness to the motor that there was clearly nothing very faulty about that. However, as the public knowledge advances in things "motoral," we shall find no mistakes of this class occurring, and by that time the crowds of jeering boys will have their attention diverted from motors, probably to some horse owner who has been fined for overloading his wagon or *chars-a-banc* to compete with that ever-increasing source of annoyance to him in his trade, the motor-car.

#### Motor-Bicycles.

I HAVE seen one or two of these lately simply flying along the Kenilworth Road. They were, I think, of Humber manufacture, and looked very well finished and did not make too much noise, but they seem, except when they are flying full speed, very unwieldy machines, and in damp weather or when the roads are wet I should imagine from what I have seen and heard of their performances that they would be decidedly dangerous, owing to their great tendency to sideslip. In my opinion they are only suitable for "track" work, or road racing if there is no traffic about. At any rate, they are not likely to become popular.

#### MOTOR CYCLING TOURNAMENT AT NEW BRIGHTON.

ON Saturday last an international motor-cycling tournament, under the rules of the London Motor-Car Club, took place at the Tower Athletic Grounds, New Brighton, attracting 3,000 spectators. The races proved most interesting, and very fine performances were done, Beconnais covering five miles with a flying start in the wonderful time of 7 minutes 37 seconds. The proceedings opened with a preliminary promenade of competitors, the following well-known riders taking part:—M.M. Beconnais, De Meestre, and Ricard, all on Phébus-Aster motor-tricycles; M. Geo. Griet riding a Perfecta-Gaillardet; Mr. S. F. Edge on an Ariel; and Messrs. C. Jarrott and N. Brece riding De Dion tricycles.

In the one mile scratch race, open to the world, the first six of the above competed. In the first heat Jarrott was drawn against Beconnais, the latter winning after a capital race. Edge beat De Meestre and Griete beat Ricard. In the final Beconnais finished first and Edge second.

An attack on the one hour British record of 34 miles 700 yards, held by S. F. Edge, was made by Beconnais and Edge. The former covered 37 miles 485 yards, thus doing 2 miles 1,545 yards better than Edge's previous best, the latter doing 35 miles 470 yards.

In the five miles scratch race, Beconnais just managed to beat Jarrott for first place, although Jarrott, during the race, beat the standing mile record, doing the mile in 1 min. 44 secs.

In the attempt on the five miles, Jarrott, after doing one-third of the mile in 31 seconds, unfortunately had a puncture and had to retire. Beconnais afterwards went out and covered five miles with a flying start in 7 min. 37 seconds.

LA SOCIÉTÉ DES AUTOMOBILES (H. de Riancey) is the name of a company which has just been formed in Paris (3 Place Daumesil), with a capital of £1,200, to acquire and exploit the De Riancey & Gevin *avant-train* patents.

## CORRESPONDENCE.

### LADIES AND MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I suppose now the motor-car is well on the market the manufacturers are anticipating a boom in the trade. Will you allow me, Mrs. Suburban Villa, to give the manufacturers a few hints. I have made several visits to the excellent Exhibition at Islington, and, of course, have been converted to the belief that motor-cars will be the vehicles of the future for London suburban residents in particular.

I certainly should have been pleased to have seen more ladies at the show: for I believe the boom in the trade will commence when the ladies take to motor-caring. I fancy I hear some of the men saying, "O, the ladies cannot manage these things"; but don't let the men be mistaken. We manage *them*, and some of them are more difficult to manage than motor-cars. In fact, we intend to take our place in everything, and as motor-car drivers we are most likely to succeed, if our carefulness as drivers of horses is any guide.

What we want to see are good sound mechanics as agents in the suburbs, not tailors, drapers, and fancy shopkeepers, disposing of motor-cars. We do not want the expense of sending to head-quarters for every little nut or bolt or small adjustment that may be required at times. The trade, too, will do well to place as many machines as possible in the suburbs for hire, for the hiring trade gave a fillip to the cycle boom, and that experience should be repeated with regard to motor-cars.

I am now going for a trip on a motor-car, and will give you my opinion next week as to a woman's capabilities of managing the vehicle.

Yours very truly,

MRS. SUBURBAN VILLA.

July 12th, 1899.

### THE PENNINGTON CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I was very pleased to see the communication from Mr. Edge *re* the Pennington car which was published in your last issue. Being in want of a car, and desirous, if possible, of procuring one built on the best system for ordinary and everyday requirements, and at the same time not too expensive, I visited the interesting Exhibition at the Agricultural Hall in order to try and find out which car was the most suitable for my purpose, and I may say that I ultimately decided to have one of the two-cylinder Penningtons, as these appeared to me to possess many practical advantages which I did not discover in any other system.

I am not a novice in motor-car matters myself, as I had the honour of taking the first motor-car from Bournemouth to Southampton, *via* Lyndhurst, through the New Forest, in August, 1896, which, as you know, was before it was legal to do so.

15 Somerset Place,

Boscombe, Bournemouth,

July 12th, 1899.

I am, yours faithfully,

JAMES SHEPHERD.

MORE MOTOR-CARS AT THE SEASIDE.—Licences for three motor-cars to ply at Lowestoft have been granted to Mr. H. C. Adams by the Town Council; and at Worthing a motor-wagonette has been similarly licensed, despite the opposing petition of the local cab-drivers.

DR. COLOHAN, who made a bet that he would drive his motor-car from Blackrock to Galway and back in twelve hours, has accomplished his task. By mutual consent the course was altered from Blackrock to Kilbeggan and back, a distance of about 130 miles. This was covered on a Benz Ideal motor-car with the third speed, and so the worthy doctor won his £200—considerably more than the cost of the car.



## THE DAIMLER CO.'S EMPLOYEES' ANNUAL OUTING.

THE Daimler Motor Company held their third annual wayzgoose on Saturday last, the destination being Stratford-on-Avon. The men started from the works in brakes about eight o'clock in the morning, the staff following later in cars. The ride was much enjoyed and the whole party, including Mr. John Ware, the secretary of the Company, and Mr. A. J. Drake, assistant works manager, reached Stratford well before the time appointed for dinner. A well-served dinner was provided at the "Swan's Nest" Hotel at 1.30, Mr. Ware presiding in the enforced absence of Mr. Critchley. Dinner over, the toasts were led off by Mr. Needham with "The Managers." He expressed on behalf of the employees their regret at the absence of Mr. Critchley, and stated that it accorded them all great pleasure to have Mr. Ware and Mr. Drake amongst them, and hoped that this would be the forerunner of many more pleasant holidays together.

Mr. Drake responded, saying that he thanked the men very much for their kind remarks and wishes towards himself. He, too, was sorry that Mr. Critchley himself was not present and he was sure that Mr. Critchley regretted not being with them. He had, as they all knew, gone over to Paris to see the new things of their foreign friends, and his absence, of course, could not be avoided.

Mr. Goldthorpe, in proposing the toast "Success to the Daimler Company," said it had been his lot to take part in a good many enjoyable days of this kind, and if there were any that deserved to thoroughly enjoy it was a lot of fellows who had worked together all the year round and had come out for their annual outing. The outing had been up to that point a success and he hoped that the whole day's proceedings would go on without a hitch. With regard to foreign competition, the speaker said there was no doubt that others had the advantage in point of time. Foreign firms had started early and therefore they had to a certain extent an advantage, but he had yet to learn that the foreigners could beat us in any industry and he would not believe it until it was perfectly demonstrated; and if the members present would give a long pull, a strong pull and a pull altogether they would make the Company what it had not been up to now—a financial success.

Mr. Ware was glad to see the enthusiasm with which the success to the Daimler Company had been drunk. He informed those present that the desire and the policy of the directors was to gather round them good and true men, and attach them to the Daimler Company by mutual interest. None of those present knew him, but he had had a long experience in business and had made up his mind that there was a splendid future before them if they liked to take it. If they did not, of course they would not get it. What they wanted was unity of policy. The Daimler Company had the lead and they meant to keep it. They had to be first and not be beaten by any of their opponents, and if they were going to get to that point everybody must work. Mr. Ware assured those present that if he could be of any help he would spare no time or effort, and he was sure that Mr. Critchley was the same.

The party had a good run home in the evening and reached Coventry about 10.30 p.m., having spent a most enjoyable day.

## A FURIOUS DRIVING CASE.

EDGAR PASSMORE LONG, of Seamount Road, Westbourne, was summoned for furiously driving a motor-car at Winton, on June 21st. P.S. Gill stated that at 6.30 o'clock on the evening of the day in question he was on duty in plain clothes in the Wimborne Road, Winton, when he saw the defendant driving a motor-car at the rate of seventeen or eighteen miles an hour. He turned suddenly into Alma Road, nearly running down a lady cyclist. When he was about to turn from the Alma Road into the Waterloo Road he narrowly escaped colliding with two male cyclists. Witness and P.C. Sumner, both of whom were in private clothes, went after defendant as quickly as they could and overtook him when he stopped to do some repairs to his machine. He gave his name and address as Edgar Long, of the "Triangle" Hotel. The address turned out to be incorrect, and he also refused to state what his occupation was. The defendant, in defence, said the car was only a 1½-h.p. machine, and it would be impossible to travel at the rate stated. It was only an old-fashioned car, and he neither saw nor heard any lady cyclist. The car made so much noise that it quite drowned the "hooter." The Chairman said the Bench considered it a very serious case, inasmuch as a terrible accident might have happened and the defendant might have been there charged with manslaughter. He had rendered himself liable to a fine of £5, and they felt they must make an example of him. He would be fined £2 and 4s. costs, but if any other cases came before them they would inflict the full penalty.

It is reported that the Paris firemen are so delighted with their new motor-fire-engine that they "take it out on the least provocation."

THE Consolidated Traction Company, Pittsburg, U.S.A., is about to add to its equipment in Pittsburg an automobile emergency wagon for use on its lines. It has been built by the Pope Manufacturing Company.

## MOTOR-CARS ON THE CONTINENT.

## Motor-Car Construction in Sweden.

FROM Stockholm we learn that works are about to be established at Augustendal, near that city, for the construction of motor-vehicles. The works are expected to be in operation early next year.

## The Moscow-St. Petersburg Motor-Tricycle Race.

THE winner of this race, which was referred to in our last issue, was M. Louis Masi, who made the journey in 26 h. 58 m.

## A French Electrical Fire Wagon.

A SUCCESSFUL trial has been made in Paris during the past week with the electric fire wagon constructed in accordance with the designs of Captain Cordier, captain-engineer of the *sapeurs-pompiers*. The vehicle is arranged to carry six firemen, together with the usual fire-extinguishing accessories. It is expected that the new car will be able to reach the scene of a fire in much less time than the horse-drawn vehicles.

## A Record Long-Distance Electrical Run in France.

THE recent run by an electrical vehicle of the Electrical Undertakings, Ltd., from London to Brighton has apparently excited the envy of the French electro-automobilists, for on Sunday, the 2nd inst., Le Compte de Chasseloup-Laubat, on a Jeantaud vehicle, succeeded in making the journey from Paris to Rouen on one charge of the batteries. The distance is 136 kilometres (84 miles), and the time occupied was 7 h. 15 m. Rouen was reached at 11 a.m., and the vehicle immediately taken to a charging station to recharge the batteries. This was done, and the return journey was started at about 8 p.m., Paris being reached 7½ hours later. *La Locomotion Automobile* states that the battery of accumulators carried weighed 900 kilos. (1,980 lb.) Following on this record comes the news that M. Krieger means to endeavour to drive his vehicle from Paris to Dieppe, a distance of 109 miles, on one charge of the accumulators.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 20.]

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## COMMENTS

### The Close of the Exhibition.

THE Exhibition at the Agricultural Hall, Islington, duly ran its course and closed its doors on Saturday night last. The attendance, which had not been great during the first week, vastly improved during the second, and we believe that if the Exhibition had remained open a fortnight longer really crowded gates would have been the result. The business done during the Show, however, was tremendous, and exhibitors one and all expressed their great gratification, many practically showing their appreciation by booking their spaces for the second Exhibition, which will be held in the same building in April of next year. We may mention that several engineering firms new to the industry have also already booked spaces.

### The "Commercial Efficiency" Trials.

THE "Commercial Efficiency" trials held during the past week have not, alas, turned out as successful as we could have wished, but the result has been to us a saving in the number of gold medals anticipated to be given! When particulars of the trials were first announced we were assured they were too easy, but our answer was that the trials were commercial efficiency ones, and that any vehicle completing the tests was not only commercially possible but extremely satisfactory. Of the cars competing, we were pleased to welcome the advent of the "Princess" (Iden carriage); the "Star" car, which, although failing to obtain a gold medal, did well; the "Hurtu" car (Marshall & Co., Belsize Works, Manchester); and the "Endurance" car, which in five consecutive days did over 400 miles of travelling—surely a test of its efficiency.

### An Unfortunate Accident.

ALTHOUGH the trials were not without their little incidents, nothing of a serious character happened until Friday, when the "Princess" car of the Motor Manufacturing Co. was delayed over two hours owing to an unfortunate occurrence, which, however, it must be stated, was not in any way the fault of the driver of the motor-vehicle. It appears that in driving down-hill near Whetstone the driver of the "Princess" car had to pass a four-horse coach. Just as he was steering to his own side of the road he and the "observer" accompanying him caught sight of an approaching horse-drawn dog-cart, in which were seated a lady and gentleman. When fully 300 yards away from the motor-car the horse suddenly shied, overturning the dog-cart and pinning the unfortunate passengers to the fence. The motor-car was brought to a standstill as quickly as possible, and even then the driver and "observer" of the latter had fully 150 yards to run to get to the prancing horse. After considerable trouble, the horse was got out of the shafts—this being necessary ere the lady and gentleman could be released from their terrible position. A

passing lady placed her carriage at disposal, and the injured persons were conveyed to a neighbouring farm, and afterwards, on the advice of the doctor, to the local hospital. Although the accident is a most regrettable one, from information we have obtained, no blame whatever attaches to the driver of the motor-car, the police, we understand, being satisfied that the speed of the motor-car at the time was not excessive.

### An Incident and Accident.

THE electric-vehicles went through their trials, and several have obtained gold medals. The last of the tests was started on Wednesday with Mr. Cordingley as "observer," the vehicle being an American-built "Riker" with "H. and H." batteries, and owned by Mr. Frost-Smith. The outward journey of fifteen miles was done in 1 h. 24 m., and the return journey seemed likely to be also without incident, until going down the hill by Highgate Station a cyclist suddenly appeared in front of us, wobbled, uncertain whether to go to right or left, and then tried to pass in between our car and another vehicle which we were passing. An accident was inevitable: our brake was jammed hard, the vehicle swerved, caught the kerb, travelled on two wheels for a yard or two, and then the driver and writer were both sent flying over the front of the machine. Quickly picking ourselves up and finding no bones broken, we gazed around, saw the car had turned on its side, one wheel buckled, spokes bent and broken in another; the acid was pouring out in gallons, and the wheels were revolving at great speed. The cyclist was being picked up, having sustained a severe scalp wound, and the sole of one of his shoes was completely stripped off. The accident happened opposite the Winchester Arms, and the landlord did all that a man could do to assist, and performed nobly the work of a "good Samaritan."

### Narrow Wheel Gauge.

WE may mention that before the vehicle started we remarked upon the narrowness of the build of the car, and we also referred in the same way to another American electric car that was on view at the Agricultural Hall. We believe had the car been wider in build it would not have turned over. The injured cyclist was a Mr. Wood, electrician, of Gray's Inn Road, London, W.C.

### Our Trial Track.

THE arena at the Hall was largely taken advantage of, and many machines were purchased as the result of rides round its even and smooth course. The electric vehicles, as usual, shone to perfection, and, according to reports, a number of these "town perfection" cars were sold. The absence of smell and noise in the building was frequently noted, and although the weather was hot outside the magnificent system of ventilation in vogue rendered the Agricultural Hall both sweet and cool day and night.

### The Death of the Czarevitch.

A CONTEMPORARY remarks that it is some relief to find that the death of Czarevitch was not due to a cycle accident, although the excitement of fast riding may have had something to do with it. According to the *Official Messenger*, his Royal Highness, on the morning of his death, went unattended for a ride on a benzine motor-velocipede. Starting from Abbas-Tuman, his Imperial Highness went very fast for two versts, and then turned back. A peasant woman who was passing that way noticed that as the Prince turned the machine round he slackened his pace, and was spitting blood. He then stopped the velocipede altogether and alighted from it, swaying as he did so. The woman ran forward and supported the Czarevitch, asking him, "What is the matter?" His Imperial Highness replied, "Nothing." When the woman offered him some water the Prince made an affirmative gesture, and she bathed his temples and mouth. Death then supervened peacefully and without pain. The remains will be taken to St. Petersburg, reaching the capital on the 25th inst. The funeral will take place on the following day.

### The Parliamentary Motor-Car Record.

At Sir W. D. Pearson's garden party at Paddockhurst last Saturday, M.P.s. were able to indulge in the pleasures of motoring, and probably some Members of the House who then motored for the first time may become enthusiastic devotees of the now fashionable means of locomotion. Meanwhile the Hon. John Scott Montagu holds the Parliamentary record, and his performance on Tuesday should incite Sir Samuel Montagu, Mr. J. H. Dalziel, and other legislator-motorists to greater things than they have hitherto. On Tuesday, Mr. Scott Montagu left his father's, Lord Montagu's place, at Beaulieu, on the skirts of the New Forest, at 5.40 a.m., and reached Clapham at 10.33 a.m., doing the distance of 105 miles in less than five hours, the average pace being twenty-one miles an hour. Legislators may yet be able to live away from town and still attend to their duties at Westminster.

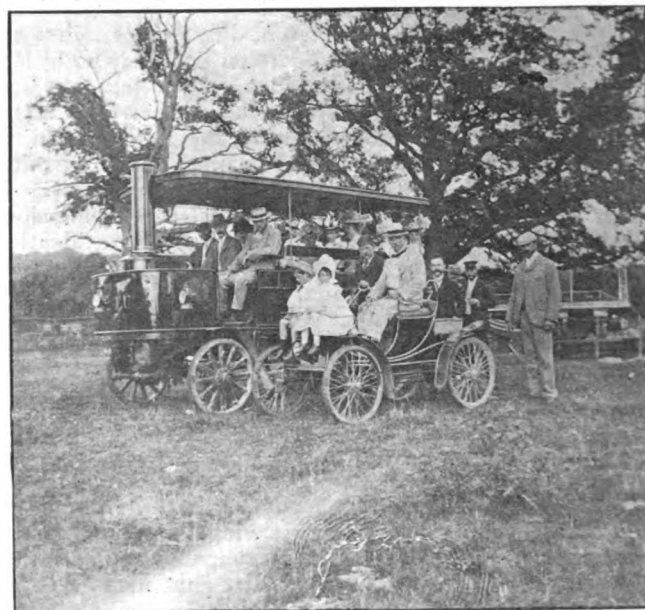
### Motor-Cars and Fashionable Functions.

SIR WEETMAN AND LADY PEARSON on Saturday last entertained a very large gathering of Members of Parliament and other political friends at their beautiful country home at Paddockhurst, Three Bridges, Sussex. The guests were invited to meet the Earl of Kimberley and the Right Hon. Sir Henry Campbell-Bannerman, and nearly 800 ladies and gentlemen accepted the invitation. The guests were conveyed from London by three special trains from Victoria. On their arrival at Three Bridges the party was met by conveyances, in which the four-mile journey to Paddockhurst was made. The vehicles comprised from twenty to thirty four-horse brakes and omnibuses and no less than twelve motor-cars, the latter comprising six coupés and one 'bus from the British Motor Coupé Co., two Daimler wagonettes, two motor-omnibuses of the London Steam Omnibus Co., and the well-known "Lifu" steam wagonette. It is worthy of remark that while the horse-drawn vehicles were taken down by road to Three Bridges on the Friday—necessitating not only a change of horses but also accommodation for two nights for both drivers and horses—the motor-vehicles did not leave London until the morning of Saturday, and returned to town without hitch of any kind the same evening.

### "Dolce far Niente."

LAST year at the close of the Exhibition we arranged a little garden party to Whitton Park, but this year, owing to extreme pressure of work, we were unable to do so, and after being confined within the precincts of the Agricultural Hall for nearly three weeks we were

extremely gratified when Mr. Butler proposed we should visit him on his charming house-boat, "Dolce far Niente," at Bolney Court, near Henley, on the Sunday following the closing day. Mr. Frank Butler, for the moment, is no longer the owner of a motor-car, but we understand he has a Panhard on order, and that it will not be long before delivery is made. Mr. Butler's invitation was conveyed to ourselves and a few friends on the Saturday afternoon about five o'clock, just before he started off on Mr. Whitney's American steam car to Henley. On the Sunday he informed us that he had had an extremely pleasant run down at a good speed and without incident. Mr. House, who was one of the invited, kindly offered his ever-willing "Lifu" wagonette, and personally drove the party, which included Mr. and Mrs. Longhurst, Mr. Hewetson, Mrs. Bazalgette, Mr. and Mrs. Cordingley, and Miss Pursehouse. The meeting was at our



abode in Bloomsbury, and the start was made about half-past eleven. Excepting a stop for water for the vehicle and perhaps lubricants for passengers at Slough, coming and going, there was little or no incident beyond the fact that as we were proceeding through the narrow streets of Maidenhead at a very slow pace, we were twice stopped by policemen putting up their hands. They not saying anything, we proceeded, somewhat disgusted at the unnecessary stoppage. The day was a glorious one, and Mr. Frank Butler exercised that hospitality for which he is so well known, and all his guests had a most pleasant time. We may mention that in the morning Mr. Gretton, of the Motor Manufacturing Company, had been on the house-boat, and in the afternoon Sir Somers Vine, Mr. and Mrs. Roger Wallace, Q.C., and family, and other friends were present.

### An American Consul's View.

IN the course of a report recently sent to Washington by Mr. Rufus Fleming, the U.S. Consul at Edinburgh, he states: "That the motor-cars have a promising future in Scotland, there seems little room for doubt. They can be run into the rural districts in every direction, both for passenger and goods traffic. There are almost as few country roads as city streets on which these vehicles can not safely and easily go. The expansion of the motor-making industry, the changes and improvements in the vehicles, and the development of the street transit motor-lines are now matters of frequent comment. It is announced that the directors of the Glasgow Exposition of 1901 are making extensive provision for an exhibit of these vehicles in the locomotive and transportation department, with facilities for the practical demonstration of their merits."

**The Canterbury-Herne Bay Motor-Vehicle Service.**

WE mentioned in our issue of May 5th last that Messrs. Livet & Underwood, electrical engineers, of Canterbury, had inaugurated a motor-vehicle service between that town and Herne Bay.

So far the service has been successfully carried on by one car—a Daimler—but in consequence of the increase of traffic the organizers are, we learn, this week putting a large new “Lifu” steam wagonette, built by the Liquid Fuel and Engineering Co. of East Cowes, on the service.

**British Motor-Cars at the Paris 1900 Exhibition.**

WE learn that the Committee of the Royal Commission for the Paris Exhibition of 1900 have nominated the Automobile Club as the consulting body to act in co-operation with the Royal Commission in reference to the automobile section of the Paris Exhibition of 1900. The Exhibition is to open on April 15th and to close on November 5th. Automobile vehicles will come under Class 30, Group 6, and will be exhibited at Vincennes. This section of the Exhibition promises to be one of considerable interest, as facilities are to be afforded for showing automobile vehicles in motion. In order to secure that adequate space shall be reserved for the display of the automobiles of British firms, those concerns who are not at present in a position to apply to the Royal Commission for space, for which there will be no charge, should inform the Secretary of the Automobile Club about what square area they are likely to require for their exhibits.

**An Australian Steam-Driven Vehicle.**

DURING the progress of a recent cycle race meeting at Melbourne, Mr. Thomson, of Armadale, exhibited his steam-driven motor-car. The steam is generated by oil-burners, and the car, which takes the form of a “phaeton,” is of striking design, and, judging from the easy manner in which Mr. Thomson put his vehicle through a number of evolutions, he has, states an Australian contemporary, something good in automobilism. The weight of the vehicle is about 1,200 lb., and its ordinary speed is about fifteen miles per hour.

**A Long “Non-Stop” Race.**

ON Thursday last week the Hon. C. S. Rolls, on his Panhard-Levassor two-seated car, left the Exhibition at the Agricultural Hall, Islington, at 11.17 a.m., and after some delay owing to the water-circulation pump, left the foot of Barnet Hill at 12.56 p.m., reaching Baldock (36 miles from Hall) at 2.4 p.m. Returning—without stopping—the Agricultural Hall was reached at 3.53 p.m.; Baldock again at 5.48 and the Agricultural Hall at 7.38. The total time for the two journeys (144 miles) was thus 8 h. 21 m. The car made a continuous “non-stop” run of 134 miles in 6 h. 42 m. On Friday Mr. Rolls again journeyed to Baldock. Leaving the Agricultural Hall at 4.8 p.m., Baldock was reached without incident at 5.46½ p.m., depart 5.47, time of arrival at Agricultural Hall 7.31. The time occupied for the 72-mile run was thus 3 h. 23 m.

**Visit to the French Automobile Club's Exhibition.**

AFTER the close of the Richmond Show, Mr. Frederick R. Sims, Vice-Chairman of the Automobile Club, organized an expedition of members of the Club to Paris to view the French Automobile Club Exhibition. The party included Captain Schenley, Messrs. Worby Beaumont, Frank Butler, Herbert Capel, Thomas Clarkson, Herbert Hankey, Ernest Estcourt, Henry Pearce, Ernest Owers, George Iden and friend, and Mr. Percy W. Northey and Mrs. Northey. The majority of the above-named, together

with Mr. E. M. C. Instone, accepted Mr. Sims' invitation to the luncheon given by him at the villa of the Automobile Club de France in the Bois de Boulogne, which took place on Sunday, July 2nd. Sir David Salomons and the Hon. C. S. Rolls were also on a visit to the French Exhibition at the same time.

**The Start of the Tour de France Race.**

ON Saturday, the 15th inst., the following members of the Automobile Club of Great Britain—viz., Capt. the Hon. Cecil Duncombe, the Hon. C. S. Rolls, Messrs. T. B. Browne, L. H. Walter, A. C. Poole, and the Secretary (Mr. C. Johnson)—left London for Paris to be present at the start of the Tour de France Race, which took place at Champigny at 8 o'clock the following morning—Sunday, July 16th. These members were present at the sealing of the racing carriages outside the French Club on Saturday afternoon; they dined at the villa of the Automobile Club de France on Saturday evening; rose at 4.30 on the Sunday morning, and caught an early train to Champigny, and, having examined the splendid collection of automobile vehicles entered for the race, they walked some distance along the route in order to see the racing cars and racing tricycles—which were started at half-minute intervals—go by at their top speed. As all the racing carriages were of from 10 to 20 h.p., the speed on a straight level road was terrific, and the members of the English Club who were present were delighted with the sight. Some of the party returned to London on the Sunday night and others during the course of the week.

**A Motor-Car Trip across America.**

MR. AND MRS. JOHN D. DAVIS have started on a journey from New York for San Francisco in a Duryea touring cart of heavier construction than usual to stand the wear and tear of country roads. The journey, which will be the longest ever undertaken by motor-carriage, will cover 3,700 miles. The carriage which will be employed is the latest product of the National Motor-Carriage Co., of New York. Its total weight, passengers and luggage included, will be about 1,200 lb.

**The Electrical Cab Company.**

IT is with great regret we learn that the Electrical Cab Company has been compelled to pay off all its men and close its yard yesterday, in consequence of the difficulty in finding drivers, and the exhaustion of its capital. Recently only about a dozen out of the eighty of the Company's cabs have been at work, the “season” rendering the obtaining of skilled men very difficult. All the directors have resigned, with the exception of Mr. Walter Bersey, the chairman and managing director. The Company, we are informed, will be reconstructed.

**The Cycle Trade and Motor-Cars.**

A SIGNIFICANT feature of the Motor-Car Exhibition at the Agricultural Hall was the large number of cycle trade visitors. Indeed, we heard it stated that except for the exhibits one could almost imagine they were at the Stanley Cycle Show, so many familiar faces in the cycle trade being visible. The exhibitors, too, numbered quite a number of firms intimately connected with the cycle industry, including Messrs. Brampton Bros., Ltd., Messrs. Brown Bros., Ltd., the Allard Cycle Co., Ltd., the Star Cycle Co., Ltd., Messrs. Friswell & Co., and the Dunlop Co. It is an open secret that quite a number of cycle manufacturing concerns in the Midlands are quietly working on experimental motor-vehicles, while in the London district there are many small firms which are preparing to add the sale and repair of motor-cars and cycles to their business.

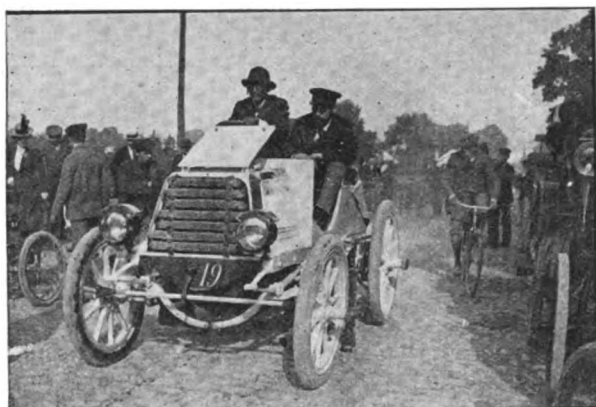
## LE TOUR DE FRANCE.

## THE START FOR THE GREAT FRENCH CONTEST.

(From Our Own Correspondent.)

PARIS, July 18th.

WHAT racing has done in England for horses and cycles it is now doing for automobiles in France, and all those English autocarists who were fortunate enough to witness at Champigny last Sunday morning the start for "Le Tour de France" must have been filled with regret that racing is not permitted in England, for undoubtedly an occasional *course* would do more



FIGS. 1 AND 2.—TWO VIEWS TAKEN AT STARTING POINT.

than anything else to further the British industry and to render popular the grand sport of automobilism.

In France to this cause must be largely attributed the present excellency of autocars, both as regards design and material and workmanship, for the numerous races are productive of the keenest competition among the many French manufacturers, each firm continuously striving to build cars faster and more durable than those of their rivals, well knowing that in the event of success the number of orders resulting will repay a hundred times over their initial outlay of time and money. "Le Tour de France" has been promoted and organized by *Le Matin*, under the auspices of the Automobile Club de France, and it is by far the severest test to which racing automobiles have yet been put. The race is being run off in seven stages, the distances per day ranging from a minimum of 192 kilometres on the last day to a maximum of 441 kilometres on the second, the total distance being 2,229 kilometres. The stages are as follows:—

|                                     |      |     |
|-------------------------------------|------|-----|
| July 16—Paris to Nancy .. .. .      | Kil. | 290 |
| " 17—Nancy to Aix-les-Bains .. .. . |      | 441 |
| " 19—Aix-les-Bains to Vichy .. .. . |      | 382 |
| " 21—Vichy to Périgueux .. .. .     |      | 299 |

|                                     |      |     |
|-------------------------------------|------|-----|
| July 22—Périgueux to Nantes .. .. . | Kil. | 339 |
| " 23—Nantes to Cabourg .. .. .      |      | 348 |
| " 24—Cabourg to Paris .. .. .       |      | 192 |

The competing automobiles are divided into three classes—carriages, motor-cycles, and voiturettes; and in each category valuable prizes are offered, amounting to a gross aggregate of £900. The entries were 32 carriages, 31 cycles, and 4 voiturettes, and of these 19 carriages, 25 cycles, and all the voiturettes started from Champigny on Sunday morning. They were:—

| CARRIAGES. |                            |                       |  |  |      |
|------------|----------------------------|-----------------------|--|--|------|
| NO.        |                            |                       |  |  | H.P. |
| 1.—        | Charron .. ..              | Panhard .. ..         |  |  | 16   |
| 2.—        | Girardot .. ..             | " .. ..               |  |  | 12   |
| 3.—        | Pinson .. ..               | " .. ..               |  |  | 12   |
| 6.—        | Giraud .. ..               | Amédée Bollée .. ..   |  |  | 20   |
| 7.—        | Avis .. ..                 | " .. ..               |  |  | 20   |
| 8.—        | Leys .. ..                 | Panhard .. ..         |  |  | 12   |
| 9.—        | R. de Knyff .. ..          | " .. ..               |  |  | 16   |
| 11.—       | Clément .. ..              | " .. ..               |  |  | 12   |
| 12.—       | Jénatzy .. ..              | Mors .. ..            |  |  | 12   |
| 14.—       | Levegh .. ..               | " .. ..               |  |  | 12   |
| 15.—       | Jamin .. ..                | Amédée Bollée .. ..   |  |  | 20   |
| 16.—       | Antony .. ..               | Mors .. ..            |  |  | 12   |
| 17.—       | Boileau de Castelnau .. .. | Amédée Bollée .. ..   |  |  | 10   |
| 18.—       | Heath .. ..                | Panhard .. ..         |  |  | 12   |
| 19.—       | Chasseloup Laubat .. ..    | " .. ..               |  |  | 12   |
| 20.—       | G. Richard .. ..           | Richard .. ..         |  |  | 7    |
| 21.—       | Lefebvre .. ..             | Lefebvre-Bolide .. .. |  |  | 16   |
| 25.—       | Broc .. ..                 | Mors .. ..            |  |  | 12   |
| 31.—       | Flash .. ..                | Vallée .. ..          |  |  | 16   |

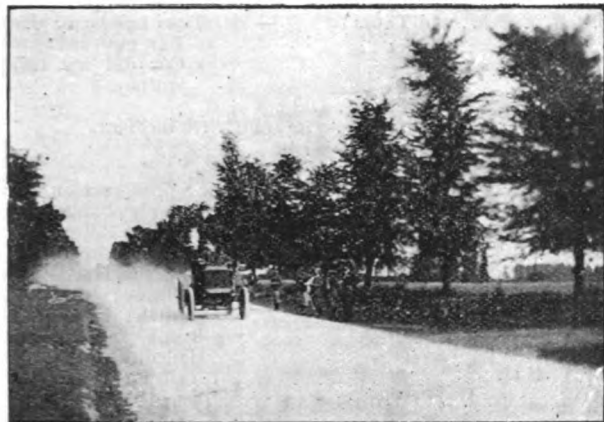
| MOTOR-CYCLES. |                 |             |  |  |  |
|---------------|-----------------|-------------|--|--|--|
| NO.           |                 |             |  |  |  |
| 33.—          | Meaulne .. ..   | De Dion.    |  |  |  |
| 34.—          | Bardin .. ..    | " .. ..     |  |  |  |
| 35.—          | Teste .. ..     | " .. ..     |  |  |  |
| 36.—          | Griet .. ..     | Gaillardet. |  |  |  |
| 37.—          | Williams .. ..  | De Dion.    |  |  |  |
| 38.—          | Tart .. ..      | " .. ..     |  |  |  |
| 39.—          | Rigal .. ..     | " .. ..     |  |  |  |
| 41.—          | Petiram .. ..   | " .. ..     |  |  |  |
| 42.—          | Collignon .. .. | " .. ..     |  |  |  |
| 43.—          | Gleize .. ..    | " .. ..     |  |  |  |
| 46.—          | Rivierre .. ..  | " .. ..     |  |  |  |
| 47.—          | Béconnais .. .. | Aster.      |  |  |  |
| 48.—          | Vasseur .. ..   | " .. ..     |  |  |  |
| 49.—          | Osmont .. ..    | " .. ..     |  |  |  |
| 52.—          | Cormier .. ..   | De Dion.    |  |  |  |
| 53.—          | Debacker .. ..  | " .. ..     |  |  |  |
| 54.—          | Nicolas .. ..   | " .. ..     |  |  |  |
| 55.—          | Degrais .. ..   | " .. ..     |  |  |  |
| 56.—          | Corre .. ..     | " .. ..     |  |  |  |
| 57.—          | Legras .. ..    | " .. ..     |  |  |  |
| 58.—          | Mèche .. ..     | " .. ..     |  |  |  |
| 59.—          | Géo .. ..       | " .. ..     |  |  |  |
| 60.—          | Marcellin .. .. | " .. ..     |  |  |  |
| 62.—          | Willaume .. ..  | " .. ..     |  |  |  |
| 63.—          | Joyeux .. ..    | Aster.      |  |  |  |

| VOITURETTES. |                |             |  |  |  |
|--------------|----------------|-------------|--|--|--|
| 64.—         | Aubin .. ..    | Decauville. |  |  |  |
| 65.—         | Théry .. ..    | " .. ..     |  |  |  |
| 66.—         | Boittier .. .. | " .. ..     |  |  |  |
| 67.—         | Gabriel .. ..  | " .. ..     |  |  |  |

The start was made from the hill at Champigny, on the Ozouer road, at 8 o'clock in the morning, but long before that hour an enormous crowd had assembled, while a constant stream of cyclists and automobilists passed through the *contrôle* en route for various points of vantage from which to view the vehicles travelling at full speed. The majority of those on foot, however, preferred to see the race at its initial stage, as the weather was far too hot to permit of much exertion, and accordingly, after an inspection of each car, we took our station at a point some 300 yards from the summit of the hill, and from there witnessed the passing of the competitors as they were despatched from the *contrôle* at intervals of thirty seconds. At this spot the fastest travelling car was undoubtedly the Amédée Bollée of M. Avis, and it was truly astounding to observe the rapidity with which this vehicle in particular got into its stride. This car, in common with the two other high-powered Amédée Bollées which are competing, carries a funnel-shaped sail to conduct a constant current of air directly on to the radiators, which are placed high up on



the back of the car—a truly ingenious arrangement. These three cars have also a distinctive feature in the absence of a front axle, massive springs taking its place. Of the competing Panhard cars little need be said, as voluminous descriptions of the king of motor-vehicles have appeared so frequently



FIGS. 3 AND 4.—TWO SNAP-SHOTS OF VEHICLES EN ROUTE.

during recent months; but it is interesting to note that M. René de Knyff's 12-h.p. racer, of the last Paris-Bordeaux course, is now participating in the tour under the guidance of M. Pinson, while M. de Knyff himself is, of course, driving his new 16-h.p. vehicle. The Mors new racers are beautiful examples of workmanship and finish, and are modelled

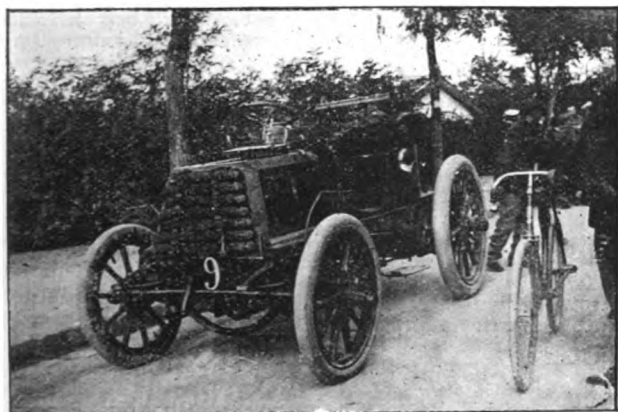


FIG. 5.—M. R. DE KNYFF'S PANHARD CAR.

on very similar lines to the Panhard cars; indeed, at a little distance the two makes appear almost identical. These Mors cars have the motor in front in a case similar to that on a Panhard; they have sloping wheel steering and cog wheel transmission gear, while their speed levers are much in the

same position as those on the cars from Ivry. The competing Bolide car holds the kilometre record for petrol vehicles, but it remains to be seen whether it is a "stayer." Certainly, the most extraordinary vehicle in appearance is that belonging to M. Flash (the racing name of a well-known autocarist), which *Le Matin* describes as being like a slipper very high in the instep. And this truly represents the aspect of this car, which is provided with a 16-h.p. four-cylinder Vallée motor, and utilises belts for the transmission of power. After the cars, the cycles and voiturettes passed in quick succession, leaving us at the finish absolutely smothered in dust and overcome with the intense heat, but comforted by the reflection that our route to the station was downhill throughout. And so, among a dense throng of men and motors, we wended our way homewards, well satisfied at having participated at the start of what will doubtless be recorded as a historic race. I send you several photos taken at the starting place, and also at a point where the vehicles had commenced to get up speed.

THE Lowestoft Motor-Car Co., Ltd., has been registered with a capital of £3,000 to manufacture, sell, let on hire, and deal with motor-cars, and to carry on the business of carriers, engineers, etc. The registered office is at 26 Nelson Street, Lowestoft.

Six additional motor-cars arrived in Newcastle last Tuesday afternoon from the south. They attracted a good deal of attention on arrival at the Central Railway Station. The cars have been put on the streets for hire during the week.

MR. A. H. DOWNES, of 28 and 29 St. Swithin's Lane, the liquidator of the Australian Cycle and Motor Company, requests creditors to send particulars of their claims to him by Thursday, the 31st prox. For Australian creditors the date is Saturday, October 21st.

THE Epstein Electric Accumulator Syndicate, Ltd., has been registered with a capital of £10,000 to adopt an agreement with Mr. Roger W. Wallace for the acquisition of certain patents and property; to manufacture and deal in secondary batteries, and to carry on the business of an electric light and power company, etc.

AT the quarterly meeting of the Warwickshire County Council at Warwick the other day a letter was read from Ryton-on-Dunsmore Parish Council complaining of the rate at which motor-cars passed through the village, endangering the lives of the school children. It was referred to the Roads and Bridges Committee, and the Chief Constable's attention was called to the complaint.

THE general passenger agent of the New York Central and Hudson River Railroad has determined to establish an electric cab and carriage service at the Grand Central Station in New York. A charging station and a general repair shop for the electric vehicles will be built in the station. The cabs are to be owned and operated by the railroad company. One hundred will, it is stated, probably be installed as soon as the station is completed.

AT a special meeting of the Maidenhead Town Council on Monday evening, a petition was presented calling attention to the negligence of motor-car drivers passing through the town, and asking the council to take steps to reduce the danger caused by such traffic to a minimum. The Mayor announced, as a remarkable and pathetic coincidence, that the petition was sent to him with a letter by the late Miss Bulkeley, who on the very next day met with a fatal accident through her horse becoming frightened by a motor-car. The council resolved to petition the Local Government Board in favour of the registration of motor-cars and to erect boards cautioning cyclists and motor-car drivers as to speed in passing through the town.

## THE MOTOR-CAR JOURNAL'S "COMMERCIAL EFFICIENCY" TRIALS.

IN our last issue we dealt with the details of these trials up to Wednesday evening. The tests were, however, not brought to a conclusion until late on Saturday evening, so that we now complete our account of the same.

The trials were divided into fifteen different classes, so as to include every type and size of motor-vehicle; and so great has been the interest taken in the trials that entries in nine different classes were received. A start with the tests was made on Monday, the 10th inst., when vehicles in three classes were started, altogether six vehicles leaving the hall; on Tuesday ten vehicles participated; on Wednesday fifteen cars of different types were out on trial; on Thursday no less than twenty-one; on Friday, twelve; and on Saturday, nine. In Class 1—"parcel vans propelled by petroleum-spirit motors and designed to carry a minimum load of 15 cwt. and two persons"—two vehicles competed. The route was to Welwyn and back, fifty miles, the minimum time allowed being 6 hours, the maximum 6½ hours, with a compulsory one hour stop at end of outward journey. The results are as follows:—

| Name of Entry.                  | Day.         | Time occupied between leaving Hall and return. | Observer's Report.  |
|---------------------------------|--------------|--|---|
| Motor Mfg. Co., Ltd., Coventry. | 1st (Tues.)  | 7 h. 1 m.                                      | Slow up hill, even on first speed. Stopped on return journey 5 min. to replenish petrol tank. |
| Do.                             | 2nd (Wed.)   | 6 h. 21 m.                                     | No incident.  |
| Do.                             | 3rd (Thurs.) | 6 h. 33 m.                                     | 12 min. delay owing to steering-gear; otherwise everything satisfactory.                      |
| Daimler Motor Co.               | 1st (Wed.)   | 6 h. 19 m.                                     | No incident.  |
| Do.                             | 2nd (Thurs.) | 6 h.   | do.   |
| Do.                             | 3rd (Fri.)   | 6 h. 1 m.                                      | do.   |

Class 6, which is devoted to "pleasure carriages designed to carry not more than two persons, actuated by steam or petroleum-spirit motors, and carrying a full load during the trials," brought the largest number of entries, no less than eleven vehicles competing. The route in this case was from the Agricultural Hall to Baldock, *via* Hatfield, and back, a total distance of seventy-two miles. A compulsory stop of one hour at Baldock was required, and no car had to take less than 7 hours or more than 7½ hours for the journey. The times of the competing cars in this class are shown below:—

### CLASS 6.

| Name of Entry.                                       | Day.        | Time Occupied.          | Observer's Report.   |
|--|-------------|-------------------------|--|
| Star Cycle Co., Ltd., Wolverhampton (No. 1 car).     | 1st (Mon.)  | 8 h. 48 m.              | Frequent stoppages, both on outward and return journey, owing to motor over-heating.   |
| Do.  | 2nd (Tues.) | 7 h. 48 m.              | Stopped once each outward and return journey for water.  |
| Do.  | 3rd (Wed.)  | 7 h. 25 m.              | Ditto.   |
| Star Cycle Co., Ltd. (No. 2 car).                    | 1st (Mon.)  | (See Observer's Notes.) | Exhaust pipe required attention outward journey, 17 min. delay. Return journey a tire burst at Finchley, where car had to be left.   |
| Do.  | 2nd (Tues.) | 7 h. 48 m.              | Stopped once on journey each way for water.  |
| Do.  | 3rd (Wed.)  | 8 h. 19 m.              | Outward journey no incident. Return journey, accumulators gave out at Finchley.  |
| Daimler Motor Co., Coventry (Critchley 5½-h.p. car). | 1st (Tues.) | 8 h. 33 m.              | 85 min. delay outward journey owing to belt-joint breaking, tire burst, and extinguishing of lamps. Return journey, 25 min. delay owing to belt-joint breaking, and water-pipe leak. |

| Name of Entry.                                       | Day.         | Time Occupied. | Observer's Report.  |
|--|--------------|----------------|---|
| Daimler Motor Co., Coventry (Critchley 5½-h.p. car). | 2nd (Wed.)   | Did not start. |   |
| Do.  | 3rd (Thurs.) | do.            |   |
| Daimler Motor Co. (Critchley 3½-h.p. car).           | 1st (Wed.)   | 7 h. 36 m.     | Several stops owing to trouble with water circulation pump.   |
| Do.  | 2nd (Thurs.) | —              | Tire burst at Potter's Bar outward journey. Car did not complete journey.   |
| Do.  | 3rd (Fri.)   | Did not start. |   |
| Marshall & Co., Manchester (Hurtu car).              | 1st (Tues.)  | 7 h. 14 m.     | No incident.  |
| Do.  | 2nd (Wed.)   | 6 h. 49 m.     | Stopped once on outward journey to oil up and for water. Return journey, one stop for water.  |
| Do.  | 3rd (Thurs.) | 7 h. 8 m.      | No incident outward journey; return journey, switch gave slight trouble, also a lubricator failed to work properly, causing heating of crank. |
| London Autocar Co. (Hurtu car).                      | 1st (Wed.)   | —              | Tire burst outward journey; car left at Baldock.  |
| Do.  | 2nd (Thurs.) | Did not start. |   |
| Do.  | 3rd (Friday) | do.            |   |
| Motor Mfg. Co. (Bollée voiturette).                  | 1st (Thurs.) | 7 h. 2 m.      | Lamp went out once; otherwise no incident.  |
| Do.  | 2nd (Friday) | 6 h. 57 m.     | Everything satisfactory.  |
| Do.  | 3rd (Sat.)   | 7 h. 22 m.     | do.   |
| Motor Mfg. Co. ("Princess" car).                     | 1st (Thurs.) | 7 h. 1 m.      | Every satisfactory.   |
| Do.  | 2nd (Friday) | 8 h. 26 m.     | Owing to accident to a horse-drawn dog-cart through horse shying two hours unavoidable delay occurred.  |
| Do.  | 3rd (Sat.)   | —              | Tire burst near Stevenage; outward journey, car did not complete journey.   |
| Automobile Asso., Ltd. (Lynx car).                   | 1st (Thurs.) | 8 h. 8 m.      | Outward journey, two stops for motor (20 m. delay.) Return journey, inner tube of tire burst; new one inserted. Except for this car ran well. |
| Do.  | 2nd (Friday) | 7 h. 33 m.     | 32 m. delay, owing to belt troubles.  |
| Do.  | 3rd (Sat.)   | 6 h. 38 m.     | Everything satisfactory.  |
| J. Burns, 44 Berners Street, W. (Endurance car).     | 1st (Thurs.) | 7 h. 56 m.     | Outward journey no incident. Return journey belt broke twice and a cable connected with commutator broke, causing total delay of 1 h. 6 m.    |
| Do.  | 2nd (Fri.)   | 6 h. 50 m.     | Water box fell down outward journey (30 m. delay); otherwise everything satisfactory.   |
| Do.  | 3rd (Sat.)   | 6 h. 59 m.     | Everything satisfactory.  |
| Automobile Association (Orient Express car).         | 1st (Thurs.) | 8 h. 34 m.     | do.   |
| Do.  | 2nd (Fri.)   | Did not start. |   |
| Do.  | 3rd (Sat.)   | do.            |   |

In Class 7—"pleasure carriages designed to carry not less than four persons, actuated by steam or spirit-motors, and carrying a full load"—there were six competitors. The route was the same as in Class 6. Appended are the results:—

### CLASS 7.

| Name of Entry.                      | Day.         | Time occupied. | Observer's Report.   |
|-------------------------------------|--------------|----------------|--|
| Motor Mfg. Co. (4-seated dog-cart). | 1st (Tues.)  | 9 h. 38 m.     | Vehicle slow all outward journey, especially up hills; three stops, 5 m. for burners, and two stops for steering gear. |
| Do.                                 | 2nd (Wed.)   | 7 h. 16 m.     | Everything satisfactory.   |
| Do.                                 | 3rd (Thurs.) | 6 h. 50 m.     | Outward journey cap came off axle (2 min. delay); otherwise no incidents.  |

| Name of Entry.   | Day.         | Time Occupied. | Observer's Report.  |
|--|--------------|----------------|---|
| Motor Mfg. Co. (Iveagh phaeton).                           | 1st (Mon.)   | 6 h. 59 m...   | No stop, no incident.   |
| Do.  | 2nd (Tues.)  | 7 h. 9 m...    | Stopped three times—<br>10 m. steering gear,<br>2 m. carburettor, and<br>4 m. ignition tubes.   |
| Do.  | 3rd (Wed.)   | 7 h. 0 m...    | Everything satisfactory.  |
| Daimler Motor Co. (Knightley Victoria).                    | 1st (Mon.)   | 6 h. 52 m...   | No incident.  |
| Do.  | 2nd (Tues.)  | 7 h. 3 m...    | do.   |
| Do.  | 3rd (Wed.)   | 6 h. 55 m...   | do.   |
| The Automobile Association, Nottingham Hill (Cambier car). | 1st (Wed.)   | —              | Car only got as far as Liverpool Road, Holloway, when in turning corner sharply vehicle skidded, dragging off a tire, and slightly damaging a wheel. Car returned to Hall without completing journey. |
| Do.  | 2nd (Thurs.) | Did not start. |   |
| Do.  | 3rd (Fri.)   | do.            |   |
| Automobile Association (Cambier Wagonette).                | 1st (Thurs.) | —              | Several stops owing to tire punctures, breakage of petrol supply pipe, and leak in water-tank. Car did not return to Hall same day.   |
| Do.  | 2nd (Fri.)   | Did not start. |   |
| Do.  | 3rd (Sat.)   | do.            |   |
| Motor Mfg. Co. (Irish Dog Cart).                           | 1st (Thurs.) | 6 h. 58 m...   | Two stops owing to burners going out; otherwise no incident.  |
| Do.  | 2nd (Fri.)   | 7 h. 1 m...    | Everything satisfactory.  |
| Do.  | 3rd (Sat.)   | 7 h. 17 m...   | Six minutes delay owing to steering gear, outward journey; otherwise everything satisfactory.   |

For Class 8—"pleasure carriages propelled by electricity, designed to carry not less than two persons and carrying a full load during the trials,"—the course was to Bell Bar and back, a distance of  $3\frac{1}{2}$  miles. The two-seated trap of the Electrical Undertakings, Ltd., did the journey on three consecutive days in respectively 3 h. 56 m., 3 h. 52 m., and 3 h. 37 m. These times including half-an-hour's compulsory stop at the end of the outward journey. The two-seated car of Mackenzie's Carriage Works, London, S.E., was also very successful over the same route. The vehicle was driven by Mr. Mackenzie, jun., his times for the three days being 3 h. 43 m., 3 h. 43 m., and 3 h. 44 m.

In Class 9, Mr. Frost-Smith entered and drove a Riker four-seated car, fitted with a special set of accumulators known as the "H. and H." In this class the course was to Potter's Bar and back, a distance of twenty-five miles. Mr. Frost-Smith's time for the three runs, including a compulsory stop of half an hour at the end of the outward journey, was 3 h. 3 m., 3 h. 8 m., and 2 h. 59 m.

Class 10—"Motor-vehicles of any design, such as a light omnibus, wagonette, carrying a minimum of eight persons including driver." Three vehicles have competed. The course was to a point  $1\frac{1}{2}$  mile beyond Welwyn and back, a distance of 50 miles:—

#### CLASS 10.

| Name of Entry.                         | Day.        | Time Occupied. | Observer's Report.   |
|--|-------------|----------------|--|
| Motor Mfg. Co. (8-seated wagonette).   | 1st (Mon.)  | 5 h. 52 m...   | No incident.   |
| Do.                                    | 2nd (Tues.) | 5 h. 55 m...   | Everything satisfactory.   |
| Do.                                    | 3rd (Wed.)  | 6 h. 16 m...   | do.  |
| Daimler Motor Co. (8-seated wagonette) | 1st (Mon.)  | 7 h. 24 m...   | Car went to Baldock instead of to near Welwyn—72 miles instead of 50 miles.<br>(See Observer's notes.) |
| Do.                                    | 2nd (Tues.) | 6 h. 3 m...    | No incident.   |
| Do.                                    | 3rd (Wed.)  | 6 h. 4 m...    | do.  |
| Motor Mfg. Co. (chars-a-banc)          | 1st (Wed.)  | 8 h. 50 m...   | Tire came off 5 minutes after start. Ran short of oil on homeward journey.                             |

| Name of Entry.                | Day.         | Time Occupied. | Observer's Report.  |
|-------------------------------|--------------|----------------|---|
| Motor Mfg. Co. (chars-a-banc) | 2nd (Thurs.) | —              | Several stops outward journey, owing to motor steering gear and burners. Car only proceeded as far as Potter's Bar, and returned without making full journey. |
| Do.                           | 3rd (Fri.)   | Did not start. |   |

Class 14—"carrier motor-tricycles or voiturettes, carrying a load of not less than 200 lb. in addition to driver, and having not more than 3-h.p. motor or engine"—only brought forward one competitor. The route was to just beyond Welwyn and back, 50 miles:—

#### CLASS 14.

| Name of Entry.                   | Day.         | Time occupied. | Observer's Report.   |
|----------------------------------|--------------|----------------|--|
| Motor Mfg. Co. (Bollée carrier). | 1st (Thurs.) | —              | Vehicle did not complete journey, being left at Welwyn, owing to trouble with motor. |
| Do.                              | 2nd (Fri.)   | Did not start. |  |
| Do.                              | 3rd (Sat.)   | do.            |  |

As already mentioned, the trials attracted considerable attention both on the part of motor-car builders and of those interested in automobilism generally, and should do much to prove that motor-cars are not only possible but are practical and efficient vehicles.

### THE AWARDS.

The following are the awards:—

#### CLASS 1.

Gold Medal—Van, Daimler Motor Co. (Letzer, Driver.)  
Certificate—Van, Motor Manufacturing Co. (Hawkins, Driver.)

#### CLASS 6.

Gold Medal—"Hurtu" car, Marshall & Co. (Tatton, Driver.)  
Do. Bollée, Motor Manufacturing Co. (Gollidge, Driver.)

Silver Medal—"Lynx" car, Automobile Association.

Do. "Endurance" car, J. Burns. (E. D. Billings, Driver.)

Certificate—"Star" car, Star Cycle Co. (J. Lisle, Driver.)

Do. "Princess" car, Motor Manufacturing Co. (Hallams, Driver.)

#### CLASS 7.

Gold Medal—Irish dog-cart, Motor Manufacturing Co. (Andrews, Driver.)

Do. Iveagh Phaeton, Motor Manufacturing Co. (Andrews, Driver.)

Do. Knightley Victoria, Daimler Motor Co. (O. Mayer, Driver.)

Certificate—4-seated dog-cart, Motor Manufacturing Co. (Glasgow, Driver.)

#### CLASS 8.

Gold Medal—2-seated trap, Electrical Undertakings, Ltd. (Kuettner, Driver.)

Gold Medal—2-seated car, Mackenzie's Carriage Works. (Mr. Mackenzie, jun., Driver.)

#### CLASS 9.

Gold Medal—Riker car, with "H. and H." batteries, Mr. Frost-Smith. (Mr. Frost-Smith, Driver.)

#### CLASS 10.

Gold Medal—8-seated wagonette, Daimler Motor Co. (Gadsden, Driver.)

Gold Medal—8-seated wagonette, Motor Manufacturing Co. (Haxton, Driver.)

## THE "PROGRESS" MOTOR-CAR.

AS will be seen by the illustrations herewith, this is a small car for two people, and should meet with a very popular demand. The engine, which will be seen in Fig. 1, is of  $2\frac{1}{2}$  h.p., and inclined slightly forward. Cooling is effected by means of very large cooling ribs, which are certainly very effective, although it has been argued that the De Dion engine of  $1\frac{1}{2}$  h.p. is the largest engine which will run satisfactorily without water-cooling. It must be taken into consideration, however, that the speed of this engine when giving off its power is only about half the speed of the De Dion engine, and there are consequently only half the number of explosions, and a proportionately greater cooling area. The ignition is electric, there being a switch on the secondary engine shaft for cutting the primary current on and off from the induction coil, which is complete with its own vibrator. This system seems to give even better results in practice than the De Dion system. The weight of the car complete is only  $4\frac{1}{2}$  cwt., so that there is no need to have reversing gear fitted to comply with the regulations regarding motor-cars laid down by Act of Parliament. The transmission gear is of a novel design and principle. Two 1-in. pitch chains are geared direct to the motor, and drive two wheels of different size on the counter-shaft, which, when the car is standing or out of gear, revolve freely around the counter-shaft. These wheels are mounted on ball bearings; in fact, ball bearings are employed throughout the car. In order to bring either of these wheels into gear it is only necessary to move the one starting handle either to the right or left for the low or high speed as may be required. This action causes one of the wheels to revolve with the counter-shaft, and of course at the same speed by means of two levers, which, being moved laterally along the shaft, are pressed further apart by means of a cone on the shaft, causing a band brake to grip around a band drum, part of the gear wheels, and thus to cause the gear wheel to be rigidly connected to the counter-shaft and to revolve with it. The motion of the counter-shaft is again transmitted to the rear road wheels by another 1 in. pitch chain placed centrally, and carried on the usual differential gear. Steering is effected by means of a wheel, which will be seen from Fig. 2 to be slightly inclined to the driver, giving the car a very pretty appearance, and also being very handy and easy of access. In the vehicle illustrated the engine

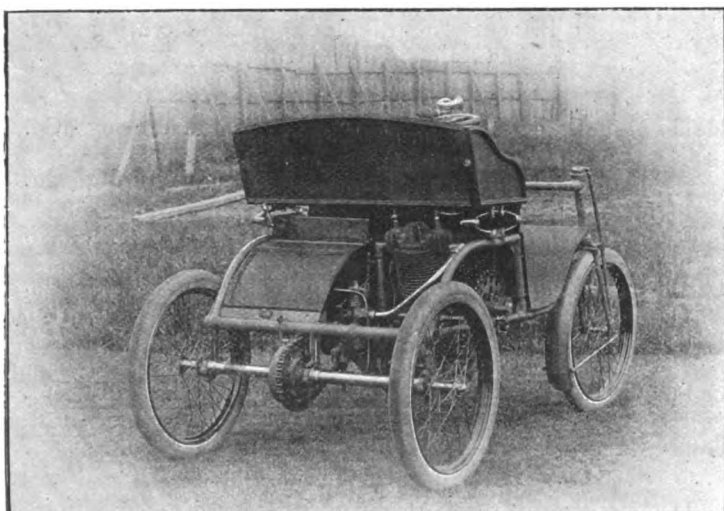


FIG. 1.—REAR VIEW OF "PROGRESS" MOTOR-CAR.

is not placed centrally, but will be in later types. The carburettor is of the Longuemare type, which is by this time well known to our readers. The seat is well sprung, as will be seen, and is comfortable. Another novel idea in the construction is the use of fibre instead of woodwork for the flooring, etc., of the car. This, although less than a  $\frac{1}{4}$  in.

thick, is very strong and cannot be split or broken, and is also possessed of considerable strength, being, of course, light into the bargain. The only handles used in controlling the car are the speed handle (which by the way will not allow of both gears being put in at once), the steering wheel, and the throttle valve and advance sparking levers, which will all be carried on the steering pillar, and therefore very easy of

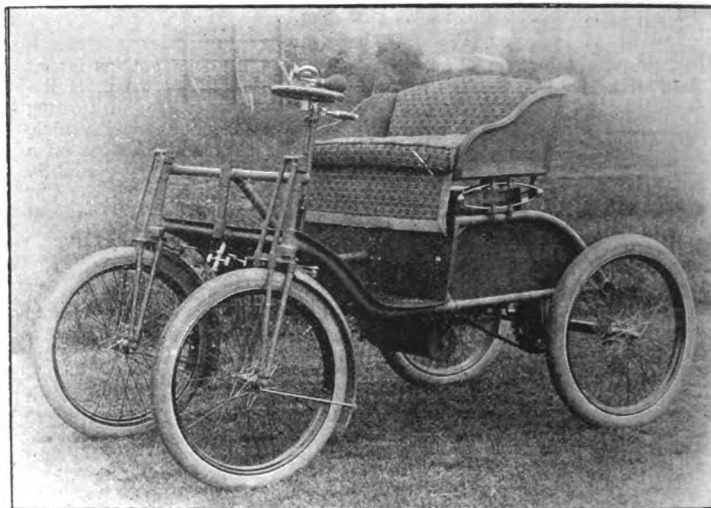


FIG. 2.—SIDE VIEW OF "PROGRESS" MOTOR CAR.

access. Another good point is that in applying the gear, which is positive in action, there is no sudden application causing a jolting start of the car and consequent discomfort, but as the speed lever is pushed over the tension on the band-brakes is gradually increased, and the car starts smoothly and noiselessly away. The engine is started by means of a handle at the driver's side, which is put in or out of gear with the starting pinion by revolving the eccentric bearing on which its axle revolves. The wheels, as will be seen, are tangentially spoked, and have large Dunlop pneumatic tires. The framework is entirely of tubular construction, well braced and very strong. The makers, the Progress Cycle Co., Ltd., of Coventry, have certainly struck a happy design, and have turned out a very neat and handy little car which does them every credit.

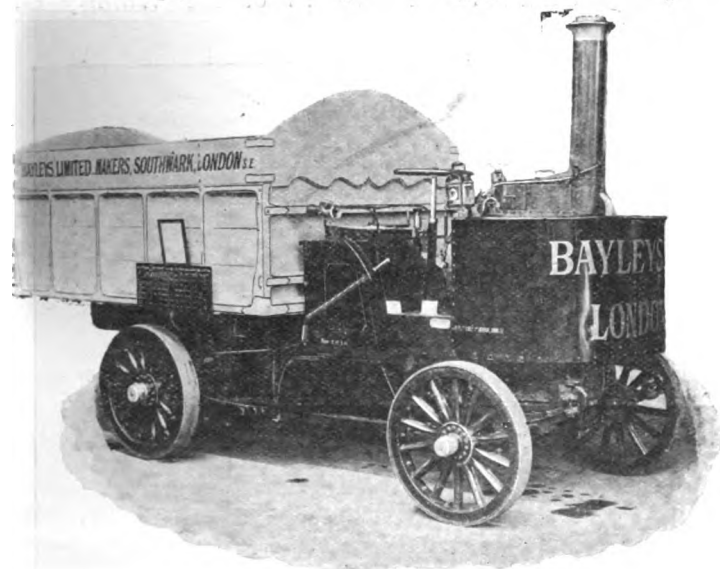
### Proposed Flying Visit to View Portion of the "Tour de France" Race.

THE Secretary of the Automobile Club points out that British automobilists who desire to see a portion of the remarkable "Tour de France" automobile race may do so by taking a "week-end" return first-class ticket from Waterloo to Havre (24s.), and by leaving Waterloo at 9.45 on Saturday night they should arrive at Havre on Sunday morning in time to proceed by boat at 7.45 for Trouville, and there catch a train at 9.1 for Cabourg, arriving there at 10.5 a.m. As there are no Sunday boats from Havre to Southampton the return by this service would have to be delayed until Monday night. The start of the last day's race from Cabourg to Paris could thus be seen on Monday morning. But since the majority of automobilists will wish to be at the dinner at the "Star and Garter," Richmond, on Monday night, which is to be given in honour of the Baron de Zuylen, the return to London can be made by leaving Cabourg at 4.31 and catching the 6.45 boat at Trouville for Havre, there taking the 8.20 train for Rouen, thus catching the night service *via* Dieppe for London. The "Tour de France" race on Sunday is from Nantes *via* Caen to Cabourg, 348 kilometres (216½ miles). The start from Nantes is at 7 a.m.; the arrival at Cabourg, therefore, should be about 1 o'clock.

## THE BAYLEY STEAM TIP-WAGON.



THE accompanying illustration shows the steam tip-wagon displayed at the recent motor-car exhibition at the Agricultural Hall by Messrs. Bayley's, Limited, of Newington Causeway, London, S.E. This vehicle is a combination of excellent parts, comprising a De Dion water-tube boiler, a Straker motor, and a transmission mechanism very similar to that employed on the Daimler petroleum-spirit cars. The vehicle is stated to weigh, unladen, 58 cwt., and to be designed to carry a load of four tons. The De Dion boiler, which is coke-fired, is located in the fore part of the vehicle. The engine, which is of the vertical compound type, is arranged under the driver's seat; it is stated to indicate 20 h.p., the normal speed being 500 revolutions per



minute. The shaft of the motor extends from the front right to the rear of the car, where the power is transmitted through bevel gearing to an intermediary shaft. The latter carries at its ends small pinions, which gear with internally-toothed rings bolted to the rear road wheels. A variable speed gear is provided, and it is stated that the wagon can attain any desired speed from two to seven miles per hour. The road wheels are strongly built and dished. Ample brake power is provided, there being a shoe brake acting on a drum on the motor shaft, and band brakes on each of the internally-toothed rings connected to the rear road wheels. The result of a twenty-mile test of this wagon was given in our issue of June 30th last.

PROGRESS is being made with the formation of the Automobile Club of America.

CONSIDERABLE interest has been evinced at the several motor-cars exhibited at the Bagshot Fair this week.

THE Mississippi Valley Automobile Transportation Co., of East St. Louis, Illinois, has just been incorporated to manufacture and operate motor-vehicles. The capital is £100,000.

MEMBERS of the Automobile Club are reminded of the dinner of the Club in honour of the President of the French Club, which is to take place at the "Star and Garter" Hotel, Richmond, on Monday next, the 24th instant, at 7.30.

MR. J. HECTOR GRAHAM, of the Graham Equipment Co., 170 Summer Street, Boston, U.S.A., is in Europe investigating the conditions and prospects of the motor-vehicle industry. Doubtless he will be at Liverpool at the end of the present month, as his Company has entered a vehicle in the heavy-traffic motor-vehicle contest to take place there, as announced in these columns last week.

## MIDLAND MOTOR NOTES.

By "VERAX."



### The Humber Motor-Tandem Quadricycle.

I HAD, thanks to the courtesy of Mr. Philipps, the manager of the Humber Co.'s Works at Coventry, the opportunity of inspecting the gigantic works in which the noted bicycles of the Humber Co. are made, and now a large number of small motors. I had a short spin on perhaps the most successful motor they have turned out, which is described in my heading. This quad. far surpasses anything of a similar nature that I have tried before, and the suspension of the front seat is so perfect that there is practically no vibration at all at any speed, and this also applies to the handle-bar. The ignition is electric, the current being provided from dry batteries, which, as is now well known, give no trouble whatsoever, and have a long life compared to the accumulative system of storing. The engine at present fitted is the 1½-h.p. De Dion of latest type, which needs no description. For those who require even more speed I understand a 2½-h.p. De Dion engine is fitted. The gear on the single-gear machines is "medium," and with it the engine is capable of taking two persons up a fairly stiff gradient unassisted; but for very hilly country a two-speed gear is fitted. With this gear the machine is a most serviceable one, and requires very little "human assistance" at all. The steering is differential and is somewhat on the lines of the Marriott & Cooper Olympia tandem. The driver sits on a cycle or "pan" saddle, and a foot-board is provided for his feet, ensuring greater comfort than that afforded by the awkward and uncomfortable position by using the "free" pedals for this purpose. The front seat is supported on cradle springs, giving great elasticity and comfort consequently, and it is situated fairly low down, the cushion top being level with the hindguard which covers the 28-in. wheels. This is done to allow the driver an unobstructed view of the road he is negotiating, which is, of course, very necessary, and does not cause that side-ache which drivers of the old fashioned Bollée have had to put up with owing to the two seats being nearly on a level. All the controlling handles are placed on the top or compression tube of the machine, and are very easy of access. The brake, by a very neat arrangement, may be applied by either foot or hand lever, or both in case of emergency. The current to the motor is controlled by the usual switch on the left handle. An extra oil tank, same shape as the seat, and placed under it is not noticeable to the casual observer, but carries, nevertheless, a supply of oil sufficient for a fifty-mile run. The carburettor, of the usual surface type, not only acts as a vaporiser but also as an oil reservoir, and this carries enough spirit for a fifty-mile journey. A neat tool box is also arranged under the front foot-board. Very efficient mud-guards are fitted, which prevent annoyance from dust and dirt to the passengers. The gearing is quite encased in a metal bath, which, filled with grease and oil, keeps the wheels well lubricated and prevents undue noise. Altogether the machine has a very handsome appearance, and with its 1½-h.p. engine is certainly a stayer. The demand, I understand, is increasing largely for these quads, and the Company at present can turn out five a week. One was going away to Germany the day I was at the works, and was finished in high-class style.

### Other Motors at the "Humber" Co.'s Works.

OF course, this is not the only type of machine made, as the Company have long been experimenting with motors and have produced some certainly curious-looking machines. I noticed the Lawson bicycle and Victoria with the main engine axle running through the hub of the wheel it drives by means of a Crypto gear. This



certainly is a very compact method of working, and ensures at all times sufficient weight on the driver. As this wheel is also the steering wheel in carriages and bicycles, it, of course, renders turning very easy, and the carriage may be turned round in the street in its own length, which is a very important point. There was also the Humber carriage, somewhat similar in general appearance to the Hurtu, but with the engine situated horizontally in front. This car has been the subject of a considerable amount of experiment, but I understand is now a satisfactory conveyance. It is now on its way to a client on the continent. On my return home in the evening on my Benz car I met two of the quads coming along at a good speed, one being driven by Mr. Rucker, the other by Mr. Philipps. As the roads were very dusty it is needless to say that some distance separated the machines, which, being fitted with pneumatic tires, have a nasty habit of raising the dust, which is not conducive to comfort for the passengers in any vehicle following in close proximity.

#### Birmingham Notes.

WHILE visiting Birmingham the other day I noticed Mr Scarborough, who, it will be remembered, was formerly with the Daimler Co., flitting about on a Beeston tricycle with that, to my mind, abhorrence, tube ignition. However, the machine was certainly working well, and I saw it several times before I was fortunate enough to catch the driver's eye. On doing so, however, it suddenly stopped, and I learned a great many interesting things from the aforementioned gentlemen. In the first place he told me of a new steam dray, capable of carrying four or five tons, which has been built by a firm of engineers in Birmingham, and which so far is very satisfactory. In fact, it has brought a load of four tons up the Bull Ring, which is a very steep gradient, at  $3\frac{1}{2}$  miles an hour about. This is certainly a very creditable performance. I am not at liberty yet to mention the name of the firm, but no doubt at no distant date this dray will compete successfully with others. In appearance it is somewhat like the Thornycroft, having a cab in front for the driver, and covering the machinery. Wheel steering is employed, and answers very well, I am told; the wheels are of wood, shod with iron tires, and are very strong.

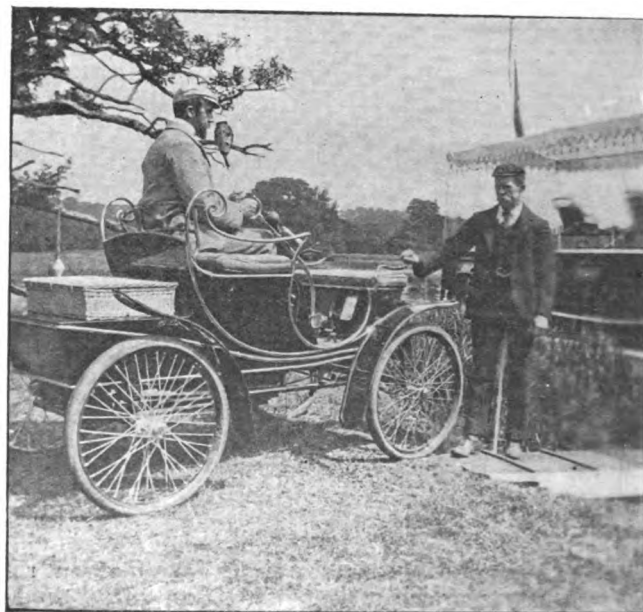
#### Other Birmingham Items.

THE works lately occupied by the Anglo-French Motor Co. present a very deserted appearance, and are to be let. Mr. Gascoigne, the late manager, is at present with Messrs. Allday's & Onions, who have turned their attention to motors, and have secured his services as manager of that department. Mr. Dünkeley, the perambulator manufacturer, who some time since brought out a gas motor bath chair which bore the peculiar name of the Dunkambulator, has, it appears, dropped the business entirely. Rumour had it that he was founding a large company for the production of his novelties in variety, but like many other things this has fallen through. I have also inspected a new car which is in course of erection, under the designs and superintendence of a Mr. Briggs, at Messrs. Simms' Works, Bradford Road. It struck me as being likely to be a good car when finished, and the engine work was strong and well fitted. Some parts were rather rough, but Mr. Briggs, who by the way was with the Anglo-French Motor Company, is not going to more expense with an experimental car than he is absolutely obliged to do, and, as he acknowledges, he has found out that motors are not so easy to build after all. This car is his third attempt, and, as I say, promises success when completed. The engine has two cylinders, with a  $3\frac{1}{2}$  in. bore and 6 in. stroke, with water-cooling. The motor is in the rear of the vehicle, and fly-wheel aft as in the Benz. The combined fly-wheel and belt wheels run between the cranks, which are

set opposite one another. The engine makes 800 revolutions per minute and gives about 5 h.p. When this car is in a more finished condition I will give further particulars. Two seats are provided, and the car is intended to carry four people. Mr. Lanchester, of Five Ways, is also building one or two new cars.

## THE WHITNEY STEAM MOTOR-CAR.

WE are this week able to publish an illustration of the Whitney steam motor-car which created so much excitement at the Motor-Car Exhibition last week. In our last number we published a few brief particulars of the vehicle, while in our issues of June 2nd and 9th last several illustrations of the details of the Whitney car,



including the boiler, will be found, together with a fairly lengthy description. The gentleman seen in the illustration standing at the side of the car is Mr. Whitney, the builder and designer of the vehicle, and the way he handled it at the Exhibition last week came in for general admiration.

SOME excitement was caused at Bisley on Tuesday by the appearance of a motor-car in the camp. The vehicle was, we learn, a Victoria coupé, driven by Mr. Arthur du Cros.

THE Consolidated Traction Company, Pittsburgh, Pa., is about to add to its equipment an automobile emergency wagon, built by the Pope Manufacturing Company. The new wagon will have a storage battery that will give it a mileage of not less than fifteen miles at an average speed of ten miles per hour on ordinary streets where the average grade does not exceed one per cent. and where the maximum grade does not exceed ten per cent.

W. T. McCULLOUGH, proprietor of the Back Bay Cycle Co., Boston, U.S.A., has opened a branch store, under the name of the Back Bay Cycle and Motor Co., where he is doing a general business in the sale, renting, storing and repair of motor-vehicles. He has eight or ten De Dion tricycles and quadricycles which he rents at 1 dol. an hour, and is making arrangements with parties who have ordered carriages to store and care for them as soon as they are delivered. This is the first store of the kind opened in Boston, and, it is believed, in the United States.

## MOTOR-CARS ON THE CONTINENT.

### The Berlin Motor-Car Exhibition.

ALTHOUGH the part Germany has so far taken in the automobile movement has not been so marked as in France and in this country, yet a good deal of quiet work is being done, an evidence of which is likely to be found at the Exhibition which is to be held in Berlin in September next, under the auspices of the Mid-European Motor-Car Club. This show is likely to be most successful and interesting, as the applications for space have been so numerous as to necessitate a large increase in the space originally provided. The organizing committee have just decided to erect two temporary buildings, in one of which a demonstrating track will be provided.

### A Record Long-Distance Electrical Run in France.

SOME further particulars are available of the electrical vehicle employed by Le Compte de Chasseloup-Laubat in his recent run from Paris to Rouen (84 miles) on one charge of the accumulators. The vehicle, which was constructed by M. Jeantaud, weighed complete 2 tons 140 lb. The wheels were all 41 in. in diameter and fitted with Michelin pneumatic tires. The battery consisted of 80 Fulmen elements (B17 type) and weighed, including the trays and connections, about 16 cwt. 78 lb.

### More Motor-Car Races in France.

ARRANGEMENTS are at present in hand for still another motor-car race in France. It is to be run off about August 15th, the course being from Malo to St. Omer and back *via* Calais, a total distance of about 120 kilometres.

### Electrical Vehicles in Italy.

WE learn from an Italian correspondent that a company has just been formed in Milan with the title La Società Italiana di Vetture Elettriche Turrinelle & Co., to construct electrical vehicles. The Company has already had a car built in Paris in accordance with its designs; it is convertible from a coupé to Victoria and *vice versa*. Two electro-motors are provided, one to each of the rear road wheels, and are stated to have a capacity of 4 h.p. The battery consists of 44 accumulators of the Faure type; its weight is stated to be 453 kilog.; and its capacity, a run of about 62 miles. The vehicle complete weighs about 1 ton 3½ cwt.

### The Gobron-Brillié "Silent" Motor-Car in Belgium.

It is announced that Messrs. Gobron and Brillié of Paris have ceded the Belgian rights in the "Silent" motor-car to M. Nagant of Liège, who is arranging for the manufacture of the same in Belgium. A brief description of this vehicle, it may be remembered, was given in our report of the exhibits at the recent Richmond Automobile Show.

### A Serious Accident in Paris.

PARTICULARS of the death in a motor-car accident of M. Duchemin, the well-known journalist, are to hand. Unfortunately, one of the two engineers who went with him was also killed. When the accident took place the car was, according to a telegraphic despatch, making its trial trip on the road from Vailly to Jars. The vehicle was going at the high speed of forty-five kilometres per hour, and at a sharp turn in the road it ran against a rock at the far side. M. Duchemin was thrown out and his spine broken, death being instantaneous.

### The Sphinx Petroleum-Spirit Motor.

LA SOCIÉTÉ DES MOTEURS LE SPHINX is the style of a new concern which has just been registered at Levallois-Perret, France, with a capital of £9,000, to manufacture the "Sphinx" petroleum-spirit motor, recently described in this journal.

## SCOTTISH NOTES.

### Not a Motor Accident.

AN accident of a somewhat serious character took place three miles from Lanark on Saturday last. A horse-drawn *chars-a-banc*, with a party of the Busby Football Club, numbering twenty-five to thirty persons, was upset through the failure of one of the wheels, and the whole of the party were precipitated to the ground, with the result that while all were more or less injured some half a dozen were seriously so. This accident, which occurred in a locality which is a favourite resort of Scotch motor-cars, was reported in the general press in the form of an obscure paragraph of some six or eight lines. Had this been an accident to a motor-car, caused either in the same or any other way, the paragraph would have received the most prominent position, with headings in leaded type. The attitude of the general press is, no doubt, being modified to reflect the up-to-date public feeling with regard to the motor-car movement, but much still remains to be desired. Considering the large number of motor-cars now in use and the comparative inexperience of many of the owners the infrequency of accidents is a striking testimony to the safety of the new vehicles.

### The Holiday Carnival.

GLASGOW and the big industrial populations of the West of Scotland are this week holding high holiday. The public works are closed for eight to ten days, and the favourite country and seaside resorts are full to overflowing with the holiday-makers, and from the various places privileged to have public motor-car services reports of highly satisfactory traffic receipts have reached me. At Ayr especially is this the case, the number of visitors to the land o' Burns being apparently greater than ever. This district, which is one of the most popular in Scotland, is served by the Glasgow and West of Scotland Motor-Car Co., Ltd.

### The 1900 Boom.

A STRIKING evidence in support of the belief expressed in last week's *Motor-Car Journal* that the year 1900 would witness a general boom in motors in this country reaches me this week. From a source which I have usually found reliable I understand that Stirling's Motor-Carriages, Ltd., of Hamilton, have orders now on their books for something approaching £125,000.

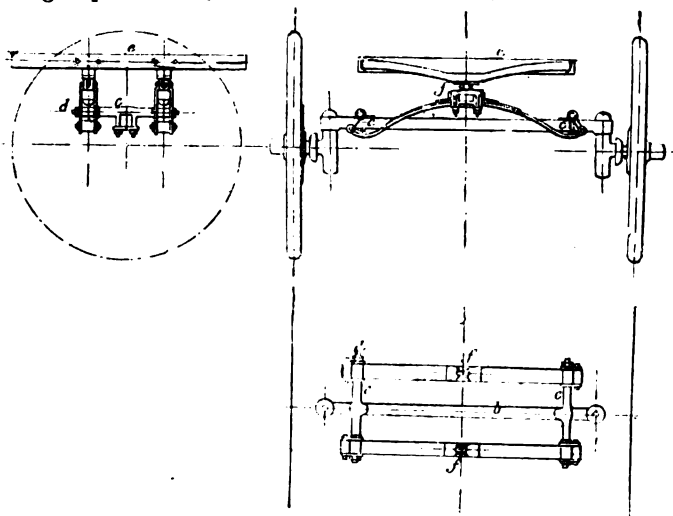
### Management of Motor-Cars.

I HAD the pleasure of meeting Mr. James Burns, town clerk, Motherwell, on his Daimler wagonette last week. Mr. Burns informed me that he had covered something like 1,500 miles in the course of the short time which he had been using his car, and during that period he has been able to manage the vehicle entirely without assistance; and as I believe this car is in daily use it is a very convincing proof of the simplicity in the management of a well-made motor-carriage, and also a testimony to its reliability. Mr. Burns informed me that he was starting on Wednesday for a few days' tour in the Highlands.

"BROWN HEATHER."

## THE NEW JEANTAUD FORE-CARRIAGE SUSPENSION.

**M.** CH. JEANTAUD, of 51 Rue de Ponthieu, Paris, the well-known French builder of electrical motor-vehicles, has lately devised a new method of supporting the fore-carriage of motor-cars, which, it is claimed, while not reducing the degree of "lock" permitted to the wheels, ensures a perfect connection between the vehicle and the fore-carriage. Fig. 1 is a transverse section, Fig. 2 a front view, and Fig. 3 a plan of the new arrangement. As will be seen from Fig. 3, it comprises two springs arranged parallel to, and one on each side of, the front axle *b*,



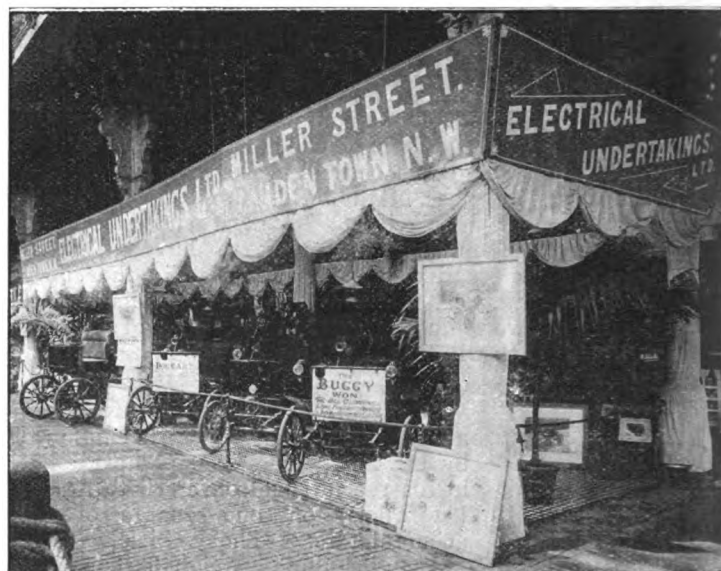
FIGS. 1, 2 AND 3.

and supported on arms *c* in such a way as to form a parallelogram. The "body" of the vehicle *e* rests on the centre of the springs by the intermediary of two supports *f f*, around the axes of which it is free to oscillate. The links *d* which connect the springs to the arms *c* are so arranged that, while allowing the springs all their elasticity, any lateral displacement of the same is prevented, although no guides are employed. M. Jeantaud claims for the new arrangement that it permits the wheels to be locked to go degrees, and to be turned without slip, at the same time reducing the chance of accident to the fore-carriage.

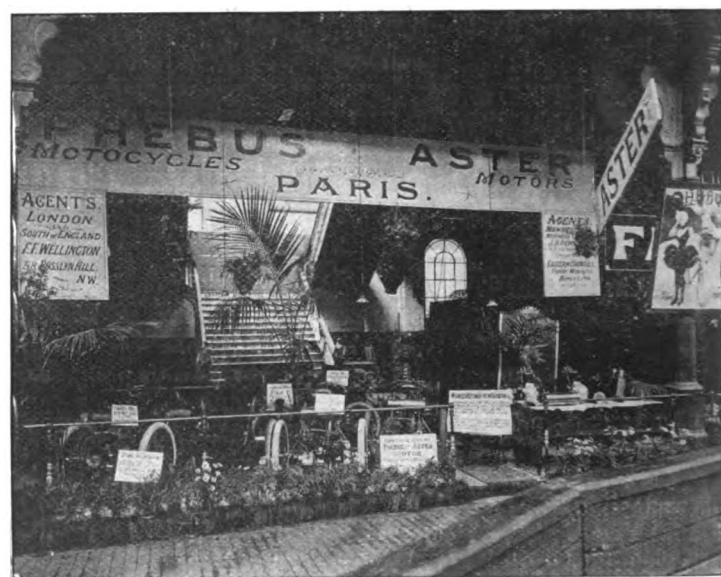
### Motor-Car Fright at Maidenhead.

THE unfortunate accident at Maidenhead, by which Miss Bulkeley lost her life, seems, from correspondence we have received, to have thrown the people of the locality into something approaching panic, and the violent tirade of Dr. Gordon Stables has doubtless contributed to the unnecessary feeling of alarm. Motor-car drivers recognise their responsibilities, and are not likely to go beyond legal limits. We have not heard of any dangers from such causes having yet been experienced at Maidenhead, and in the late accident the temper of the horse, which has, we since learn, been destroyed, was to blame. A warning to drivers of motor-cars and cycles to proceed leisurely through the narrow streets of the town has been issued by the Mayor, and the residents should be re-assured by the fact that stringent police regulations are to be enforced. At the coroner's inquest concerning the death of Miss Bulkeley, Dr. Charpentier, the driver of the car, was exonerated from all blame. Commenting on the sad affair, Dr. Gordon Stables, whose wanderings in his caravan has attracted much attention, makes a furious attack on "motor-car madmen," and talks of the "murder of poor Miss Bulkeley" in a most impassioned and prejudiced vein. Seeing that Dr. Charpentier rendered help to the injured lady, and that he was exonerated by the jury, it does not do credit to Dr. Gordon Stables that he should have let his pen fly in such a highfalutin' manner.

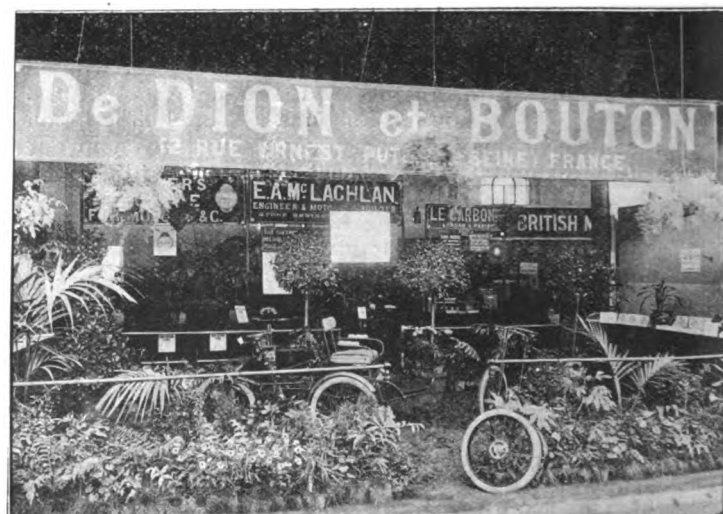
## SCENES AT AGRICULTURAL HALL.



VIEW OF ELECTRICAL UNDERTAKINGS', LTD., STAND.



VIEW OF MESSRS. NOÉ BOYER & Co.'s STAND.



VIEW OF MESSRS. DE DION-BOUTON'S STAND.

## MOTOR-CAR SHOW AT DOVER.

SIR W. H. CRUNDALL, J.P., Mayor of Dover, having suggested an exhibition of automobiles to be held simultaneously with the meeting of the British Association at Dover in September, this has now been arranged, and will be held on the Athletic Grounds. As the British Association's meeting will be held in conjunction with that of the French Society taking place at Boulogne an interchange of visits will be made, which should add to the value of the proposed exhibition, of which Mr. Frank E. Beeton, Park Street, Dover, is the secretary.

On Tuesday, September 19th, the Mayor will hold a reception on the ground and declare the show open, and a parade will be organized round the track for those machines which are suitable for the purpose. The parade may be extended through the town in the evening. On the Wednesday and Thursday it is proposed to have competitions and judging for prizes.

The conditions of competitions have not yet been decided, but a thoroughly representative judging committee will be chosen, and prizes or certificates awarded for (1) Excellence of driving mechanism; (2) Novelty of purpose or design; (3) Elegance of design and workmanship; (4) Utility of vans and other automotors; (5) Practical running and general control of automobiles; (6) Economy of fuel; (7) Speed in actual racing.

The object of the show being primarily to provide an interesting display and to benefit the motor-car industry, it is proposed to make only a small charge for space to cover cost of erecting tents and other expenses, and the fund will be added to by town subscriptions for the provision of prizes.

## CORRESPONDENCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As promised in my letter of last week I now give you my experience and opinion of motor-caring. On Wednesday last I was invited to try my nerves on a Daimler motor dog-cart. The run was in connection with *The Motor-Car Journal's* "efficiency trials," and was from the Agricultural Hall to Baldock and back, seventy-two miles, with no stoppages except at Baldock. The time test was severe when you take into consideration the traffic to steer through and the hills to climb, such as Highgate, Barnet, and several others, both long and steep. Whoever laid out the route meant to give the public some idea of the capabilities of motor-cars. Imagine coasting down hill with the sixteen miles per hour gear on, and then allowing the car to increase its momentum until arriving at the bottom, where several sharp turns had to be negotiated, with heavy traffic coming in the opposite direction. This would try the nerves of any one not acquainted with the fact that the brake is so powerful that the car can be slowed down to a crawl, and then to a dead stop in twice the car's length. To a passenger riding on a car for the first time it means holding your breath and saying your prayers. I am informed by a friend from Paris that the mishaps to motor-cars compare favourably with mishaps to horses; and as the business of motor-car manufacturing increases, and with our high-class engineering, we shall have them as near perfection as possible.

If the manufacturers want to hasten the boom for motor-vehicles they should send down a few cars on Sundays to Epping Forest, route through Whitechapel, Mile End, Bow, Stratford, Leyton, Leytonstone, and on to the Forest Hotel, where they would have plenty of metal to compete with, as there are hundreds of trotters and A1 turns-out on the road all day long.

Next week I propose to give you the opinions of some of my lady friends on motor-caring. Yours truly,  
July 18th. Mrs. SUBURBAN VILLA.

## ADVENTURE WITH A MOTOR-CAR.

EDGAR HARRIS, an engineer, in the employ of Mr. Frank Morris cycle dealer, King's Lynn, was charged at the Southwell Petty Sessions with driving a motor-car more than twelve miles an hour in the parish of Upton on July 3rd. He had not arrived when the case was called on, and service of the summons was proved by affidavit. When the second witness was giving her evidence he arrived, and what had been said previously was read over to him. He pleaded not guilty.

Mrs. Elizabeth Flint, of Ley Fields, whose husband is employed by Mr. Waddington, said: On Monday, July 3rd, I was driving a pony and trap from Averham Flash. It was in the morning. My sister was with me, and we heard something coming along the road before we could see it. The mare began to play up, and we pulled her into a gateway as far as we could get out of the road. We were going from Averham to Upton. The car was going at the rate of between twenty and twenty-two miles an hour. The man could not pull up. It would be going down-hill for some distance. The motor was going towards Newark, and it had got over the bridge just coming down the hill. The man kept coming on with the car, though he could see the mare dancing about. She turned round and fell down on one side and broke both knees. She also broke the shaft and hurt my sister. The defendant waited some time before he came to my assistance; he did not come until I invited him to come and help me. My sister was in the trap and fainted, and did not speak a word until half an hour afterwards. It gave me a shock. We did not fall out of the cart, but my sister fell down in the cart and I fell on the top of her. I can't remember how we got up nor anything about that, it frightened us so. When the mare fell down the car got past but not before she was down.

General Warrant: Was he trying to stop?—He had plenty of time to stop, because he could see the mare dancing about.

Cross-examined by defendant: How do you know the car was going twenty miles an hour?—I thought so because you could not pull up or you would have done.

How do you know what pace it was going?—To my thinking it was.

You mean to say you guessed at it?—If you had been a man—

We are not talking about whether I was a man or a woman.

General Warrant: Wait a minute, how do you know that it was going twenty miles an hour—you say it was to the best of your judgment?—Yes.

Defendant: You didn't hold up your hand to stop?—We were frightened. If you had been a man you would have seen the mare.

Never mind about being a man, I want to know what you were doing. When you saw the car you pulled the horse back on its haunches and broke the shaft?—You drove the thing near us.

I was on the right side of the road. I knew nothing about the summons till I got to Lynn.

General Warrant: His question is, Did you pull the horse up and make it tumble over, breaking the shaft?—No.

Mrs. Hannah Elizabeth Flint, sister-in-law, said: On Monday, July 3rd, I was in company with the last witness. I live at Park Leys, and am the wife of a labourer. We met the defendant driving the motor-car. I should think he would be going about twenty miles an hour; he was going at a great speed. He was going down the bit of a hill against Upton. The fright of the motor-car caused the pony to fall down, and it broke both its knees; it also hurt its side, breaking the shaft. I could not tell anybody what was the matter with me. I was miserable for some time.

By defendant: Which side of the road was I on?—On the left side, but you did not stop while the mare was down.

General Warrant: Was he on his proper side of the road?—Yes.

Defendant: Did you make any motion or hold up your hand for me to stop?—No, it took me all my time to hold the mare I was driving.

It did not take both of you to hold the mare. One could have held a hand up if you had wanted me to stop.—It was in your place to stop when you saw the mare.

It was not my duty to look after your horse; I have to look after my car. You said you fainted. How did you manage to get the horse up? You held the horse's head and danced round it.

General Warrant: Was the horse dancing about so that he could see it?—Yes; he could see it before it fell.

William Stimson, County Council roadman, said: I live at Upton. On Monday, July 3rd, I was at work on the road leading from Upton to Averham Flash. On the Upton side of the bridge I saw the defendant driving a motor-car. It was half-past ten or a quarter to eleven. I could not say what speed he was going, but he was going a tremendous pace down that hill.

Superintendent Hopkinson asked the witness if he could tell what pace the car was going.

General Warrant: He is quite fair. He says he can't tell; but he was going a tremendous pace down the hill.

In reply to further questions, witness said he did not see the accident, and was 150 yards away.

Defendant, in addressing the magistrates, said a telegram had been sent to the Daimler Car Company at Coventry asking whether it could travel more than twelve miles an hour. He produced a telegram to his employer in answer, which stated that it was geared to travel twelve miles an hour, and could not go faster. These Daimler cars were geared to go a certain number of miles an hour. This one was a wagonette to carry eleven. He brought this car from Lancaster, starting on Saturday morning, and got to Lynn on Monday night, 192 miles, or an average of seven miles an hour.



General Warrant: It is well known that these cars are geared to go four, eight, or twelve miles an hour; but surely when going down hill you can exceed that?—Defendant: It all depends on the hill.

Mr. Wright: Do you shut the motor off?—Yes, when going down hill. If it over-runs the motor, the brakes are applied.

General Warrant said defendant had made a statement, and he could give it on oath if he liked.—He then went into the witness-box, and deposed to many of the facts already stated. He said: I think the car was not going more than twelve miles an hour.

General Warrant: But it is not a matter of thinking; you are on your oath now. Do you say positively it was not going more than twelve miles an hour?—It would not go that unless it was a steep hill.

But it was a steep hill, wasn't it?—I don't think it was. They did not hold up their hands for me to stop, and the horse was not restive. It was not dancing about at all. The driver pulled the horse back on its haunches, and it fell on its side. I stopped the car and got down and assisted this woman to extricate the horse, which was not hurt as far as I could see. One of these witnesses was reviling me the whole of the time.

General Warrant: We need not go into that—that has nothing to do with it. What we have to do with now is your case, whether you were going more than twelve miles an hour.

Mr. Wright: Can you tell why the horse fell?—Because it was pulled back on to the grass.

Supt. Hopkinson: Did you notice if its knees were broken?—No.

Did you see the woman faint?—No, neither of them did, because one had a lot to say, and the other tried to assist the pony on. I got there immediately the accident happened. I did not sit in the car. The motor was disconnected from the car; it was not driving the car.

Would it increase the speed?—No.

Did you run past them before you stopped?—I stopped a distance of six or ten yards from them.

Will you swear the car will not travel more than twelve miles an hour down-hill?—It would depend on the steepness of the hill. That's not the case.

Supt. Hopkinson: Yes, it is.—Defendant: It is not justice to me. A bicycle will do the same if the brake is not put on when it is going down hill.

General Warrant: Had you a brake?—Yes, certainly.

Did you use it?—Yes, or the car would have got away.

Mr. Wright: What weight is it?—About a ton.

General Warrant: You say that as soon as the horse got on the grass it tumbled over. Was it a bad place on the grass?—If the horse was pulled back it was bound to fall.

The roadman was recalled, and in reply to questions from the Bench said the place where the pony was pulled to was not even ground; it was going in a gateway.

General Warrant said the magistrates were of opinion that defendant was driving over twelve miles an hour. They knew the hill, and it was a narrow, steep hill, and there was no doubt whatever that he was going a considerable pace. It appeared that he had been cautioned at Hunstanton Petty Sessions for fast driving a light locomotive, and the present was not his first offence. He would have to pay £2 and costs.

Superintendent Hopkinson asked the Bench to allow 2s. each to the three witnesses, and this the magistrates agreed to.

The fine and costs amounted altogether to £2 19s., which defendant immediately paid.

### ANOTHER FURIOUS DRIVING CASE.

CHARLES HIGGS, of Upper Gloucester Place, Regent's Park, was summoned last week for furiously driving a motor-car to the danger of the public. Police-Constable 237 D said that the car was being driven along the Park Road at quite fourteen miles per hour. The defendant stopped at a public house, and his name and address were taken. The defence was that the speed was not so great as that stated. The defendant was fined 10s., with 2s. costs, or seven days imprisonment.

### A REGRETTABLE ACCIDENT.

ON Monday morning, between 11 and 12, as Mr. Leonard Bentall, J.P., was driving himself in his dog-cart through Langford to Maldon, a motor-car and two motor-tricycles came rapidly down the railway bridge. Mr. Bentall, hearing the warning signal, pulled aside, and the car passed by, but one of the motor-tricycles seems to have frightened the horse, which swerved sharply, and ran up the bank, turning the cart on its side, and precipitating its occupant heavily on to the road, flinging him some yards. The animal then turned round, and the cart catching against the stump of a tree pulled it out of the ground, finally colliding with an elm tree. The vehicle was smashed to pieces, and, the harness breaking, the horse became free. The second motor-tricyclist, seeing that the road was blocked by the horse and cart, and Mr. Bentall lying in the way, turned into the hedge, was thrown off his machine, but was not injured. Meanwhile, Mr. Bentall was taken into the Langford Post Office, opposite to which the mishap occurred, and Dr. W. E. Facey was summoned. The sufferer was in an unconscious state, and would appear to have sustained concussion of the brain. About two o'clock Mrs. Bentall was informed of the occurrence, and was shortly afterwards driven

over to her husband's bedside. Drs. Facey and H. Reynolds Brown visited the patient, who up to a late hour in the afternoon had not recovered consciousness, and it is feared the base of the skull may be fractured.

### A MOTOR SMASH.

AN exciting scene occurred in High Street, Sittingbourne (Kent), on Tuesday morning. A team of horses attached to a farm wagon was proceeding through the street when the horses took fright at a motor-car, and two of them broke loose. One dashed clean into a draper's shop window, shattering the glass and literally wrecking the window. The animal died from its injuries.

Later information shows that the motor contained Mr. and Mrs. Hugh Campbell, of 63 Belsize Park, Hampstead, and Mr. and Mrs. Arthur Hordern, also of Belsize Park. They were travelling back from Margate to London. The car was under the charge of Mr. George Bence, engineer, of Watford.

The wagon attached to three horses collided with the motor-car, throwing the occupants out, and damaging the car; after which the three horses tore down the street at a terrific rate. The two leaders broke away from the third animal in the shafts, and the poor beast, with a couple of tons weight behind it, headed straight for the large thick plate-glass window of the draper's shop. It went clean through this, and then dropped down dead in the middle of the shop.

A servant girl who was sweeping the shop at the time had a miraculous escape.

The occupants of the motor-car were bruised and shaken, the ladies naturally being very frightened. The party are now staying at the Shakespeare Hotel, Sittingbourne.

### MOTOR-CAR ACCIDENT.

MISS THERESE RODNEY, a lady residing at 3 Vyvyan Villas, Bayswater, was driving her own electric motor-car along Shenlake road, W., on Saturday morning last, when a little girl ran suddenly into the road and would have been knocked down and run over by Miss Rodney's motor-car but for that lady's promptitude in steering her vehicle on one side. By doing that, however, she brought her car into the way of a brewer's dray, and the shock of the collision sent the motor on its side, and threw Miss Rodney out on the road. When picked up she was found to be severely injured, and was at once put into a cab and taken to the hospital.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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## COMMENTS.

### The Liverpool Trials and the Automobile Club's Policy.

AT the Richmond dinner on Monday, Sir David Salomons, in referring to the Liverpool Self-propelled Traffic Association's forthcoming trials, stated that it was not his intention to subscribe to or have anything to do with any movement in the automobile world that was not originated by the Automobile Club, but that if the Club started a fund he would subscribe towards it. This statement coming from Sir David Salomons is an important one, and as such should be reflected upon by the vast numbers of riders and others interested in automobilism who are not yet members of the Club. Monopolies are objectionable to English people, and cannot be tolerated. It is well known we have been staunch supporters of the Club from the first, and, notwithstanding our little friction of last year, we have continued to give the best of our support. But we are afraid we cannot follow the latest move and ignore all motor-car movements outside of the Club. If the Club is to exist for the good of the industry every effort to popularise motor-cars should be supported in an official way if possible; and, where not, the members should be allowed freedom to act as discretion dictates. The Liverpool Self-propelled Traffic Association, which is an affiliated branch of the Club, is suffering this year from a lack of financial support—noticeable, unfortunately, in the case of many of those who, last year, were its staunchest supporters. We consider that the trials which take place next week are the most important yet held, and should be supported by the entire industry of the kingdom. Certainly we hope our readers will recognise this by attending in numbers to support Mr. Shrapnell-Smith, the Honorary Secretary, at Liverpool on Monday and the following days.

### The 1900 Exhibition.

THE date fixed for next year's Motor-Car Exhibition, to be held as usual at the Agricultural Hall, Islington, is from Saturday, April 14th, to Saturday, April 21st, and to ensure a large attendance of interested people we have, to the sacrifice of the gate money, decided to give every exhibitor twenty tickets of admission for every pound paid for space taken. There is no doubt each exhibitor will distribute them in such channels as he thinks will bring most customers, and so the value of the Exhibition as a means of business will be enhanced—even when compared with the recent Agricultural Hall success in that direction.

### The Richmond Automobile Show.

A SPECIAL meeting of guarantors of the Richmond Show, manufacturers, and others was held at the Automobile Club House, Whitehall, on Tuesday last. There were about twenty members, guarantors, and manufacturers present, and it was decided to hold an exhibition next year,

commencing March 24th, and closing on Saturday, April 7th. The announcement was made that the deficit on last year's exhibition was so much—a very heavy amount; but the chairman, Mr. Beaumont, stated that the information was private. To this we take exception, as the guarantors, we consider, were in the position of shareholders at a company meeting, and as such in a position to use the information as they like. The loss was a very heavy one, and altogether out of proportion to the results achieved. Upon this matter we can speak with authority, and trust that a full balance-sheet, showing receipts and disbursements, will be forthcoming to those who guaranteed the Club against loss, and who have incurred the financial liability.

### Raising the Speed Limit.

GENERAL CAREY's speech at Richmond was a welcome one, and we are glad to see that the Automobile Club have not lost any time in making a move in the matter, as will be seen by a letter in another portion of the present issue. The light passenger vehicles, we consider, can well look after themselves; but it is the vehicle of 30 cwt. and upwards to which the law should give greater freedom. Many and various are the modifications that are required, and then an enormous development will take place. France for some time, no doubt, will hold its lead for light vehicles; but at present, with the unreasonable restrictions, the possibility of Great Britain having any record in heavy vehicles is remote indeed.

### Motor-Car v. Tram-Car.

LYNESIDE seems the first district to realise the possibilities of the motor-car and its growing development into the "popular omnibus." Frequently have we referred to the additions made from time to time to the motor-car services of Newcastle-on-Tyne, and the coming vehicle of city transit is now so common an object in that city that "nobody turns his head to look as it passes." Having reached that stage its popular favour must be regarded as fully established. There are now three companies engaged in the business at Newcastle. Six new cars have just been put on the roads, and fifty others have been ordered. These facts, coupled with the comfortable, rapid and manageable character of the motor-cars already on the streets, has led the *Newcastle Daily Chronicle* to call for the extension of the motor-car service and the disuse of the powers for tramway construction recently granted by Parliament. "Tramways," says our enlightened contemporary, "are not wanted. They do not and cannot meet the requirements of the community. The tramcar is frequently in the way, and other vehicles are often obstacles to the tramcar. And we maintain that to use the powers obtained for the construction of electric tramways at a cost to the ratepayers of half a million of money would be to abuse them greatly."

### Where the Motor-Car Wins.

Not content with its destructive criticism of tramways, Mr. Cowen's powerful organ proclaims the advantages of the motor-car in the clearest possible way:—"In addition to furnishing comfortable riding it gets over the ground quickly—in about one-third of the time occupied by the tramcar. The motor-car has no horses to fall down, and no need to slacken speed because a brewer's dray or a railway trolley is on the track. Short, light, and manageable, the motor-car worms its way amongst the traffic, going where it listeth with the utmost facility. It can always outflank a lumbering wagon; and, within limits, all roads lead to its destination." Such statements are well calculated to inspire the public with confidence, and we are glad to see that the duty of the Corporation is equally plainly set forth: "It ought to substitute good roads for those which at present are the worst in Europe outside Russia, and leave the rest to private enterprise and the motor-car."

### Cost of Horse Keep.

THE utilisation of the motor-car at Sir Weetman Pearson's garden party, as recorded in our columns last week, proved its advantages over horse-drawn vehicles in a very noteworthy way. A few figures relating to the keep of horses will be of interest to those about to adopt the motor-car, and the chairman of the London Improved Cab Company, Ltd., has just given the exact information required. During the year ended May 31st the prices of corn and other feeding stuffs were favourable to owners of horses. Hay and mixtures were of exceptionally fine quality and remarkably cheap, so that no under-estimating need be feared in the following figures: The cost of feeding each horse, 7s. 3½d.; litter cost, 3.72d. per horse; and shoeing averaged 1s. 4d. per week in each case. This was in a year when the health of the animals was extremely satisfactory, and seeing that the stock of the concern numbers 439 vehicles, the average may be regarded as a very fair estimate of the cost of keeping horses on a large scale, although, of course, it will amount to considerably more in the ordinary way.

### A Growl from the Stable.

WE wish the Editor of the *Stable and Kennel* had been present at the dinner of the Automobile Club on Monday, for he would have learned that there is no prejudice against horses among those who appreciate the motor-car. As Mr. Harmsworth reminded the company, the guest of the evening, Baron de Zuylen, has perhaps the finest stables in Europe and several of the gentlemen present love the horse as strongly as they like the motor-car. In fact, both in France and in England, the best patrons of the industry are to be found among horse owners. That being so, we are surprised that, like a certain financial daily, the *Stable and Kennel* should so frequently snort and bark against the inevitable—for such the motor-vehicle can be regarded. "For Heaven's sake," cries our alarmed contemporary, "let us pause and soberly consider the price we may be called upon to pay for adopting the present fatuous horseless-carriage craze, without proper safeguards for the security of life and limb." If the Editor's nervous state is as bad as that he had better stay in his stable—or kennel.

### Backward America.

WE have become so accustomed to regard the United States as being such an up-to-date country that the slow progress of the automobile movement on the other side of the Atlantic is a matter of surprise. Even in America it is recognised that that country is taking a place very low down on the list in the new movement. The *Horseless Age* of New York, for instance, in referring to the

recent motor-car exhibitions in England, remarks that "they afford a fair idea of the many different types of vehicles now on the market in Great Britain, and a realization of our own inexcusable backwardness in putting the new vehicle on a manufacturing basis in the United States. It was not until November, 1896, that the Red Flag Law was abolished in England and it became lawful to use motor-vehicles upon the public highways, yet in less than three years a very noticeable progress has been made." Our contemporary adds:—"If we search for a reason for our own deficiencies in the motor industry we shall not need to look further than the inventors and promoters whose absurd claims and wild-cat schemes have travestied the industry and kept capital and sound business ability aloof from it. Happily the influence of the boomers is on the wane, and sober sense and legitimate enterprise are beginning to prevail. We shall not long be at the end of the procession."

### Motor-Tricycles at the Crystal Palace.

JUDGING from the information we have been furnished, those interested in motor-tricycle races will find a good afternoon's sport offered them at the Crystal Palace on the coming August Bank Holiday. The programme, which will be taken in hand at 1 p.m., comprises a two miles handicap, a five miles handicap, and a ten miles scratch. We learn from Mr. F. W. Baily, the hon. superintendent of the Crystal Palace cycle track, that he has received the promises of nearly all the most prominent motor-cycle riders, and with the experience gained in handicapping motor-cycle races it is expected that the finishes will be much closer than they have been in the past. In addition to the above events, Mr. C. Jarrott having challenged the holder of the Crystal Palace Brassard (Mr. S. F. Edge), the second race for this trophy will be held on the same day. The race will be for one hour, and will no doubt prove very exciting. Mr. Baily also asks us to point out that he is open to receive formal challenges (with, of course, the requisite entry fee) from any motor-tricyclist who would like to endeavour to possess the Brassard at present held by Mr. Edge.

### A Leighton-Buzzard Resolution.

THE Leighton-Buzzard Board of Guardians, at its last meeting, adopted a resolution to the effect that the attention of the Legislature be called to the danger to vehicular traffic by the dangerous speed at which motor-cars are run. The discussion which led up to the adoption of the resolution was of an amusing character. For example, one member stated that "when meeting a motor-car the animal one was driving had to crouch in the hedge, unless it was a donkey or some donkey that could not move. The motor-cars smelt of the infernal regions." Another member doubted "whether the danger from motor-cars arose from their speed, but thought it arose rather from their emitting steam, and their construction." While we do not uphold in any way with motor-car drivers exceeding the legal limit of speed permitted to automobile vehicles, we do suggest that before any public bodies pass resolutions of the kind above referred to its members should make themselves better acquainted with the subject than, judging from their remarks, are the members of the L.B.B.G.

### A Service for Northamptonshire.

A SCHEME is being proposed in Northamptonshire to establish a motor-car service between Bozeat, Wollaston, and Wellingborough, and the promoters have been accorded hearty support in the localities which would be benefited by such provision. At present the communication between these places is very primitive, and not only is it thought that the projected service would prove popular with passenger traffic, but hopes are even entertained of a good revenue from the conveyance of merchandise.

**Carriage Builders' Meeting.**

ON September 12th the Institute of British Carriage Manufacturers will hold its twelfth annual autumnal meeting at York, under the presidency of Mr. S. G. Turner, of Bristol, and the strong local reception committee that has been formed is evidently determined to make the assembly an agreeable and pleasant function. The papers will be by Mr. G. K. Hooper, on the "Suspension of Carriages"; and by Mr. P. W. Northey, on "The possibilities and uses of aluminium as applied to carriage building." Both should be of interest to all engaged in providing for vehicular traffic—whether horse or other motive power; and, seeing the close association between the motor-car and carriage-building trades, some of the enterprising makers of the former may find it useful and profitable to be in York during the meeting of the Institute.

**Suggested Taxation.**

AT Ipsden House, Reading, lives a gentleman named Mr. Henry Hutt, who does not like motor-cars any more than did the Rev. Robert Spalding appreciate London after his quest of a bath bun and an acidulated tablet. And so a local paper has been favoured with a letter, from which we learn that Mr. Hutt once met a motor-car with a broken oil-can that burst and made "such a dreadful smell that the horses I was driving refused to come within twenty yards of it." That cannot be urged against the car, for the sensitive creatures thus avoided all danger by keeping away from a novelty to which they have probably got used by this time. But Mr. Hutt has a suggestion as well as a denunciation to make, and hopes to see motor-cars taxed—we suppose that is an alternative to their drivers being imprisoned. Taxation might restrict the use of these "dangerous machines." In conclusion he asks: "Is it unreasonable for gentlemen or tradespeople who are heavy taxpayers to expect protection" from these things? Unfortunately for his case gentlemen and tradespeople are the two sections of society with whom automobiles are most popular and to whom they are most serviceable.

**Motor-Cars in Manxland.**

THE hilly district of the Isle of Man will provide splendid tests for the abilities of motor-vehicles, and now that they have been legalised in the island a service will be promptly established. The Act has been promulgated with all the ancient ceremony from Tyndwall Hill, and the Manx Company that has undertaken the new venture has already a car on the way. It is of the *chars-a-banc* type, and should prove as popular a service and as good an investment in Manxland as elsewhere.

**Motor-Cars in Chicago.**

CONSIDERABLE excitement has lately prevailed in motor-car circles in America by the issuing of a regulation by the local authorities in Chicago excluding automobile vehicles from the parks and boulevards in that city. It is satisfactory to find that the new movement has already sufficient adherents to take care that no illegal block is put in its way, for, as a result of the test case which was brought before the courts by the American Electrical Vehicle Co., the order has been made void. Judge Gibbons, who heard the case, after remarking that while the Park Board can and should limit the rate of speed it has no more right to prohibit the automobile than the bicycle or the dog-cart, gave the following decision: "The order in question is void in singling out automobiles by name and placing them under the ban of outlawry, when, as a matter of common observation and scientific knowledge, there is less danger in propelling an automobile than there is in driving a horse and buggy."

**An Example for Agriculturalists.**

IT should be of interest to owners of large farms all over the country to learn that the Daimler Motor Co., Ltd., of Coventry, has just contracted to supply no less than three 12-b.h.p. motor-vans to Mr. W. F. Locke-King, of Weybridge. These vehicles are intended for the transport of milk, poultry, and other farm products from his farms in the neighbourhood of Weybridge to the London market. At present the deliveries are made daily all the year round by rail, but it has been estimated that, even after allowing a considerable percentage for depreciation and repairs, there will be a large margin in favour of the transport by motor-van, while furthermore a saving of at least four hours per day in point of time will be effected, which, spread over a year, will be no mean item in itself. Mr. Locke-King is to be congratulated on being one of the first to recognise the advantages of motor-vehicles from a commercial point of view, and the example is one which no doubt will commend itself as worthy of being followed by many other proprietors of large farms in the United Kingdom. In addition to the three vans, we understand that Mr. Locke-King is also having built a 12-b.h.p. Daimler wagonette, which he intends to use for the purpose of paying visits of inspection to his various properties.

**The "Oxford" Motor-Car.**

THE three-wheel two-seated car known as the "Oxford," which was shown to the public for the first time at the recent exhibition at the Agricultural Hall by Messrs. F. Jackson and Co., Ltd., of 77 Oxford Street, London, W., was, we learn, subjected to a long-distance trial on Thursday of last week through which it emerged successfully. Starting from the address given above at 10.45 a.m. the vehicle conveyed its passengers to Colchester and back, reaching home the same evening at 10.30, equal to 11 h. 45 m. for the 106 miles, including stops for refreshment and also a long stay at Colchester. The makers inform us that the vehicle ran without the slightest hitch from start to finish with the exception that when it reached Tottenham Court Road on the return journey one of the belt fastenings broke. A brief description of the "Oxford" car was given in the report of the Exhibition in our issue of July 7th last. The two-speed gear employed is exceedingly ingenious and simple, and when the makers have reduced the somewhat excessive noise made by the motor the vehicle, in view of its relatively low price, should become a popular one.

**Royalty and Motor-Cars.**

AS we briefly mentioned in our last issue, considerable interest was displayed at the motor-carriages which figured at the Bagshot Fair last week. We understand that these consisted of a couple of Messrs. Hewetson's Benz Ideal cars, and from what we can gather Mr. Hewetson and Mr. Cole appear to have had a very busy time in driving the large number of "society" visitors around the royal grounds, the proceeds thereof helping to swell in no small measure the fund of which the Fair was the object. We learn with interest, too, that on Monday evening, the 17th inst., the Duke of Connaught himself was taken for a drive by Mr. Hewetson. We do not know if this was the Duke's first trip on an automobile vehicle, but in any case we understand that he was extremely pleased with his ride. Mr. Hewetson's subsequent passengers also included several other members of the Royal Family, among whom were the Princess Margaret of Connaught, Princess Victoria Patricia of Connaught, and Prince Arthur. Since writing the above, Mr. Hewetson has shown us a letter he has received from Surgeon-Major C. R. Kilkelly, of the Grenadier Guards, in which that gentleman states: "The Duke and Duchess of Connaught desire me to thank you very much for your great kindness in bringing down the motors."

### A Suggested Mutual Protection Society.

IN the course of a long letter to us this week in regard to the case reported in our issue in which Edgar Harris was fined at the Southwell Petty Sessions for driving a motor-car more than twelve miles per hour, Mr. Frank Morriss, of Kings Lynn, the owner of the vehicle in question—a Daimler-Rougemont wagonette—expresses some very strong opinions as to the way in which the evidence of inexperienced persons regarding the speed of motor-vehicles is received by the magistrates. In this case the wife of a labourer stated that the car was travelling at about twenty miles per hour, and although evidence was put in on behalf of the defendant that the car could not travel beyond twelve miles per hour a fine was imposed. Mr. Morriss concludes his letter by suggesting the formation of an Automobilsts' Mutual Protection Society, which should retain the services of a good advocate to deal with further cases of this kind. Mr. Morriss considers that by acting in consort in this way automobilists would receive better consideration at the hands of magistrates, who, he argues, are at present biased in favour of police and outside evidence. We should be glad to receive the opinions of our readers as to Mr. Morriss' suggestion.

### An Owner Wanted.

DURING the course of the Exhibition at the Agricultural Hall there was consigned to us from France a trailer for a motor-tricycle. The vehicle was apparently intended to be placed on exhibition; but, strangely enough, the consignor not only omitted to advise us, but no indication of the sender's name and address was to be found on the crate. In the meantime, we are storing the trailer, and if this note should happen to catch the eye of the sender we should be glad if he would communicate with us.

### Truth.

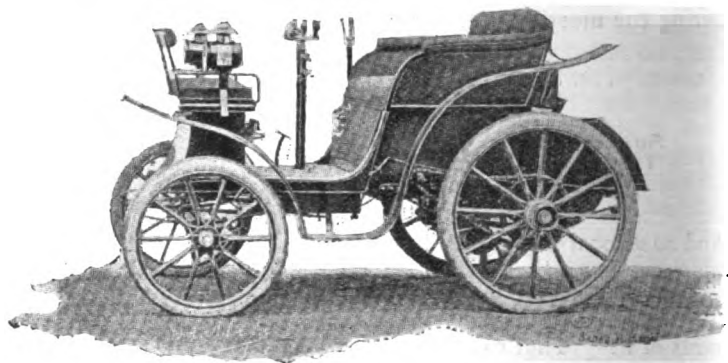
ECHOES of the recent Exhibition at the Agricultural Hall continue to reach us, and the newspaper publicity thus obtained for automobilism must contribute to the process of establishing it in public favour. *Truth* is on the side of the motor-car, and in a reference to the Motor-Car Exhibition says "it is only a matter of time for motor-traffic to take its place on the road and to be generally adopted." We welcome the conversion of our contemporary, and would suggest to Mr. Labouchere that he should become a motorist and join the Parliamentary Automobile Party, which at present consists of Sir Samuel Montagu, the Hon. J. Scott Montagu, and Messrs. Carlile and Dalziel—two on each side of the Speaker.

### Matabele Chief on a Motor-Car.

PRINCE LOBENGUELA of Matabeleland will have something to tell his dark-skinned countrymen when he returns from the grounds at Earl's Court, where he is now appearing as a warrior in Savage South Africa. Since his stay in this country he has had many surprises, the most startling being a ride through the West End on a Victoria, placed at his disposal by the British Motor Coupé Company. When the vehicle arrived to take him on the trip he wonderingly inquired after the horses, and was at first inclined to regard it as a "devil machine" calculated to carry him forth to regions unknown. At length he mounted, and enjoyed an experience that gradually restored his confidence in British institutions generally and the motor-car in particular. At the end of the outing he proudly patted the automobile as though it were a horse, and probably longed for the day when he may be able to mount a motor-car and return in glory to his old encampment.

## A NEW LIGHT FRENCH MOTOR-CARRIAGE.

THE accompanying illustration shows a neat type of light petroleum-spirit motor-carriage which has lately been put on the market by Messrs. Audibert and Lavirotte of 12 Chemin des Quatres-Maisons, Lyons. The motor is of the single-cylinder horizontal type, capable of working up to 4 h.p., with water-jacket and electrical ignition. It is located in the centre of the rear part of the frame, the power being transmitted by belts from the motor-shaft to the counter-shaft, and from the latter to the rear-wheel axle by the usual sprocket wheels and chains. Three forward speeds are provided, while a reverse motion is obtained by means of a cable which normally runs slack, but which can be tightened



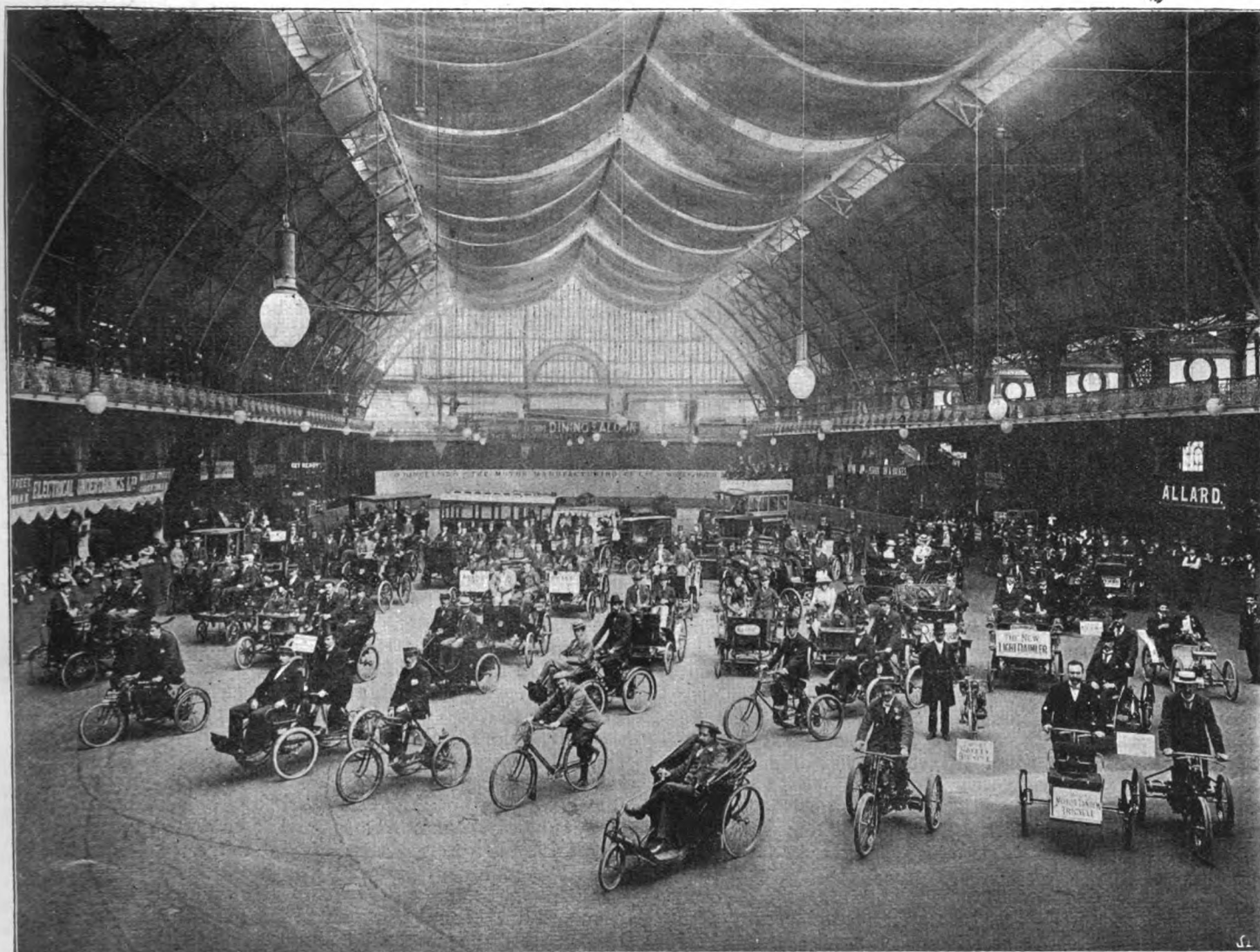
by means of a jockey-pulley controlled by a foot lever. All the speed-control levers are mounted on the steering standard. The road wheels have wood spokes and pneumatic tires. Petrol storage accommodation sufficient for a run of from 200 to 250 kilometres is provided. The makers state that the car can attain a maximum speed of from 35 to 40 kilometres per hour and that it will mount gradients of 1 in 10 at 10 kilometres per hour. The above is only one type of Audibert-Lavirotte car, but the firm are making a number of others, including a four-seated duc, a six-seated Victoria, a four-seated mail cart, a family omnibus, a four-seated Berlin, as also light vans and lorries, fitted with motors varying in capacity from 6 to 12 h.p.

SOME of the cabmen of Herne Bay are raising an outcry against the motor-cars that have lately been placed upon the streets of that rising seaside resort, and in a letter to the local press one plaintively asks: "Can nothing be done to prevent it?"—to which the growing popularity of the local motor-car service seems a negative answer.

A MOTOR-CAR has been landed at Durban, South Africa, for a gentleman in Greytown, who intends using it for traction purposes. The vehicle, which we understand is the production of the firm of Jesse Ellis, of Maidstone, is capable of carrying from ten to twelve tons, and is constructed to carry either passengers or goods.

THE meetings of the creditors and shareholders of the Chitty Dynamo and Motor Company were held on Monday at Serle Street, Lincoln's Inn. The Company was formed in November, 1897, with a nominal capital of £200,000, to acquire the patent rights for the construction of dynamo machines known as Chitty's patent. The Company went into liquidation in June last, the accounts filed showing unsecured debts £32,542, and assets £20,912. The contributories' deficiency is £44,459. The purchase price was £56,000, of which £11,000 was in cash and the balance in shares. The Company went to allotment in December on a subscription of £5,540. Premises were taken at Willesden Junction the same month, but no work was commenced until June following, the gross receipts from which were only £19 15s. 9d. The case was left with the Official Receiver.





From a Photograph by

A GROUP OF MOTOR-CARS AND CYCLES AT THE RECENT EXHIBITION AT THE AGRICULTURAL HALL, TAKEN IN DEMONSTRATION ARENA.

Curzon Robey & Co., 7 Newman Street, W.

## BARON DE ZUYLEN IN LONDON.



### DINNER OF THE AUTOMOBILE CLUB.

IN the historic Star and Garter Hotel at Richmond, the Automobile Club of Great Britain did honour on Monday to the President of the Automobile Club of France, the Baron de Zuylen. Many of those present arrived at Richmond on their motor-cars, and the guest of the evening was driven from London by Sir David Salomons (the Chairman of the Foreign Relations Committee) in his Peugeot carriage.

Mr. Roger W. Wallace, Q.C. (the Chairman of the Club), occupied the chair, and amongst those present were Baron de Zuylen, Sir David Salomons, the Hon. J. Scott Montagu, M.P., the Hon. C. S. Rolls, Major-General Phipps Carey, R.E. (Chief Engineer to the Local Government Board), Professor Vernon Boys, F.R.S., Messrs. Alfred Harmsworth, Frank H. Butler, Sidney Atkins, T. B. Browne, Chas. Cordingley, J. S. Critchley, Staplee Firth, H. Hankey, Geo. Hopkins, W. Hopkins, Alfred Ledger, E. Shrapnell-Smith, W. Worby Beaumont, J. Mann, Mark Mayhew, Stanley Spooner, Lyons Sampson, Percy Northey, Dr. Lehweiss, Carl Oppermann, R. E. Phillips, Owers, Fletcher, and C. Johnson (Secretary).

Letters expressing regret at inability to attend were received from the Duke of Westminster, the Duke of Marlborough, Lord Loch, Lord Battersea, Sir Francis Jeune, the

Hon. Evelyn Ellis (Vice-Chairman of the Club), Captain the Hon. Cecil Duncombe, and others.

After the usual loyal toasts, the Chairman proposed the toast of "The Automobile Club de France," coupled with the name of the president, Baron de Zuylen de Nyevelt. Mr. Wallace said that he was certain he was expressing the feelings of all members of the Club when he told Baron de Zuylen that they were delighted to have the honour of entertaining him. It was in accordance with the wish of Baron de Zuylen that the dinner was taking the form of a family dinner rather than an official banquet; and they welcomed Baron de Zuylen as being one of the founders of the Automobile Club de France, which had done so much to foster the automobile industry in France. In England, constructors were now following in the wake of the magnificent industry established abroad; and although English inventors were, naturally, engaged in original invention, yet all Englishmen recognised the debt of gratitude which they owed to France for having set on foot the road locomotion movement. It was hoped that when Baron de Zuylen came to London next year he would find far more automobile vehicles on the streets and far more people taking an interest in automobiles than at present. No one could say that good work was not being done in this country who had driven on the British-made carriage owned by the Honourable John Scott Montagu, and other British-made carriages of various systems which had accompanied the Club tours; and it could not be denied that amongst the



English automobilists there were excellent and enthusiastic "chauffeurs"—such as Mr. Montagu and Mr. Rolls. The efforts of their guest of the evening had done much to place France at the head of the automobile movement, and that was a very good thing for the French people. Mechanical knowledge was being diffused in a remarkable way in France, and they might look for improvements in other directions than automobilism as a consequence. In the automobile industry of France 5,000 people were actually employed apart from the incidental work which their adoption had entailed and the labour required in driving the vehicles, so that that estimate might be multiplied by two or three. We were developing the industry in this country, and a great deal depended on the driver. The driver had as much to do with the conduct of the vehicle as the manufacturer. Mr. Wallace concluded by thanking Baron de Zuylen for the ready sympathy he had always extended to the Club and to the movement generally in this country, and then gave the toast of the evening, "The Automobile Club de France," coupled with the name of Baron de Zuylen. The toast was most enthusiastically received and the Baron greeted with musical honours.

Baron de Zuylen, in response, thanked the members for the kind way in which they had received the toast, and said it was a great pleasure to him to visit the English Automobile Club. He had always appreciated the difficulties from which the automobile industry had suffered in this country, seeing that the law which prohibited the running of such vehicles on the road had only been recently removed. The French constructors had been studying motor-vehicles for years, and he was sure that England would in the long run turn out excellent motor-carriages. What was wanted particularly was cheaper cars. The demand in France so far exceeded the supply that exorbitant prices were at present paid for the favourite carriages; but when the supply was able to meet the demand cheaper carriages would be produced, and their use would become more general. These remarks applied especially, he thought, to this country. After paying a tribute to the work of Sir David Salomons, Baron de Zuylen gave the toast, "Success to the Automobile Club of Great Britain," and coupled with it the name of its chairman, Mr. Wallace, who replied.

Sir David Salomons gave "The Health of the Visitors." He said there was a time when the majority of the population, including officialism, was against the automobile, but that was fast passing away. Among the company was Major-General Carey, and he (the speaker) trusted he would be inclined towards the new movement as his predecessor (Major Tulloch,) had been, and with the toast his name was coupled.

General Carey, in reply, stated that the Government had at the outset, perhaps rightly, insisted upon certain restrictions in the use of motor-vehicles on the road, as at that time they had no opportunity of testing their capabilities, and they thought it right first to safeguard the general public. The Local Government Board had recently requested the Automobile Club to carry out certain experiments for them with a view to ascertaining whether, as regards certain classes of vehicles, the speeds permitted might be increased. He could assure automobilists that the Local Government Board was fully alive to the importance of the automobile movement and were always willing to consider representations of automobilists, and he had no doubt, would in the long run make such concessions to their views as might in the opinion of the Board be compatible with the safety of the public.

The Hon. J. Scott Montagu, M.P., gave the health of the Secretary of the Club, Mr. C. Johnson, in a eulogistic speech. In his experience of public affairs he had never known a more efficient secretary. The members recognised him as an integral part of their organisation. Referring to automobilists in the House of Commons, Mr. Montagu said there were now four—Sir Samuel Montague, Mr. J. H. Dalziel, Mr. Carlile, and himself—the nucleus, he hoped, of an ever-

increasing party in the legislature of this country in favour of motor-cars. He was glad to have heard the speech of General Carey, and to learn that there was a chance of the regulations being relaxed and a higher speed being permitted. The motor-vehicles were more easily controlled and more easily stopped—(laughter, as the speaker glanced at the representative of the Local Government Board)—than horse-drawn carriages.

Mr. Johnson briefly responded, heartily thanking the company for their remembrance. After all, his work, he said, was to carry out the instructions of a number of gentlemen who gave up their time for the benefit of the Club.

Mr. Roger W. Wallace proposed the toast of "The Press." He stated that as the dinner was of an informal nature members of the Press had not been invited to be present, but he was glad to recognise at the table members of the Club who were also proprietors of important technical journals. He had already had an opportunity at a recent meeting of the show committee of thanking the technical press for the ready assistance they had given the Club in its endeavours to promote the automobile industry; but on this occasion, seeing that Mr. Alfred Harmsworth was present, he wished more particularly to refer to the general press, and to couple with this toast the name of Mr. Harmsworth. Mr. Harmsworth had stepped out from amongst the proprietors of other London morning papers, and had declared boldly in favour of automobilism. It required no small amount of courage for a newspaper proprietor to stand up for a new movement which was receiving so cold a recognition in so many quarters. He (the chairman) felt certain that it would give members of the Club a special delight to show Mr. Harmsworth how thoroughly they appreciated his action in this matter.

Mr. Alfred Harmsworth, in replying, stated that apart from the support to automobilism which had been rendered by the newspapers with which he was connected, he was himself an enthusiastic automobilist, and he believed most thoroughly that the movement had an enormous future in this country. He thought that the inhabitants of the United Kingdom could not over-rate the great stimulus which the French people had given to mechanics, and he hoped that thanks would always be given to the French constructors for this veritable mechanical triumph. With reference to the unnecessary fear in some quarters that the motor-car would supersede the horse, the same assertion was made on the introduction of the bicycle. Horse owners were the best friends of the motor-car. English people were particularly fond of horses, and Baron de Zuylen had the finest stables in Europe. In France it was among the horse-owning people that the automobile first became popular. A day or two before he had seen Lord Shrewsbury driving a fine team of horses, and later in the day a motor-car with equal dexterity.

The Chairman read the telegram announcing the result of the Tour de France race, which had kindly been sent to the Club by the Editor of *Le Matin*. The following reply was read, unanimously adopted, and despatched to the Editor of *Le Matin*:—"Members of the British Automobile Club, at the dinner at which Baron de Zuylen honours them with his presence, beg to thank you for telegraphing the results of your interesting race. They beg to congratulate you on its splendid success, and ask you to convey their hearty congratulations to the successful competitors. Baron de Zuylen joins in these congratulations. Please accept my compliments. Roger W. Wallace, Chairman of the Automobile Club of Great Britain, London."

The Chairman then gave the toast of "The Judges," and coupled with it the names of Professor Vernon Boys, F.R.S., and Mr. W. Worby Beaumont. Mr. Beaumont responded.

Sir David Salomons, with reference to the forthcoming trials of the Liverpool Branch of the Automobile Club (viz. the Liverpool Self-propelled Traffic Association), stated that in his opinion subscriptions towards these trials by members of the Club should, if made at all, be made through the

central body and not directly to the branch, and that if a fund were started at the London club-house towards assisting in defraying the cost of the Liverpool trials he would be glad to subscribe twenty guineas.

The Chairman stated he thought such a fund should be started at the London club-house, and that he would be pleased to add twenty guineas. Mr. Frederick R. Sims, the vice-chairman, also stated that he would be glad to subscribe five guineas, and Mr. Ernest Owers likewise offered a similar amount. The Chairman expressed a hope that other members would subscribe to this fund.

Mr. Shrapnell-Smith, the honorary secretary of the Liverpool branch, spoke as to the forthcoming trials, and concerning the Liverpool branch, and said that the Council of the Liverpool branch had expressed the hope that members of the central body would make a point of being present at the trials which were to commence on Monday next, the 31st instant.

Baron de Zuylen then announced to the Club that Mr. Gordon Bennett had recently informed the Automobile Club de France that he intended to lodge in their hands a magnificent gold cup as an International Automobile Cup, that challenges for this cup might be sent through the recognised automobile club of any country, and that any nation which could win an International race against France would become the holders of the cup. He (Baron de Zuylen) would be looking forward to receive at no distant date a challenge from the British Automobile Club for a race for this cup.

The return journey from Richmond was made by many of the party on automobile vehicles, and this concluded a pleasant and memorable evening.

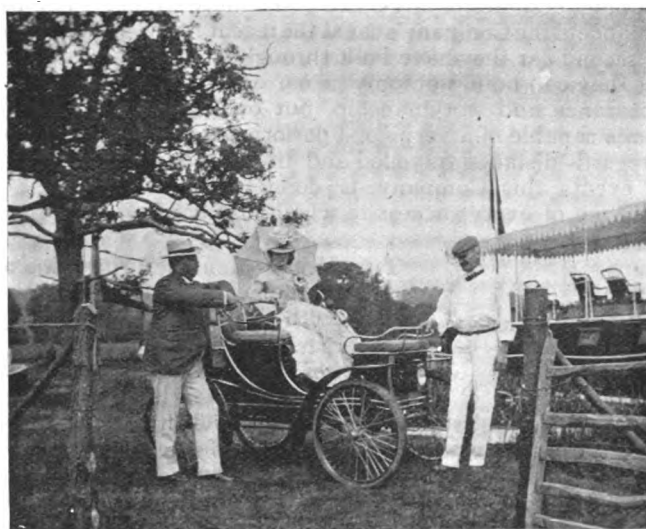
AN ordinance requiring fenders on all motor-vehicles is to be introduced in the Chicago Board of Aldermen, and a loud protest has been raised by the local manufacturers on the ground that the fenders would prove a disfigurement.

MR. C. JACKSON, of Avenue House, Bakewell, in a communication this week, states that he is thinking of purchasing a motor-tricycle, but before doing so wishes to have an opportunity of giving one a good trial by having a machine on hire. We think he should have no difficulty in doing this, and would recommend him to communicate with the makers or importers of motor-tricycles, among whom are the Motor Manufacturing Co., Ltd., the Beeston Motor Co., Ltd., the London Autocar Co., and Messrs. Brown Bros., Ltd.

A GLOUCESTER correspondent, signing himself "H.D.G.," asks if motor-tricycles are injurious to ride for touring, "as they appear to me to be full of vibration." Given a comfortable saddle, our correspondent need, we think, have nothing to fear on this score. As to his second query, "Is there much or any trouble with the electric ignition," we can only reply that occasionally a little trouble arises, but nothing of a serious character. To repeat an opinion already expressed in these columns, this type of ignition device is the best and only one suitable for motor-tricycles.

MR. JOHN C. HENRY, a well-known electrical engineer, of Denver, Col., is building an electric vehicle to exemplify some important improvements he is said to have made in regenerative controllers, by means of which a vehicle will be accelerated and controlled with one lever. The same handle that turns on or off the current operates the brakes. In short, the motor is converted into a dynamo, and when the current is shut off the momentum regenerates electricity, storing it in the battery, and checks the vehicle at the same time. In going down grade the power that would ordinarily be pressed against the mechanical brakes is transferred to the battery, so that it is replenished, and the vehicle is at the same time held in check, and runs with a regularity as on level ground. The steering will also be electrical. In place of the present system the motors will be so arranged that by a simple turn, it is said, the machine can be steered around a corner or zigzag with more accuracy and rapidity than mechanical steering would permit.

## SCENES AT BOLNEY COURT. (Mr. Frank Butler's Houseboat.)



## MIDLAND MOTOR NOTES.

By "VERAX."



## The Endurance Motor Co.

IN course of conversation with one of the directors of this Company this week I learned that they are very busy indeed fulfilling orders, at the present moment having contracts for about twenty-six motor-frames and motors, deliverable at so many per week. The directors have been so encouraged by the success of the Endurance car at the late Show, and by the number of orders obtained from it, that they have increased their capital, and will enlarge their works considerably to cope with the orders they have obtained, which, judging by their past success, will doubtless be the means of keeping them very busy in time to come. The Company have been working now for some time in a quiet way, and have, after much experience with various types of engine, at last succeeded in making a fairly good motor, which embodies parts of several well-known makes. The horizontal engine, as placed in their car, is in some respects similar to the Benz, but the driving gear, which comprises belts running on fast and loose pulleys, is controlled by one handle, so that it is impossible to put both gears on at once—which does not in this type of car improve the belts or the gearing. All the parts, too, which are liable to damage, such as the ignition plug, etc., are of large size and amply strong. The performance of the Company's car at the recent Show, which is only the second car they have built throughout, at any rate proves that they can build not only a car which is respectable in appearance and workmanship, but one which at the same time is capable of a very good performance on the road, both as regards distance travelled and time taken in transit. At all events this Company is doing good work, and it is deserving of every success to which it may attain.

## Other Coventry Firms.

THE Motor Manufacturing Co. are very busy indeed, and are very much pressed with work just now. To them is entrusted the manufacture of the wagonettes and *chairs-a-bancs* which are now being delivered to our northern towns, viz., Newcastle, Sunderland, and Edinburgh. When I was at the works I saw one of these wagonettes, resplendent in its dark blue coat and deep red lining, leaving the factory for a final "canter" before going north. By the way, these cars are doing very well indeed, and the "Geordies" certainly take to them with a vengeance. In fact, if we only had a few more Newcastles and Sunderlands we should very soon be far ahead of all the rest of the world in the production of cars, but unfortunately we English are a little too conservative, and hence we do not patronise a new movement sufficiently well to ensure its success in a comparatively short space of time, as other nations do; in fact, rather than help a new industry we do the other thing—which is not what may be termed a progressive policy. But there is one thing that may fairly be said, and that is that where we find we cannot *crush* a new industry it is then that we go for it hammer and tongs; and it is, I think, with the motor business just on the verge of the latter. At any rate, everyone is convinced that they must be in a position to make motors, and the public already are so greedy for them that the existing factories cannot supply in anything like reasonable time. The Daimler Co. were very busy too, and were despatching numerous cars from their works at the time of my call. One thing is certain, and that is that motors are not only well built in England nowadays, but they also have to undergo a very fair test before being handed over to their owners. The Progress Co., too, are very busy on motor-cars, and their new type of car has been running very well lately. The Raglan Co. are at work on motor-cars, and have, I understand, several motors on the point of being finished.

## What Is It?

THERE is at Coventry Station at the present time the most curious contrivance I have as yet seen, and which, the railway authorities have been instructed, is a motor-car. It resembles a sort of farm wagon on wheels with pneumatic tires, and wheels not much stronger than motor-tricycle wheels. Its engine is very rough, with a single cylinder and two fly-wheels, small in diameter but fairly heavy. On each side of the car is a system of fast and loose pulleys and belts, which give the two changes of speed, and the counter-shaft over the rear axle drives the latter by means of a single chain, the differential gear being placed on the rear driving axle. There is a handle for steering, and the oil and water tanks are placed in front of the car. There has been no attempt at painting or finishing, and no one seems to know anything about it, to whom it belongs, or who made it. In its present position it is neither an advertisement for the makers or the autocar industry generally, and no doubt some dark evening it will disappear.

## The Proposed Columbia Factory.

I LEARNT while in Coventry, on very good authority, that this scheme had fallen through. It will be remembered that some time ago it was reported the Columbia Manufacturing Co., an American firm, were opening a large works in Coventry, which were to cost close on £10,000, and at the time there was much talk about it; but it appears that, like a good many other American schemes, this has fallen to the ground, whether for want of a good motor to place on the market or for sufficient capital I cannot at the moment say.

## A Doctor's Car.

I some time since referred to Dr. Lupton's car at Stratford. This gentleman still finds his car a great saving, and it is now doing the work of three horses. He has been a car-owner now for some four months, and was overheard to say to another local doctor that had he known motor-cars were half so useful and enjoyable as he has found them, he would have been an owner the day the Act was passed, instead of wasting time and money in horseflesh when they (motors) were to be obtained. It does not want much practical testimony like this, surely, to convince a doubting public.

THE brothers Messrs. Sharpe, of Deptford, were met at Lowestoft the other day on their motor-tricycles, having ridden from town making only one stoppage on the way. They were on a fortnight's tour through the Eastern Counties, and intended the first day continuing their journey sixteen miles inland to Beccles.

SAYS *The Morning Advertiser*: "About nine o'clock Wednesday morning Mr. Stuart M'Iver, of Malcolm House, Rollo Street, W., was being driven in his own private motor-cab along the Costel Road, W., when another motor-cab, owned by Mr. Frank Batson, of 22 Florence Road, N.W., came at a high speed out of a side thoroughfare and crashed into Mr. M'Iver's vehicle upon the near side, knocking it completely over, the recoil sending Mr. Batson's cab back several yards and upsetting a coster's barrow laden with fruit. With the assistance of several passers-by Mr. M'Iver's cab was replaced upon its wheels, when that gentleman was found to be seriously cut about the face and arms by the broken glass. His coachman or driver, Henry Gander, of 2 Smythe Place, W., was also considerably hurt, but pluckily stuck to his post and drove his master to the nearest surgery, where both of them were attended to, Gander afterwards driving the vehicle, which was little damaged besides the broken windows, home, Mr. M'Iver preferring to ride in a hansom of the ordinary type."

| Started from Champigny on Sunday July 16th. |       | First stage, Sunday, 16th, Champigny to Nancy, 180½ miles. | Second stage, Monday, 17th, Nancy to Ambérieu, 227·062 miles. | Third stage, Wednesday, 19th, Aix les Bains to Vichy, 237·667 miles. | Fourth stage, Friday, 21st, Vichy to Périgueux, 185·792 miles. | Fifth stage, Saturday, 22nd, Périgueux to Nantes, 211½ miles. | Sixth stage, Nantes to Cabourg, 216·240 miles. | Seventh stage, Cabourg to St. Germain, 118·062 miles. |
|---|-------|--|---|--|--|---|--|---|
|   | h. p. | Duration h. m. sec. age.                                   | Duration h. m. sec. age.                                      | Duration h. m. sec. age.   | Duration h. m. sec. age.                                       | Duration h. m. sec. age.                                      | Duration h. m. sec. age.                       | Duration h. m. sec. age.                              |
| Charron ..                                  | 16    | Panhard. 6 5 42 —  | 6 50 52 33½   | 8 12 12 24   | 7 10 53 —  | 7 16 15 —   | 6 48 3½ —                                      | 3 13 18 31½   |
| De Knyff ..                                 | 16    | do. 5 19 27 33½  | 7 15 21 —   | 8 24 48 —  | 6 44 55 —  | 6 53 45 —   | 6 57 24 —                                      | 3 39 23 —   |
| Pinson ..                                   | 12    | do. 5 43 54 —  | 8 14 4 —  | 8 49 0 —   | 7 21 37 —  | 11 42 55 —  | 7 0 15 —                                       | 3 19 0 —  |
| Girardot ..                                 | 12    | do. 5 35 47 —  | 9 52 49 —   | 9 40 55 —  | 7 0 9 —  | 7 7 52 —  | 7 0 15 —                                       | 3 19 0 —  |
| Leys ..                                     | 12    | do. Did not arrive.  |   |  |  |   |  |   |
| Clément ..                                  | 12    | do. Ran into a wagon                                       | 9 54 1 —  | 9 30 5 —   | 8 42 50 —  | 7 11 30 —   | Not in at close.                               | 4 3 8 —   |
| Heath ..                                    | 12    | do. 5 59 10 —  | 8 33 31 —   | 13 24 0 —  | 10 49 55 —   | 7 8 20 —  | 9 23 0 —                                       | 3 29 30 —   |
| Chasseloup Laubat                           | 12    | do. 5 51 44 —  | 9 35 0 —  | 9 30 0 —   | 7 56 57 —  | 6 52 37 30½   | 6 34 21 —                                      | 3 52 18 —   |
| Avis ..                                     | 20    | Amédée Bollée. 5 47 7 —                                    | 8 18 22 —   | 15 49 30 —   | Lost his way.  |   |  |   |
| Giraud ..                                   | 20    | do. 6 13 44 —  | 7 53 57 —   | 11 23 0 —  | 9 43 9 —   | Did not start.  |  |   |
| Jamin ..                                    | 20    | do. 6 11 56 —  | 7 16 25 —   | Did not arrive.  |  |   |  |   |
| Castlenau ..                                | 10    | do. 6 33 52 —  | 10 0 12 —   | 9 56 53 —  | 7 17 56 —  | 7 49 8 —  | 7 58 32 —                                      | 3 52 32 —   |
| Jénatzy ..                                  | 12    | Mors. 6 35 3 —   | Not in before close.  |  |  |   |  |   |
| Levegh ..                                   | 12    | do. 6 5 26 —   | ditto   | 9 20 52 —  | 10 10 21 —   | 7 40 41 —   | 6 26 44 33½                                    | 3 44 23 —   |
| Anthony ..                                  | 12    | do. 6 5 22 —   | Gave up, accident to motor.                                   |  |  |   |  |   |
| Broc ..                                     | 12    | do. 6 35 45 —  | Gave up, accident to carriage.                                |  |  |   |  |   |
| Lefebvre ..                                 | 16    | do. 7 32 29 —  | Did not arrive.   |  |  |   |  |   |
| Flash ..                                    | 16    | Vallée. Punctured and gave up.                             |   |  |  |   |  |   |
| Richard ..                                  | 7     | — 8 8 46 —   | 11 54 50 —  | 12 49 0 —  | Ran into a tree.   |   |  |   |

## LE TOUR DE FRANCE.

### RESULT OF THE GREAT FRENCH CONTEST.

LAST week we gave some account of the start for the great French contest, and also an illustration of M. R. de Knyff's Panhard car on which, as will be seen from the results tabulated above, he won the race. M. de Knyff not only achieved the distinction, but his sportsmanlike conduct in picking up Williams, a motor-cyclist, who had fallen and was rendered insensible, received high eulogy from the President of the Automobile Club at Monday's dinner at Richmond. Of the nineteen starters in the car class only eight finished the seventh stage from the seaside resort of Cabourg to St. Germain. By the courtesy of the Committee and Secretary of the Automobile Club of Great Britain we are enabled to give a complete record of the distances covered each day and the times occupied by the competitors.

THE proposed contest of motor-carriages from New York to Irvington on the Hudson and return has been postponed until early in October.

THE Lander Transportation Co., Lander, Mont., are planning to introduce motor-omnibuses to carry passengers from Casper to Walton, Lander, Thermopolis, Meeteetsee, and the Yellowstone Park, U.S.A.

MR. ALEXANDER WINTON, of the Winton Motor-Carriage Co., Cleveland, O., has entered a protest against the proposed ordinance limiting the speed of motor-vehicles in that town to ten miles per hour.

M. HOSPITALIER, the well-known electrician, who was a visitor to the Motor-Car Exhibition at the Agricultural Hall, has suggested the use of the term "accumobile" for electrical automobiles, and this new word seems likely to become popular.

ASKED about a rumour that the General Electric Co. would engage soon in the manufacture of automobile vehicles at the works in Lynn, Mass., U.S.A., Professor Elihu Thomson is reported to have admitted that the Company was experimenting, but stated that it had not begun to manufacture, and that it was yet too early to make predictions.

THE *Electrical Review* thinks too much space has been wasted in considering as to what a car shall be called. Our contemporary thinks "electromobile" may be all right for some vehicles, but that "immobile" would be a more accurate definition for others; and when a motor car has come to a sudden standstill an even shorter word has been used.

## THE RAISING OF SPEED LIMIT.

THE following letter has been forwarded to motor-car manufacturers by the Secretary of the Automobile Club:—

DEAR SIRS,—Requests having been made to the Local Government Board that they would raise the limit of speed of automobile vehicles weighing unladen over 1½ tons, the Local Government Board has now requested the Automobile Club to undertake experiments for the information of the Inspectors of the Board as to the stopping-power of the vehicles in question on the flat and on hills.

The Committee feel sure that all firms engaged in the manufacture and sale of vehicles weighing over 1½ tons unladen will be anxious to assist the Club in its endeavours to place vehicles before the Local Government Board officials for these tests.

The Committee therefore express the hope that you may find it possible to send such vehicles as you may possess weighing unladen over 1½ tons, with drivers, and having on board the maximum load which they are designed to carry, to be present at these trials, which are to take place on Friday, August 11th.

It is hoped that you will kindly arrange for your vehicles to be at the top of the Petersham Hill, "Star and Garter" Hotel, Richmond, by 10.30 a.m. on that day.

May I ask that you will kindly let me have your reply at the earliest possible convenience, as, if you can send vehicles, I will transmit further particulars to you?

EFFORTS are being made at Moscow, Russia, to organize an automobile club in that city.

ON the occasion of the meeting of the French Association for the Advancement of Science in September next, it is proposed to organise a motor-car race between Paris and Boulogne-sur-Mer. The race will probably be run off on September 7th, the distance being 250 kilometres.

ALUMINIUM as a light metal for use on motor-cars is fast beginning to be recognised in the motor-car world, and there is no doubt that for steering pillar purposes, gear cases, etc., it has no equal. It is light and strong, and can be easily worked. Therefore, as lightness in motor-vehicles is a *sine qua non*, its use is to be commended.

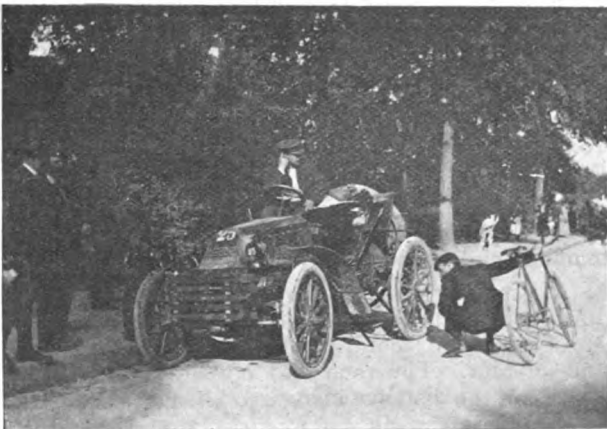
As in this country, increasing attention is just now being devoted to electrical vehicles in France. To stimulate the movement the *Velo* has organised a race for electrical cars, and this is to be run off to-morrow (Saturday) in the neighbourhood of Paris, the distance to be covered being 52 kilometres (32½ miles). The race is divided into three categories: (1) vehicles weighing less than 800 kilogrammes, (2) vehicles weighing between 800 and 1,200 kilogrammes, and (3) vehicles weighing over 1,200 kilogrammes; one of the conditions being that no vehicle will be eligible for a prize unless the journey is made on one charge of the accumulators.



## MOTOR-CARS ON THE CONTINENT.

### The Accident to M. Serpollet.

ON Saturday evening last in the rue Bolivar, Paris, M. Léon Serpollet, accompanied by two friends, MM. L'Huillier and Doillet, met with a curious accident, as the automobile on which they were riding suddenly collapsed without the slightest warning. Happily neither of the three occupants of the vehicle received any very serious injuries, M. Doillet being the most unfortunate, as his leg was fractured. M. L'Huillier escaped with nothing worse than a black eye, while M. Serpollet himself expects to be on his feet again in a day or two. From the following account of an interview with M. Serpollet published by the *Velo* it would appear that there is more in the accident than would at first appear. M. Serpollet is reported to have said: "I told you yesterday that the automobile upset without the slightest warning. That was all I knew at the time. We were upset without knowing why. Nevertheless, the incomprehensible fashion in which the accident occurred kept



TWO VIEWS AT STARTING POINT ("LE TOUR DE FRANCE.")

worrying me, and I immediately suspected foul play. The matter was so serious that I did not dare to speak of it yesterday. I waited until the automobile had been examined. The car was inspected this morning, and it was discovered that the pins of the steering gear were missing. Had they been forgotten? Had they been taken out? I must tell you that the day before we had trouble with our workmen, and a certain number of them had been dismissed. I cannot affirm anything. In any case it is at least a curious coincidence. I now understand what happened. Going down the rue Bolivar one of the wheels must have turned sideways, causing the automobile to tip over." This is, we believe, the first accident which has happened to M. Serpollet, although his connection with automobiles has extended over some years.

### Race at Lyons.

ON Sunday, the 23rd instant, an automobile race took place at Lyons, over a distance of 100 kilometres. This course was organised by the Automobile Club, and resulted as follows: 1st, Schneider (carriage), time 1 h. 55 m.; 2nd, Deydier (carriage), time 2 h. 13 m.; 3rd, Marcel (carriage). The first of the motor-cyclists to finish was Miguot, who completed the distance in 2 h. 15 m. and figured fourth in the general category.

### Speed Estimates Again.

LET M. Jenatzy and his famous racing car "La Jamais Contente" look to their laurels, for a car—or rather it is only a small and apparently puny voiturette—has this week been discovered travelling along the boulevards of Paris at a speed exceeding 100 kilometres per hour! And this astounding discovery has been made by that most veracious of mortals, a policeman—so who dare doubt its accuracy? Subsequent proceedings may reveal the name of the maker, the horse-power of the motor, and other particulars pertaining to this remarkable vehicle, which was doubtless only kept out of "Le Tour de France" by its owner's kind consideration for the other cars. Truly England's intelligent guardians of the peace, even those of rural districts, will have some difficulty in beating this estimate of speed.

### Paris and St. Malo.

THIS automobile race has already received 77 entries, of which no less than 52 figure in the motor-cycle class. Among the competitors to date in the carriage category are such well-known racing men as Lemaitre, Girardot, Charron, Heath, Antony, Levegh, Broc, and Jenatzy. Doubtless many other names will be received before the



SNAPSHOT OF MOTOR-TRICYCLE EN ROUTE ("LE TOUR DE FRANCE.")

lists are finally closed, so that the race, in point of numbers at any rate, is an assured success. It will be observed that the four last names given above are those of competitors in "Le Tour de France" who drove Mors cars.

### The Exhaust Box on Motor-Cycles.

ENGLISH visitors to Paris cannot but be struck by the lack of consideration shown by motor-cyclists in opening the compression cock of their motors when driving in crowded streets. Frequently one sees, and hears, a motor-cycle travelling gaily along the boulevards, in the midst of dense traffic, and giving vent to a series of reports like a Maxim gun when in action. And this simply because the rider, with an absolute disregard of the sensibilities and the safety of the general public, has opened wide the compression cock of his engine, which loudly proclaims the fact. Another practice is also largely in vogue, and one which



the journal *La France Automobile* is seeking to suppress. It is the stupid custom among a certain section of motor-cyclists to so pierce their exhaust boxes that to all intents and purposes there is no box left, and the exhaust from the motor is discharged practically direct into the open air. Of course, the idea is that with the decreased back pressure thus obtained in the cylinder the motor runs better, but the greatly enhanced possibility of frightening horses, coupled with the increased prejudice excited in the public mind by the noise created by the motor should surely outweigh any slight increase of engine power which may be obtained by this objectionable method. In England the noise would not be tolerated, and it is to be hoped that the appeal of so powerful a journal as *La France Automobile* will do much to abate the nuisance in Paris.

#### Terrible Accident in Belgium.

THE many English friends of the well-known sportsman, M. Charles Craninckx, of Brussels, will learn with great regret of his very serious accident while competing in a motor-cycle race between Namur and Hastière on

Sunday, the 23rd inst. It appears that on the Waulsort Road M. Craninckx ran into a little girl, severely injuring her leg, and that in a violent effort to stop his machine he lost his balance and was thrown a considerable distance. A fractured skull was the result, and M. Craninckx, having been carried in an almost dying condition to Nagburcte Villa, underwent the dangerous operation of trepanning on Monday evening last. The operation was successfully performed by four doctors, and there is a faint hope that the unfortunate gentleman will ultimately recover.

#### An Incident at the Finish of Le Tour de France.

As M. René de Knyff, the winner of the big race, descended from his 16-h.p. Panhard at the Grille d'Hennemont, on Monday afternoon, he was immediately surrounded by numerous friends eager to congratulate him on his splendid victory. Foremost among these was M. A. de Lucenski, director of the *Journal des Sports*, who presented him with a handsome scarf pin in a case, bearing the following inscription: "To my friend René de Knyff, for his generous act of the 19th July, in the Tour de France.—A. de Lucenski." It will be remembered that when the motor-cyclist, Williams, came to grief on the Saint-Etienne Road, M. de Knyff stopped to rescue him—a truly generous and sportsmanlike act, and one which would enhance the popularity he already enjoys, were that possible.

#### Average Speeds.

IN "Le Tour de France" the average speed of M. de Knyff's car was 51 kilometres 233 m. per hour, while the tricycle ridden by Teste maintained an average rate of 41 kilometres 471 m. per hour; the total distance traversed being 2,291 kilometres.

#### The Renault Motor-Tricycle.

A good deal of attention is just now being centred in French automobile circles in a new motor-tricycle known as the Renault, particularly in view of the fast travelling that has been accomplished on it. The other evening the machine was subjected to a trial at the Parc des Princes track in Paris by M. Renault, when he succeeded in riding a distance of no less than 61 kilometres 797 metres (equal to 38.6 miles) within the hour, eclipsing all previous records, including Beconnais' wonderful ride. M. Renault's times were as follow:—

| Kilo.      | min. | sec.             | Kilo.        | min. | sec.             |
|------------|------|------------------|--------------|------|------------------|
| 1 .. .. .  | 1    | 10 $\frac{1}{2}$ | 40 .. .. .   | 38   | 31 $\frac{1}{2}$ |
| 5 .. .. .  | 4    | 57 $\frac{1}{2}$ | 50 .. .. .   | 48   | 24 $\frac{1}{2}$ |
| 10 .. .. . | 9    | 35 $\frac{1}{2}$ | 60 .. .. .   | 58   | 14 $\frac{1}{2}$ |
| 20 .. .. . | 19   | 7 $\frac{1}{2}$  | 61.797 .. .. | 60   |                  |
| 30 .. .. . | 28   | 45 $\frac{1}{2}$ |              |      |                  |

We hope to publish an illustrated description in an early issue of the Renault tricycle, which is fitted with a motor of no less than 3 $\frac{1}{2}$  h.p. We understand that negotiations are already in hand for the manufacture of the new machine in this country.

## CORRESPONDENCE.

### THE RECENT MOTOR-VEHICLE TRIALS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the trials of heavy vehicles recently held at Uxbridge under the auspices of the Automobile Club, the figures appeal to all engineers and others interested in heavy traction, and I cannot abstain from commenting on the extraordinary economical results obtained with the Straker system lorry. According to the figures of the Automobile Club certificates attached to these vehicles, the cost of fuel on the Thornycroft lorry comes out at 0.29 pence per ton mile, while the cost on the Straker system lorry is 0.0914 pence per ton mile. This is a very great difference in the cost of working, as, for example, taking the average day's work of such a vehicle at 50 miles, or 15,000 miles per year, and assuming a load carried of 3 $\frac{1}{2}$  tons, the Straker lorry would cost for fuel £19 19s. 10d. for the year, as against £63 8s. 9d. for the Thornycroft lorry: showing a saving on the year's fuel bill of £43 8s. 11d. in favour of the Straker system.

This is an item which would strongly appeal to anybody using a heavy vehicle, and the results should call for high commendation from the judges of the Automobile Club, especially as the second trial ordered by them came out even better than the first.

I trust that you will consider these comments of sufficient interest for insertion in your next issue.

Thanking you in anticipation,  
435 Holloway Road, London, N.,  
July 24th, 1899.

Yours truly,  
ERNEST CLARE.

### A POPULAR WANT.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a strong believer in the great future of motors, I think your Journal is supplying a public need. So far, however, I have been unable to ascertain from the mass of information it contains whether it is yet possible to buy a satisfactory conveyance at moderate figures. In an appreciative article on "Automobilism" in this month's *C.T.C. Gazette*, the writer rightly says "the public demand is for a light four-wheeled carriage to carry two persons on the one seat, with perhaps room for another elsewhere on occasion," or, I would add, in place of the occasional third, room for a few parcels. The public are too nervous to use petroleum spirit, and object to the smell of petroleum itself. Is it impracticable for the motor carriage to generate its own motive power in the shape of electricity? In the country districts it is impossible to travel when it is necessary to recharge accumulators.

The nearest approach to these general requirements that I have come across is an offer from an independent maker of a small petroleum car, suitable for two passengers and luggage for business or pleasure, mounted on four strong wheels, for £85 cash, with delivery in four to six weeks (?)

Axminster,

July 21st, 1899.

Yours truly,

A WOULD-BE MOTORIST.

### "HORSE OR COLT POWER."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The new De Dion motor so-called 2 $\frac{1}{2}$  h.p. has 70 mm. diameter cylinder, with 75 mm. stroke, and, like the Aster, which we believe was the first motor of its type described by its makers as 2 $\frac{1}{2}$  h.p., will not develop anything like that power. We write from actual tests made by ourselves, and not from hearsay. That being the case, it is just

as well that the public and those in the trade (who buy motors to make up into finished vehicles) should know that the majority of these so-called horse-powers are nominal, and, as far as our experience goes, invariably complimentary. We beg to advise you that the Dion-Dunlop motors manufactured by us, and fitted to complete tricycles by such firms as the Swift Cycle Co., the Ariel Cycle Co., and others, are of exactly the same dimension of cylinder and stroke, and *at least equal power*, as the very latest De Dions and Asters, and are of English workmanship and quality throughout. In future we shall designate our motors, to prevent confusion among the uninitiated, as  $2\frac{1}{4}$  h.p., though, as explained above, this does not accurately represent the brake horse-power it is possible to develop with such a size of air-cooled motor.

Yours faithfully

(For the Cycle Components Mfg. Co., Ltd.),  
Birmingham, CHAS. SANGSTER,  
July 21st, 1899. General Manager.

### THE NEW VOCABULARY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is evident that a new series of words is rendered absolutely necessary to convey meanings in connection with the new mode of progression by automatic power. May I be permitted to make a suggestion?

The absurd result of trying to coin a verb out of the words *auto-car* and *motor-car* is seen when *auto-caring* and *motor-caring* are written. The word *caring*, being the adjective of *care*, cannot properly be used as above; and it is the use of the above words which attracted my attention to the subject. The only way either word could possibly be used would be by placing the hyphen, instead of between the second and third syllables, between the two last, thus—*autocar-ing*, *motorcar-ing*. But what long words for use in this age of rapidity in everything! It is better to discard the word *car* altogether, as it is now connected with trams and railways.

The new words must be short, easy to use in a hurry, and capable of at once differentiating from words expressive of other modes of propulsion, such as horse conveyances, tram-cars, trains, etc.

Now, the three words we have as roots from which to coin our new vocabulary are the Greek *mao*, and the Latin *moveo* and *motune*—*autos* simply meaning *self*. The verb *automote* is at once suggested, but this is too long a word ever to come into general use; by dropping the *auto*, however, we have words at once short, concise and sufficiently differentiating for all practical purposes—to *mote*, *moting*, a *motor*, the *motist* or driver, and the *motor-engineer*.

I would suggest that, in order to fall in with the new vocabulary, the word *car* be omitted from the name of your excellent journal, and become "The Motor Journal."

East Moulsey, I am, yours truly,  
July 22nd, 1899. W. HARDWICHE, M.D.

[We are very much obliged to Dr. Hardwiche for his suggestion, but at present we may say that we do not propose to make any alteration in the title of our Journal.—ED.]

### INCREASED H.P. ON TRICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the increased h.p. which all manufacturers of motor-cycles are giving their machines now, we should like to point out to you that long before the De Dions, Asters, etc., etc., who only now see the mistake of supplying a  $1\frac{1}{4}$ -h.p. machine, L. Barrière & Co. from the beginning never turned out any other but the 2-h.p. type. We must say that we find this absolutely sufficient, although it is only natural that firms have the desire to do better. With our 2-h.p. Barrière Sociable, to which we fitted a trailer, we have been able to mount a hill of 1 in 16 without pedalling, although the machine was loaded with

five men. On the other hand, we need only refer to the officially timed ascent of Petersham Hill, at the rate of fourteen miles an hour, to show that if a tricycle is really well built 2 h.p. is just the size required, and has the great advantage of being quite safe as regards heating. We should feel obliged if you could draw attention to these two points in the next issue of your valuable paper, and thanking you in anticipation,

We are, yours faithfully,

THE AUTOMOBILE ASSOCIATION, LTD.

Prince's Road, Holland Park Avenue,  
London, W., July 22nd, 1899.

### A CORRECTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We regret that through an error the address of "44, Berners Street, W." was printed at the foot of our advertisement in the catalogue of the Motor-Car Exhibition at the Agricultural Hall, which might lead to the assumption that we are proprietors of the business carried on there. We beg to say that Mr. J. Burns is sole proprietor of the motor-car business carried on at 44, Berners Street, W., and we have no other connection with the business other than that we have given Mr. Burns control of the sale of our motors in London and district.

Yours faithfully,

PENNINGTON & BAINES.

### MOTOR-CAR SERVICE FOR THE SUBURBS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Suburban people are generally a decade behind provincials, and while all the towns of the country are getting their motor-car services I can hear of none in the London suburbs.

There should be a splendid profit for anyone running a service between Forest Gate and Snaresbrook, Forest Gate and East Ham, and Manor Park and Ilford. The roads are good, the 'bus connections antiquated, and the people are waiting for improvements.

Yours truly,  
Woodgrange Road, Forest Gate,  
July 24th, 1899.

A.B.C.

### TUBING v. ANGLE STEEL FOR MOTOR-VEHICLES.\*

THE fact that a firm, which has done much pioneer work in the development of high grade tubing, does not use tubing exclusively for all its motor-vehicle frame work, provokes some inquiry as to the relative advantages of the tube and rolled steel of other varieties of cross section. It is not so much a question of material, because steel of a grade suitable for tubing is as readily rolled into other shapes, and the several heatings required for the drawbench operations of the one process are probably no more injurious to the quality than the rigor of the rolling treatment. Nor is it likely, for several reasons, a matter of economy as regards the lengths of tubing or angle steel. About the same quantity of both would be used for a frame of like dimensions and the cheapness of the one would be offset by the decreased weight of the tubing.

To my view the all-important difference between the two lies in the ease with which the flat surfaces of the rolled sections lend themselves to shop manipulation and design. For example, one need but consider how unhandy a tube really is when an attempt is made to construct a fastening with another piece, which is to be removed occasionally. The tube may be reinforced internally or externally by another tube or a wooden core, and the piece to be attached by a suitable clip and a distance piece fitting the adjacent surfaces. This connection will be satisfactory under circumstances in which

\* By Robert I. Clegg, in *The Horseless Age*.

rotation around the tube is otherwise provided against. An example of the opposite character is to be seen in the lower ends of the front forks of a bicycle where the difficulty is met by flattening the tube to get the required surface against which to bolt the spindle. This inconvenience in using the bolts, screws and rivets of modern shop practice would be of little moment where the several parts are as few in number as the bicycle demands, but the case is altogether different in the motor-vehicles.

Improvements are being made in brazed joints. The original heavy forgings which were slowly and expensively machined inside and out to the requisite lightness gave way to stampings cut and drawn up out of sheet steel. One maker, if not more, has adopted cast steel for this purpose, and granting due skill in the art of brazing, the tubular frame is as strong and serviceable as it is agreeable to the eye. Unfortunately, the strength of a tube deteriorates rapidly with but a slight injury to the wall. A dent or cut with the corner of a file when the excess borax or spelter is being removed will greatly impair the original resistance. The sand blast is preferable to the file for this very reason, but the readiness of the other accounts for its more common adoption. The injuries alluded to are easily concealed by the enamel and are not readily detected prior to an accident. Where enough of this class of brazing is done, as in a bicycle factory, system and oversight will avoid weakness in this detail, but those who have little of this work to do must therefore exercise the greater vigilance.

Angle steel is readily bent and bolted and affords a good foundation for brackets and bearings. Where a number of bends of equal dimensions are required, a steel, or even an iron, die may be cast of the desired curvature. On bending the angle steel around the die—the steel being heated, of course—the two webs will diverge from the former right angle. This can be hammered with a flat swage down to the surface of the die whilst the one web is clamped firmly in place. If the strength of a section of angle iron or steel is calculated from a rectangular form it should not be overlooked that the first has from 2,200 to 4,500 pounds less tensile strength than the latter.

So far as a comparison of the tube and the solid rod is of importance, the following is taken from a table published by the manufacturers of Pioneer tubing; a tube having an external diameter of one inch and having a thickness of wall—or gauge—of one-tenth of an inch is equal in transverse strength to a solid rod .837 in. in diameter. There is a common belief that steel for frames should be of a very mild, soft nature. During the last few years a better knowledge of the endurance of metals has been obtained from the experiments to determine more accurately the condition to which the term fatigue is applied, and harder and stronger steel is now substituted.

Steel of this type will stand a long-continued series of slight bends prior to failure. For example, a 24-in. length of tube is said to have been subjected to  $\frac{1}{4}$ -in. vibrations at the rate of 300 a minute night and day for a month, at the end of which time the tube was reported as showing no signs of crystallization or fracture. A tube of  $1\frac{1}{8}$  by No. 22 gauge broke under a tensile strain of 10,175 lb., and a tube of the same quality and size has stood a strain of 6,000 lb. under endwise compression. These figures are decidedly better than, I fear, much of the common makes of tubing would sustain, and are only here given as an indication of the high grade this branch of engineering has attained.

We learn that the Leicester Motor-Car Co., Ltd., has, through H. A. Clarke & Co. of 31 Rutland Street, Leicester, just started running a fourth Daimler car. The "body" of this vehicle, which is a panelled wagonette, has been built by a local coach-builder, and is handsomely upholstered. This car will, we understand, be kept exclusively for private parties.

THE Norddeutsche Automobilwerke is the style of a new concern which has just been formed at Papenburg, Germany, to construct motor-vehicles.

THE New Haven Carriage Co., New Haven, Conn., recently shipped five electrical carriages to the Paris branch of the Cleveland Machine Screw Co.

THE Baldwin Cycle Chain Co., Worcester, Mass., are now prepared to furnish motor-car chains of  $1\frac{1}{8}$  in. pitch, and having space for tooth  $\frac{3}{8}$  by  $\frac{1}{2}$  of an inch.

FOR the first time in the United States a motor-wagon is now being used in collecting the mails. The place where the trial is being made is Buffalo, New York.

MESSRS. FRISWELL, LTD., write us they have opened a dépôt at 6 The Pavement, Chiswick, where a supply of petrol, lubricating grease, etc., can be obtained.

WE learn that Mr. R. W. Robinson, of York Road, West Hartlepool, is filling a want in his district by arranging to hold a stock of petrol and other motor-vehicle accessories.

THE United States Post Office Department at Washington is reported to be considering a proposition to equip the mail-collection wagons in use in that city with electricity.

IN connection with our enjoyable trip to Henley, an unfortunate printers' error occurred. We alluded to Mr. and Mrs. Longhurst. It should have been Mr. and Miss Songhurst, the former being the genial secretary of the Liquid Fuel Engineering Company.

IN referring to the McLachlan heavy-oil motor-car on July 14th we stated that the weight of the vehicle shown at the Agricultural Hall Exhibition was  $7\frac{1}{2}$  cwt. Mr. MacLachlan, however, writes to say that the weight of the little car is only  $3\frac{1}{2}$  cwt.

THE Comet Cycle Co., of High Street, Wandsworth, S.W., is, we learn, now providing for the wants of automobilists by carrying a stock of petrol and other motor-car accessories. The Company, having its own engine and dynamo, can also undertake the recharging of small batteries.

AN accident took place at Newcastle-on-Tyne on Sunday night. A motor-car left Gosforth soon after seven o'clock for Newcastle, and on reaching the Blue House one of the wheels broke and the car was pitched on its side. There were eight persons in the car at the time, and Mr. Patrick Fox, of 15 Lord Street, was rather seriously injured. His wrist was hurt, his right leg and other parts of his body were bruised. He was attended by Dr. Dixon, of Ellison Place, and also afterwards at the infirmary. The conductor of the motor-car was also slightly injured.

AT the Liverpool Police-Court, Maurice Gildard was summoned for recklessly driving a motor-car on three informations in such a manner as to endanger the safety of pedestrians. Mr. Cripps prosecuted. The evidence given in the cases showed that the defendant, between 15 and 16 years of age, in the employ of a motor-car company, recklessly and furiously drove one of their vehicles in Aigburth Vale and Lark Lane on recent dates. It was stated that he had been previously fined for a similar offence, and he was now ordered to pay a penalty of 20s. and costs on each of the three informations.

AT the West London Police Court, Albert Brickwell has been fined 3s. and 2s. costs for an obstruction which he was alleged to have caused in the High Street, Kensington, with a motor-car of which he was in charge. The case was heard on Saturday. It appeared that on June 24th he was driving the car, and stopped outside a chemist's shop in the High Street to get some paraffin. While engaged in the search, two of the passengers obtained some from a neighbouring hotel, to the front of which he drove. While they were in the hotel having refreshment a police-constable came along, declared that the vehicle created an obstruction, and summoned the driver, with the result just stated.

## POLICE PERSECUTION OF AUTOMOBILISTS.

It would appear from a case heard at Slough on Wednesday last that the police are laying traps to secure conviction of automobilists for contravention of regulations made by the Local Government Board before that Board had any experience of automobiles, and which, it has become apparent, cannot in many cases be followed without damage to all concerned.

The local police at Slough appear to have discovered a regulation which requires an automobilist to stop his vehicle if a police-constable, or a person in charge of a restive horse, holds up his hand.

They summoned Mr. Lyons Sampson, a well-known engineer and a member of the Automobile Club, for having failed to stop his vehicle in Colnbrook; and the case was heard before a full bench of magistrates, including Captain Higgins, Mr. Hartrop-Nash, General Little, Sir Charles Piggott, Mr. Freeman, Q.C., and others.

Mr. Staplee Firth—a solicitor and a member of the Automobile Club—defended Mr. Sampson, who was kept standing for upwards of two hours in a crowded court-house during the hearing of the case.

The case was watched on behalf of the Automobile Club by the Secretary, as the regulation is one which, if upheld for trivial causes, might permit of every tradesman's boy in charge of a horse stopping every automobile he might meet.

Mr. Lyons Sampson's evidence was to the effect that when running through Colnbrook at five to six miles an hour—a speed which was admitted by the police—a man leading a quiet horse which was being driven by a man in a trap held up his hand when Mr. Sampson's car was within fifteen yards of him. Mr. Sampson slowed down and took steps to stop his car within the shortest possible distance without causing noise. By this time the cart had passed, and Mr. Sampson, seeing that the horse was quiet, kept going ahead, but was stopped fifty-six yards further on by a police-sergeant, who asked him why he had not stopped, and took his name and address.

Mr. Staplee Firth, who carried out the defence in the most spirited manner, at the outset upset the case by drawing an admission from the driver of the carriage that he had not held up his hand. The driver was specifically asked this question, and emphatically stated that he had not. But since, from the wording of the summons, this admission would have put an end to the case, the magistrates, who showed unmistakable prejudice, recalled the driver. The driver, on being re-questioned, said he did not remember having lifted his hand, and that he had both hands on the horse's reins. Mr. Firth then claimed that the charge should be dismissed; but the Bench, to the surprise of everyone, ruled that the driver had held up his hand.

Mr. Firth then elicited that the man who was at the horse's head was a constable in plain clothes, who had been conversing with the driver of the cart for three-quarters of an hour, during which time the cart had been stationary.

Mr. Firth, to the evident horror of the Bench, then asked questions to prove that this plain-clothes constable (P.C. Young) and the sergeant (Gascoigne) had been instructed to set a "trap" for the first automobilist who might come along.

Mr. Firth: Why were you in plain clothes?

The Police-Constable refused to answer. The Superintendent of Police pleaded privilege, and the Bench upheld the plea.

Mr. Firth: Why were you waiting with the driver of the cart for three-quarters of an hour?

The P.C. would not answer. The Superintendent protested; and the Bench held again that no answer need be given.

Mr. Firth: I put it to you that you were there for the purpose of leading the horse and stopping the first motor-car that came along.

Police-Constable: I refer you to my Superintendent. I refuse to answer you. I was there by the orders of my Superintendent.

The Bench ruled that it was unnecessary for the witness to give a further answer to this question.

Mr. Firth (to Sergt. Gascoigne): Had you special instructions to look out for motor-cars?

Sergt. Gascoigne: I decline to answer.

Mr. Firth: Is not this a trumped-up charge got up by the police?

The Chairman: You need not answer that question.

Mr. Firth protested against the chairman answering for the witness, as it was for the witness to make the objection.

Mr. Firth: Where were you on duty?

Sergt. G.: In the High Street.

Mr. Firth: Where?

Sergt. G.: For about twenty minutes before Mr. Sampson came I was in a butcher's shop.

Mr. Firth: Had you any instructions in connection with Police-Constable Young?

Sergt. G.: I refuse to answer.

The Bench upheld his refusal.

Mr. Firth: Were you not waiting for a motor-car?

The Sergeant refused to answer.

Mr. Firth: Did you give a written report on the matter to your Superintendent?

Sergt. G.: Yes.

Mr. Firth: I call for it.

Superintendent of Police: I decline to produce it.

The Bench upheld the Superintendent.

Mr. Firth: In what way do you receive instructions concerning motor-cars?

Sergeant: Sometimes in writing and sometimes verbally.

Mr. Firth: How did you receive your instructions on this occasion?

The witness refused to answer.

Mr. Firth: Were you not put there to trap motor-cars?

The Superintendent objected to this question, and the Sergeant answered that he was there to "trap all breakers of the law."

During the course of a speech for the defence, Mr. Firth argued that if the constable in plain clothes was the only person who held up his hand he was not a police-constable within the meaning of the Local Government Board Regulations.

Mr. Freeman, Q.C., one of the Bench, asked whether Mr. Firth could quote any precedent for this opinion.

Mr. Firth commenced to quote the parallel case of a man in plain clothes in London attempting to control the traffic; but the Bench at this point said the case was immaterial—and in spite of evidence to the contrary they ruled that the driver had held up his hand.

One amusing incident in the case was when Mr. Firth in his argument asked the Bench whether the regulations would cover the case of a policeman in plain clothes who might simulate drunkenness and stand in front of a vehicle with his hand up, and if in such case an automobilist might be prosecuted for failing to stop his car. The Superintendent of Police, who was conducting the case, exclaimed: "Most certainly a motor-car is bound to give way to everything"; but on being challenged by Mr. Firth as to his statement he carried it further by saying: "If you will let me know when you are coming on your car I will put the drunken policeman there and if you do not stop your car I will prosecute!" On Mr. Firth challenging the accuracy of his interpretation of the law that "a motor-car must give way to everything," the Superintendent proceeded to refer to a copy of the law, but apparently found in it no regulation to the effect stated by him, and subsided into silence!

After a powerful speech for the defence by Mr. Firth, Mr. Lyons Sampson was called and examined; and after his cross-examination had ended Mr. Firth called upon Mr. C. Johnson (the secretary of the Automobile Club) to speak as to certain points which had arisen in the case, and also to the fact that Mr. Sampson was a well-known, and a cautious, driver, and a gentleman who preferred to uphold the law rather than infringe it in the least degree.

At this juncture there was a hurried discussion amongst the Bench, who apparently realised that if their decision resulted in the conviction of Mr. Lyons Sampson the matter would be taken to a higher court, where the arguments would be thoroughly threshed out.

Addressing Mr. Firth, they then announced that they dismissed the case.

Mr. Firth thereupon applied for the costs, which should have been granted in the ordinary course, but they were refused.

Mr. Sampson has thus been put to considerable expense and loss of time, and has had the indignity thrust upon him of having to stand (although a request was made that he might be seated) in a police-court during a protracted hearing, owing to an apparently systematic attempt by the local police to entrap him.

As it appears to be the intention of a great many prejudiced people in authority to use the law as an engine of persecution against automobilists, the Committee of the Automobile Club should consider as to taking vigorous steps to protect lovers of the sport.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

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## COMMENTS.

### More Motor Etymology.

ETYMOLOGISTS in various parts of the world are still puzzling their heads as to suitable terms for motor-cars of different types. Some weeks ago we published a long letter on the subject from Mr. Arthur Shippey. This has apparently been read with interest, although not with approval, by an automobilist in the United States, for in the columns of one of our American contemporaries he asks: "Why not call the motor-vehicle a 'trol' (pronounce short, like 'hot,' 'pot'), riding in a trol, 'trolling,' the trol driver, 'troler,' and if a gentleman trols for sport he is a 'trolleur' (pronounce French). In order to specify the motive power of a trol, simply use electrol, gasotrol or gastrol, petrol, naphtrol, steamtrol, etc. To describe the shape of the vehicle, trolbuggy, perhaps, abbreviated to troggy, trolomnibus to trolibus, trolbuss, trolsully to trolky. This would generate 'electrolibus' for 'electrically-driven omnibus' or 'petroletor' for a 'motor-phaeton driven by petroleum.' But in average conversation the indication of the motive power would be omitted. Finally, the tricycle could be called—borrowing from the French—'trolley,' which would form petrolette, electrolette, whilst the motor-bicycle would become trolbyke or trolbike." Although we print the suggestions as to the new terms, we do not consider they are likely to meet with adoption, as some of the suggested names—as, for instance, "troggy" (!)—are of anything but an inviting character.

### A Motor Competition.

FOR some time past there has been a growing feeling of suspicion in French automobile circles that certain builders of petroleum-spirit motors have been exaggerating somewhat the horse-power capacity of their engines. Of course there are many mechanical automobilists who are able to check for themselves that their motor actually develops the horse power claimed by the maker, but, on the other hand, there are many others who are not in this fortunate position, and it is suggested that while having a motor-vehicle fitted with a motor rated at, say, 6 h.p. they are not getting out of it more than 4 h.p. Our French contemporary, *La Locomotion Automobile*, is now endeavouring to assist owners of motor-cars by organising what it terms *Le Concours de Moteurs*. The motors entered are to be subjected to a series of brake tests under the inspection of a competent jury. Each motor will be tested three different times under the most favourable conditions of carburation and ignition. The results obtained are to be published, together with the name of the builder, the rated horse power, the diameter of cylinder, the stroke, the type of ignition and carburettor, the number of revolutions, diameter of fly-wheels, weight, etc. The competition is open for both builders of motors and also owners of motor-cars, the latter thus having an opportunity of ascertaining whether the engines in their vehicles are capable of developing the power guaranteed by the makers.

### A Heilmann Motor-Car.

THE name of M. Heilmann is well known in electrical engineering circles as the designer and builder of the novel electrical locomotives in use on the Western Railway of France. M. Heilmann has, it appears, lately been devoting his attention to automobiles, and has just completed a new type of motor *avant-train*. The latter is provided with four wheels, and carries the whole of the motor and transmission gear, so that it may be attached to any type of vehicle. We hope to give a description of the new arrangement in an early issue.

### The Pope and Motor-Cars.

OUR French contemporaries to hand this week all contain a paragraph to the effect that the Pope has placed an order with a French firm for an electrical vehicle. Later accounts, however, show that the statement is not quite correct. It appears that a French motor-car concern has made his Holiness a present of a motor-vehicle, which has been accepted, but is not being used by the Pope himself. As a matter of fact the Pope has discontinued his carriage drives, and now only goes about in his carrying-chair.

### Motor-Car Accidents in France.

So many motor-car accidents have lately been chronicled in France—a few of which have unfortunately been true, while the remainder were largely the imagination of the daily press reporters—that the question was discussed at the last meeting of the Committee of the French Automobile Club. On the proposal of the *Compte de Chasseloup-Laubat*, seconded by M. Forestier, it was resolved that immediately the news of an automobile accident is received an engineer shall be despatched to the scene to enquire into the cause and prepare an official report thereon.

### Another Growl from the Stables.

WE referred last week to the somewhat alarmist position the *Stable and Kennel* has taken up in regard to motor-vehicles. The remarks of the Editor of our contemporary are, however, mild in comparison with those of a correspondent to his journal, who styles himself "Constant Reader." The latter gentleman cannot comprehend "why the legislature sanctioned the present dangerously high rate of speed, and in the second place why motors have been permitted to travel on country roads and lanes at all"! This selfish gentleman, who would appear to think that owners of horses are entitled to a monopoly of the roads, goes on to remark that "a horse of high mettle meeting a motor suddenly on a country road can hardly be persuaded to face the noisy, evil-smelling thing. To whip round in an instant and then bolt is what inevitably has to be faced by riders." Comment on such empty arguments against motor-vehicles is quite unnecessary. We will only suggest to "Constant Reader"



that ere long he will probably change his opinion. When he has become an enthusiastic automobilist he may be tempted to ask "Why hay-motors should be allowed on country roads and lanes at all?" For ourselves we will not go so far as this; unlike the correspondent above alluded to, who wants to monopolise the public roads for his horses, we believe that there is a useful sphere for both hay and auto-motors.

#### Motors for Medical Men.

THIS is the title of several letters which have lately appeared in the *British Medical Journal*. The last communication on the subject is a somewhat contradictory one, for while at the beginning the correspondent remarks, "and I would strongly urge any one having a horse and carriage not to dispose of them and buy a car," he concludes as follows: "It (a motor-car) is much more interesting than a horse-driver would think, and, taking everything into consideration, I think it suits me better than a horse." There can be no doubt of the suitability of motor-vehicles for medical men. Already quite a number of doctors are making their rounds of calls, particularly in country districts, either in motor-cars or on motor-tricycles, and when their advantages become better known we have not the least doubt that the members of the medical profession will become good customers to builders of such vehicles.

#### Motor-Cars at Newcastle.

THE tramway question at Newcastle to which we referred last week is developing, and the *Newcastle Daily Chronicle*, in the course of a long and spirited leading article, says: "We do not want wires of any sort, overhead or underground. What we do want is decent roads, which it is the duty—the scandalously neglected duty—of the Corporation to provide. The rest may safely be left to private enterprise, the motor-car, and competition. According to the municipalisers, they object to a monopoly being worked for private advantage. Very well, then; let the monopoly be abolished. The motor-car is no monopoly. It cannot become one. It is every day growing in popularity by reason of its speed, its comfort, its safety and its humanity. The motor-car is the very vehicle for whom the public have been waiting; and the only regret uttered in its regard is that the cars are not yet running up Westgate Hill. They will be soon, for the acclivity presents no obstacle, and the cars have been ordered. There can be no doubt whatever in the mind of any reasonable person, willing to accept the result of experiment, that the automobile, needing neither wires nor rails, free to choose its own track and to travel in any direction, able to cover the ground quickly, and offering no impediment to the general traffic, is destined to furnish the omnibus of the future. Indeed, it has already furnished us with the ideal omnibus."

#### A New Motor-Car Tire.

IN order to overcome as much as possible the tendency of pneumatic tires to roll on the rim, a new tire for motor-cars has lately been designed by Mr. J. Jelley, of Tires, Limited, Coventry. A feature of the new tire is the width of the base, giving, with the depth of the side flanges, great stability where the tire is attached to the rim. The attachment is by means of zig-zag wires embedded in flat flaps on the cover edges, and which overlap each other in the bed of the rim in the same manner as in the "Vitesse" cycle tire. The action of pumping up the tire causes these flaps to be firmly pressed together in the rim, holding the cover on to the rim. The corrugated wires, of which the flat flaps are composed, render them elastic, and the pressure of the air on the canvas between the corrugations causes their circumference to be reduced, thus firmly gripping the rim. The

tire is, in addition, held on with bolts, which pass through the flaps, and are secured by nuts on the outside of the rim. For a 30-in. tire four of these bolts are used. Even without them there is, it is claimed, no chance of the tire coming off the rim, they being fitted merely as a help to the tire on the driving wheels. The tire has a thick rubber tread of from 3-16 in. to 1/4 in., exclusive of the strong canvas and insertion. The tube being entirely enveloped by the cover and its edges, the tire can be taken off the wheel without removing the inner tube from it, and a new tire sprung bodily on to the rim, the old one being repaired away from the wheel.

#### Motor-Cars at Dover.

IN connection with the motor-car show which is to be held at Dover next month, applications were made on Tuesday to the local council to license some motor-victorias, omnibuses and *chars-a-bancs* to ply for hire during the week of the exhibition. We regret to learn that the applications were refused, the reason advanced for the refusal being that the vehicles would compete with local conveyances. Dover has lately been so much to the front in motor matters—the coming exhibition being largely due to the Mayor of the town—that it is to be regretted the local council in its wisdom should have marred the progress of the automobile in the district by refusing the application for licences above referred to.

#### Tests for British Makers.

EVERYWHERE it is acknowledged that the displays of the reliability of the automobile to which the people of the Continent have become accustomed have had much to do with the popularity of the motor-car in Europe. While not favourable to wild and reckless racing, it is becoming recognised by English automobilists that trials of efficiency will have to be more frequent in this country in the interests of the industry, and we understand a proposal is now before the Automobile Club of Great Britain for a contest on the western route to Edinburgh from London. The vehicles would have to arrive at their destination within time limits previously imposed, and the idea is that the times taken in ascending certain hills would be added together, and on those speeds the awards would be made. It is to be hoped that English manufacturers will respond to any appeal that may be made for entries, and the presence of a few foreign cars would give a zest to the proceedings.

#### Forthcoming Contests.

MEANWHILE several important contests have been arranged, and a race *via* Dunkirk will take place between Paris and Ostend on September 1st. There will also be a touring class starting on the 31st prox., to reach Ostend about the same time as the racing cars and travelling 90 miles each day. This is a contest in which English automobilists should enter, and Mr. C. Johnson, the Secretary of the Automobile Club, will be glad to hear from intending competitors. The race from Paris to Boulogne, which is expected to finish on September 17th, is arousing considerable interest, and two electric charging stations will be provided on the route, so that entries of electrical vehicles are anticipated. In connection with this the Automobile Club of Great Britain will probably organize a club tour to Dover, and subsequently a trip to Boulogne; whilst an exchange visit from French confreres is anticipated.

#### The Richmond Show.

WITH reference to our comment on the Richmond Show in last week's issue of *The Motor-Car Journal*, we are informed that a complete balance-sheet will be published for the information of guarantors as soon as possible.

### Sir David Salomons and the Auto- mobile Club's Policy.

We are glad to have an assurance from Sir David Salomons that our interpretation of his remarks at the Automobile Club's Richmond dinner was rather beyond his meaning. He recognises that local enterprises are justifiable and desirable, but unfortunately is of opinion that members of the Automobile Club should not be invited to contribute to the finances of such efforts unless they happen to reside in the districts where they take place. That is exactly where our difference with the views of Sir David exists. In the present state of the industry every effort to secure attention to the utility and reliability of automobiles is to be encouraged, and whether it be made by the Automobile Club in London or its active affiliated branch in Liverpool is a matter of little concern, so long as it results in general benefit to the industry. The country is so large and the work to be done is so great that there is plenty of room for energetic associations in each district, and while they are affiliated with the Automobile Club we see no fear of rival organizations being called into existence. Everybody recognises the heartiness with which Sir David Salomons has thrown in his lot with the institution in Whitehall Court, but we hope he will not discontinue his assistance to all local efforts to popularise the motor-car. For, as we have said, there is plenty of work yet to be done in making known the commercial efficiency of the new method of locomotion.

### The Liverpool Trials.

DURING the last few days Liverpool has again been the scene of important trials in connection with motor-vehicles, and those who were present last year as well as on the present occasion could not fail to have been struck with the great improvement in the vehicles taking part in the extremely arduous tests the Liverpool Self-Propelled Traffic Association subjected them to. The judges and observers started work last Friday measuring and weighing the six vehicles which had put in an appearance. On Monday, the hill-climbing tests were held, and, as will be seen by the diagrams published in another part of the present issue, these were of a most severe nature. Tuesday and Wednesday were devoted to runs respectively to Widnes and Rainford and back—distances of about 35 miles. All the vehicles did splendidly and are of commercial efficiency, and fit to be put on the market. The latest Thornycroft, that with the trailer, did remarkably well, and the pattern, we understand, is to be their standard of the future. Its pace uphill was certainly very notable. The Coulthard did not start in the third day's trials, owing to a slight mishap, but the Clarkson-Capel, with a lightened load, went through very well, the observers on that and other cars strictly keeping the drivers within the five-mile limit.

## THE KÜHLSTEIN-VOLLMER MOTOR-TRACTOR.

IN a recent issue we gave an illustration together with a few brief particulars of the Kühlstein-Vollmer motor-tractor as applied to a cab, which is made by the Kühlstein Wagenbau Gesellschaft of Charlottenburg, Berlin, and which is being introduced into this country by the Automobile Association, of Prince's Road, Holland Park Avenue, London, W. We are now able to publish several illustrations of the details of this type of vehicle. The motor and the whole of the driving gear is arranged in a rectangular box *K* (Figs. 1 and 2) situated above the middle of the front axle, the top plate of the box *K* being suspended from the pivot plate *P*, by means of bolts. The top plate *P*, which forms a rigid whole with the engine box *K*, carries a toothed crown *Z*, provided with internal teeth, which are connected with the hollow pivot *S*, also arranged thereon. This pivot is rotatably mounted on the hub *N* of the pivot plate *P* above which is screwed upon it the nut *m*.

Under the plate *P*, is rigidly fixed the steering rod *L* with its hand wheel *R*, the rod terminating in toothed gearing meshing with the toothed crown *Z* of the engine box cover *P*. For the purpose of diminishing friction, rollers *r* moving upon the bearing parts of the plate *P* are arranged on the circumference of the toothed crown.

The differential gear *D*, which is mounted directly upon the axle *a* and at one end of the same to economise space, is situated directly between the two lengths *a* and *b* of the axle; in order that the latter may form a rigid whole, the shorter length *a* is inserted within the longer *b*. By this means the axle bearing *C* is, it is claimed, relieved from cross strain, whilst the provision of an intermediate bearing for the lengths of axle *a* and *b* is rendered unnecessary. In order that both the springs *F* may support an equal load upon the two bearings *C*, driving is effected by means of the chain wheels *k*<sup>1</sup>, *k*<sup>2</sup>, and in such a manner that both of them act simul-

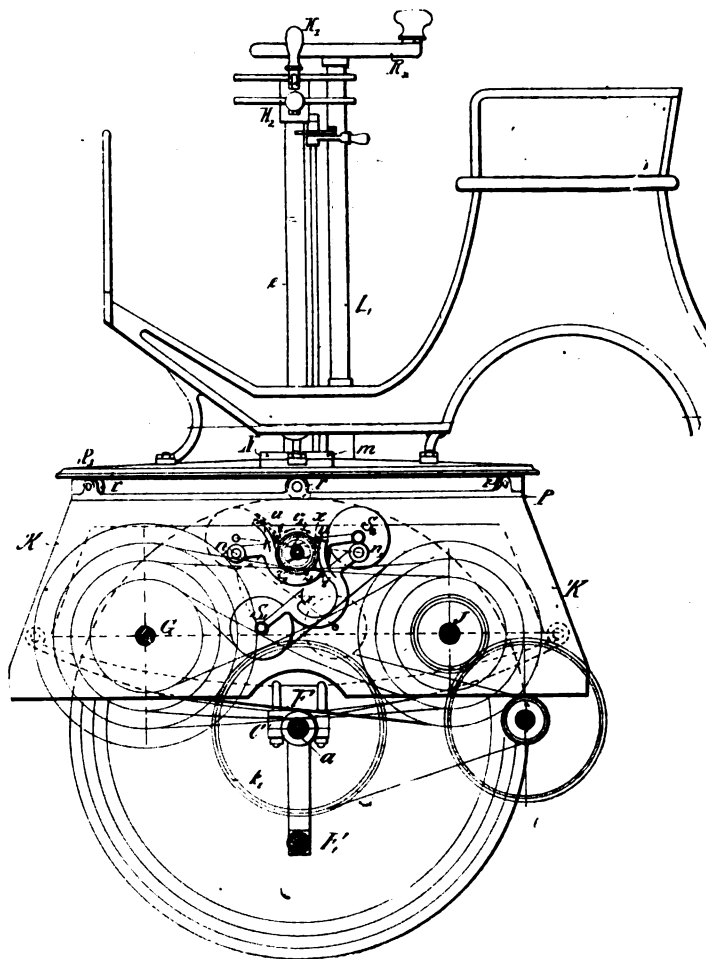


FIG. 1.

taneously upon the bevel pinions of the differential gear, this being effected by means of a sleeve *c*, through which is passed the length of axle *b*. The axle bearings *C* are made in two parts, thus enabling the lengths of axle to be inserted. The upper halves of the bearings *C*, which form a strap or staple, are directly connected with two springs *F*, by which the entire engine box and fore part of the vehicle are carried. The lower halves of the bearings are connected by means of a bent shaft *E*, which imparts to them the necessary stability and maintains the distance between them constant in the transverse direction. Lubrication is ensured by means of the annular lubricators *o*.

The motor is of the horizontal, double-cylinder, petroleum-spirit type, capable of working up to 6 h.p. It is arranged on the left part of the space *R* (Fig. 2). The ignition is electrical. Two speeds are provided, the transmission being by means of belts, which normally run slack, but tightened as desired by jockey pulleys, carried, together with the operating levers *H*, *H*<sub>1</sub>, upon the top plate *P* of the engine box.

Through this plate  $P$ , at the point where it is pivoted, passes the hollow pivot or pin  $S$ , which extends into the pivot plate  $P_1$  at its centre, in such a way that during turning of the fore-carriage it is capable of angular displacement with respect to the plate  $P$ . Within the pin or pivot  $S$  are arranged the upright tubes  $e^1 e^2$  serving to regulate the motive power. The object of this arrangement is that when the top plate  $P$  rotates the vertical tubes may rotate with it. By this means the transmission of the regulating action upon the under frame, which is itself turning, is rendered possible in a simple manner, whilst the position of the fore-carriage with respect to the vehicle is indicated to the driver.

The vertical tube  $e^1$  is rigidly connected with the operating lever  $H_1$ , and the outer tube  $e^2$  with the lever  $H_2$ , both these tubes being encased in the outer tube or sleeve  $e$ , which latter is rigidly fixed in the pivot  $S$  of the top plate  $P$

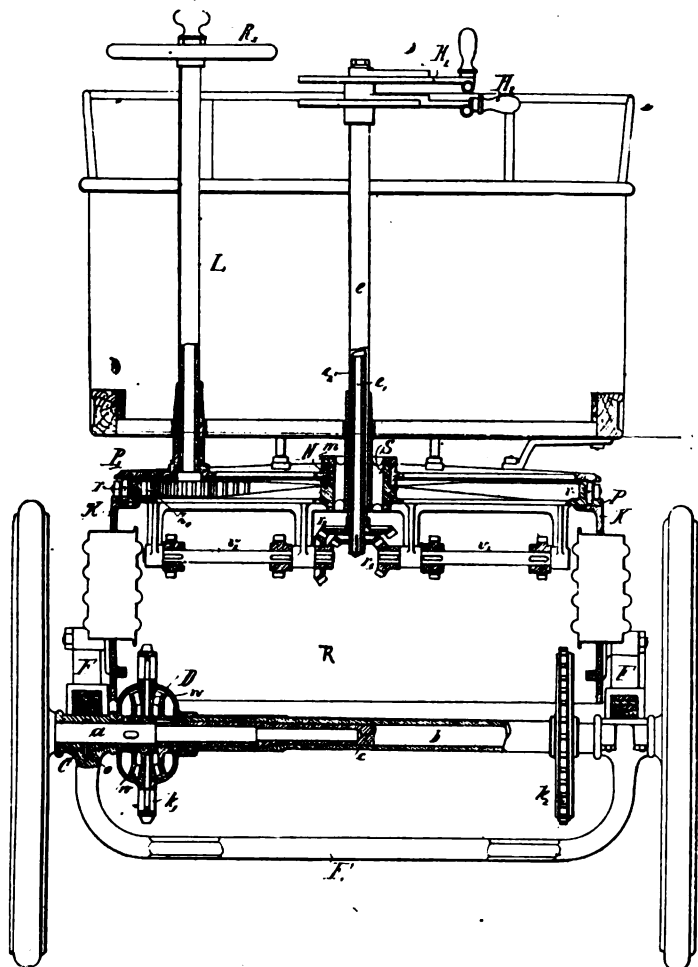
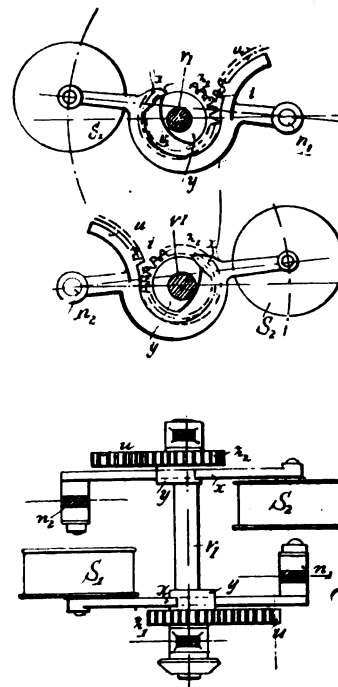


FIG. 2.

of the engine-box and at its upper portion carries the locking discs of the operating levers. The lower extremities of the tubes  $e^1 e^2$  are connected with the bevel pinions  $r^1 r^2$ , thereby enabling the shafts  $v^1$  and  $v^2$  journaled in the top plate  $P$  to be rotated by turning one of the operating levers  $H_1 H_2$  in a right or left-handed direction. The object of this arrangement is that a pair of tension pulleys  $S_1 S_2$  may be so operated that one of them only ( $S_1$  for example) tightens the belt, giving the desired transmission ratio, whilst the other tension pulley  $S_2$  remains motionless. The operation and arrangement of the tension pulley gear is illustrated in Figs. 3, 4, 5, and 6, in which a pair of tension pulleys  $S_1 S_2$  arranged upon the shaft  $v_1$ , are shown in various positions. In Figs. 3 and 4 the two tension pulleys  $S_1 S_2$  which are arranged upon levers pivoted upon opposite points  $n^1 n^2$  upon the top plate  $P$  are shown disengaged—that is to say, in both cases the toothed pinions  $z^1 z^2$  mounted upon the shaft  $v_1$  are out of engagement with the toothed segments  $u$  of the tension pulley levers. In addition to this lever the lower teeth  $i$  of the toothed segments  $u$  are raised a certain distance above

the points of the teeth of the segments  $z^1 z^2$ , because the noses  $x$  upon the tension pulley levers rest upon the concentric portion of the cam-shaped hubs  $y$  of the toothed pinions  $z^1 z^2$ .

If the shaft  $v^1$  is caused to rotate in a left-hand direction (for example) by means of the hand lever  $H_1$  (Figs. 1



FIGS. 3 AND 4.

and 2) the nose  $x$  of the tension pulley  $S_2$  falls along the reduced cam-shaped portion of the toothed wheel hub  $y$  and the tooth  $i$  gears with  $z^2$ , thereby displacing the tension pulley. During this time the pulley  $S_1$  remains fixed, because the nose  $x$  continues to slide upon the concentric portion of the hub  $y$  and thus experiences no displacement. Only when the operating lever  $H_1$  is drawn back does the tension pulley resume its initial position (Fig. 3), and upon

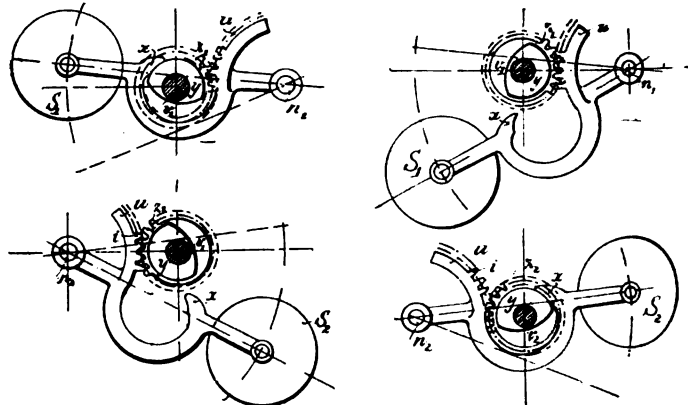


FIG. 5.

FIG. 6.

continuing to rotate the lever the tension pulley  $S_1$  becomes operative whilst  $S_2$  remains fixed. The pair of tension pulleys of the hand lever  $H_2$  act in a similar manner. It will be noticed that the construction of the turntable permits a full lock to be obtained. The Kühlstein-Vollmer tractor can be fitted to any type of vehicle; it was for some time used on mail-carts in Berlin by the German postal authorities, and has also been applied to a delivery van, which has carried a load of one ton at a fair speed over ordinary roads. At the recent exhibition at the Agricultural Hall we had an opportunity of riding in the vehicle around the demonstrating arena, and although the test cannot be called a practical one the cab appeared to run very quietly and without undue vibration.

## THE HEAVY MOTOR-VEHICLE TRIALS AT LIVERPOOL.



THE interest of the automobile world has this week been centred on the heavy motor-vehicle trials carried out at Liverpool under the auspices of the Liverpool Self-Propelled Traffic Association in conjunction with the Royal Lancashire Agricultural Society. The chief object of the trials is to encourage the development of types of heavy motor-wagons suitable for trade and agricultural requirements in the neighbourhood of Liverpool, which shall be capable of economically taking the place of horse haulage and of competing with the existing railway rates in the transport of heavy loads of goods over distances of up to forty miles. In connection with the trials the Royal Lancashire Agricultural Society offer one gold and one silver medal in each of the four classes mentioned below, the medals being accompanied by the diplomas of both bodies.

The general regulations required that (1) The vehicle shall be self-propelled; (2) the vehicle shall be capable of going anywhere that a horse-drawn vehicle carrying the same load is ordinarily required to go, and of being placed in the same positions and withdrawn therefrom without external assistance; (3) the vehicle shall be capable of working into and out of an embayment of one-and-a-half times its own length; (4) the vehicle shall be capable of starting from rest on and mounting a gradient of 1 in 10; (5) the capacity of any water tanks, whether the same be fitted for feed, cooling or other purposes, shall suffice for a run of fifteen miles on the basis of the consumption during the trial runs; (6) such portion of the platform of the vehicle as is designed to carry the load shall be level, and the height of the floor-line, measured either when light or laden, shall be not less than 3 ft. 6 in., and shall not exceed 4 ft. 3 in.; (7) the vehicle shall conform in all respects to the requirements of the Locomotives on Highways Act, 1896; (8) all working parts shall be properly encased; (9) provision shall be made for the testing of the quantity of water evaporated; and (10) all manœuvres shall be performed by the vehicle when fully laden and provisioned.

The following are the points to be taken into consideration by the judges in making the awards:—(a) Cost—Economy of working, including attendants. (b) Control—Stopping, starting, changing speed, steering and reversing, particularly under adverse conditions, such as on inclines, in confined spaces, or on greasy surfaces. (c) Working—Adhesion on greasy surfaces when light and when laden; noise, smell, visible vapour, dust or other nuisance when travelling; number of mechanical operations requiring attention from the driver; efficiency of brakes; time occupied in preparing the vehicle for service on the road. Speed—within legal limits; ability to travel between the dépôts without taking or receiving supplies of fuel, oil, gas, electrical or chemical materials or electrical current, water, or of any agent employed for actuating the motor or assisting its working; ability to travel between the dépôts without stopping to effect repairs, adjust parts, apply lubricants, or for any other purpose or cause not provided for in the itinerary; freedom from a breakdown of any nature. (d) Construction—Efficiency of wheels, nature and efficiency of gearing, strength of frame and working parts, quality of workmanship, efficiency of springs, freedom from complicated or over refined parts, facility with which repairs can be effected, capacity of bunkers or oil tanks, ratio of available platform area to extreme moving area in any horizontal plane, ratio of tare to weight of freight carried during the trials. (e) Steam-propelled vehicles—Evaporation efficiency of boiler, ample supply of steam, action of feed-pumps or injector, consumption of fuel and water per mile, leakage of steam or water, arrangements for stoking.

The competition was divided into four classes, the entries in each of which were as follows:—

CLASS A.—Minimum load 2 tons, maximum tare 2 tons, minimum level platform area 50 square feet.

*The Automobile Association, Ltd., London.*

*T. Coulthard & Co., Cooper Road, Preston.*

*The Thornton Motor Co., Ltd., Worsley Mills, Manchester.*

CLASS B.—Minimum load 3½ tons, maximum tare 3 tons, minimum level platform area 65 square feet.

*Bayleys, Ltd., Newington Causeway, S.E.*

*The Clarkson & Capel Steam Car Syndicate, Ltd., Deverell Street, London, S.E.*

*The Graham Equipment Co., Boston, Mass., U.S.A.*

*The Lancashire Steam Motor Co., Leyland.*

*Simpson & Bodman, Cornbrook, Manchester.*

*The Steam Carriage and Wagon Co., Ltd., Homefield, Chiswick.*

CLASS C.—Minimum load 5 tons, maximum tare 3 tons, minimum level platform area 80 square feet.

*C. & A. Musker, Ltd., Liverpool.*

CLASS D.—Minimum load 6½ tons, maximum tare 4 tons, minimum level platform area 110 square feet.

*The Steam Carriage and Wagon Co., Ltd., Homefield, Chiswick.*

On arriving at Liverpool on Monday morning we found that out of the eleven vehicles entered only six had put in an appearance, the absentees being those shown above in italics. We are able to give illustrations in Figs. 1 to 6 of the competing vehicles, and before proceeding further it may be useful here to briefly describe them.

The only vehicle competing in Class A is the 2-ton steam lorry (Fig. 3) of Messrs. T. Coulthard & Co. This vehicle is 15 ft. 6 in. long by 6 ft. 6 in. extreme width. The wheel base is 9 ft. 6 in. longitudinally and 5 ft. 8 in. centre to centre of tyres transversely. The platform, which is carried on a steel frame, is 10 ft. 6 in. by 5 ft. 8 in. wide and has therefore 56.7 sq. ft. of available surface for carrying goods. The height of the platform when light is 3 ft. 9 in. and 3 ft. 6½ in. when loaded with 2½ tons. The front wheels are of iron throughout, 2 ft. 9 in. diameter, and have tyres 4 in. wide; the driving wheels are 2 ft. 11½ in. diameter and have tyres 5 in. wide, the former being fitted on Ackermann's system, controlled by worm gearing and a hand wheel. The boiler is of the fire-tube type and has 77 sq. ft. of heating surface; it is constructed for a working pressure of 200 to 225 lb. per sq. in. Water is fed to the boiler by means of a small pump which is driven at a reduced speed by means of gearing. The inside of the boiler is so arranged that it can be lifted out for cleaning without removing any of the steam fittings. Liquid fuel is employed to generate steam. The lorry is fitted with an air condenser placed in the front of the vehicle. The regulation of the supply of the oil to the burner is automatic. The burner proper is a casting suspended inside the fire-box of the boiler by a coil of piping, the oil being forced by compressed air through the regulator to the burner and vaporised on its passage to the orifice. The burner is started by igniting an asbestos pad soaked with ordinary paraffin. The engine is of the triple-expansion vertical type, and develops 14 b.h.p. when running at 500 revolutions per minute. The cylinders are 2½ in., 4½ in., 6 in. by 5 in. stroke. Spur gearing is used to transmit the power from the engine-shaft to the first motion shaft by means of friction clutches. Hans Renold's "silent" chains form the connection between the counter-shaft, the differential gear and the driving wheels. The gearing is arranged to give a ratio of 7, 11½ and 19½ to 1 between the engine and the driving wheels. The vehicle is fitted with two brakes—a hand brake on the second motion shaft and a shoe brake on driving wheels. The former is actuated by a foot lever, the latter by worm gearing. By means of a friction clutch the direction of the vehicle can be readily reversed, which thus gives an additional brake. The water tank holds 50 gallons and the oil tank 25 gallons. The cylinders of the engine are arranged in such a manner as to provide only a very thin wall between the bore of each cylinder, the piston

## THE COMPETING VEHICLES AT LIVERPOOL.



FIG. 1.—THE CLARKSON-CAPEL STEAM LORRY.

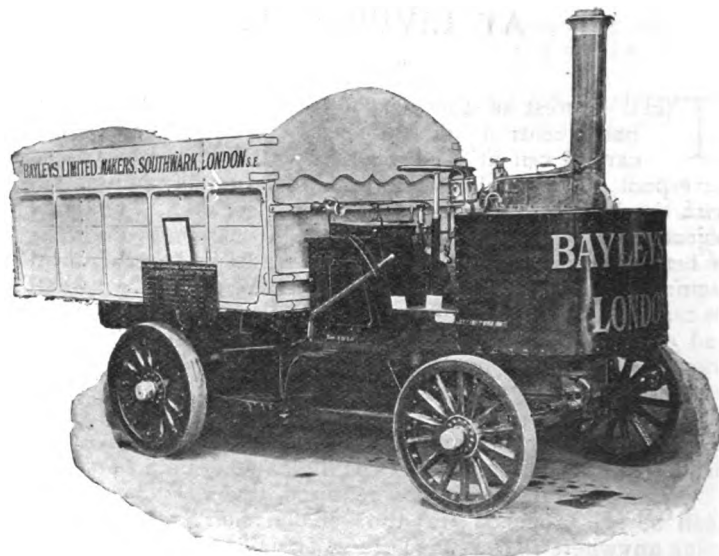


FIG. 2.—MESSRS. BAYLEYS' STEAM WAGON.

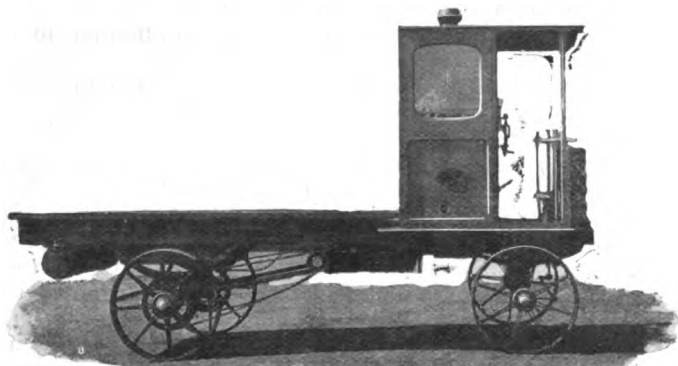


FIG. 3.—MESSRS COULTHARD'S STEAM LORRY.

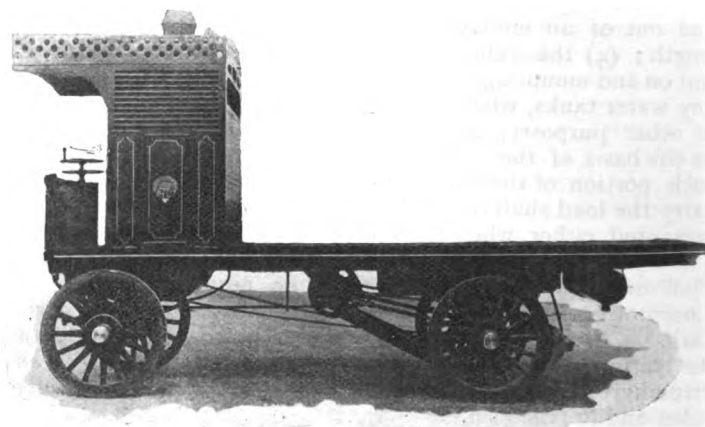


FIG. 4.—THE LEYLAND STEAM LORRY.



FIG. 5.—THE THORNYCROFT STEAM LORRY.

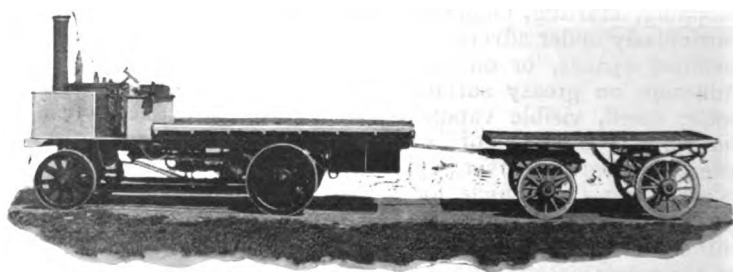


FIG. 6.—THE THORNYCROFT STEAM LORRY WITH TRAILER.

valves being located at the back of the cylinders. By this system the makers claim that they are enabled to dispense with the usual central bearing, and by using a slightly larger shaft and careful balancing to ensure uniform pressure on the two main bearings. The hot-water tank is also arranged so that the condensed steam is conveyed from the feed-water heater, the air condenser and the drain cocks on the cylinder. The object of using this hot-water tank is as follows: Assuming the cold-water tank to be filled with water, the hot-water tank will then be empty and the proportions of the two tanks are such as to ensure the whole of the cold water having been taken from the tank before the hot-water tank has been filled; the hot water is then transferred to the cold-water tank and the latter filled up. Three forward speeds— $2\frac{1}{2}$ ,  $4\frac{1}{2}$  and  $7\frac{1}{2}$  miles per hour—are provided, with one (two miles per hour) reverse.

Coming now to Class B, it is unnecessary to describe at length Messrs. Bayleys' interesting vehicle (Fig. 2), of which we published a description so recently as our issue of the 21st ult. We may mention, however, that the working pressure of the boiler is from 175 to 250 lb. per square inch. It is fed by means of a pump on the engine and an injector. The design of the underframe of the vehicle is claimed to provide for perfect grip of both driving wheels on the road surface under every varying condition. Two ratios of gearing are provided, viz., 13·7 to 1, and 8·4 to 1. The wheels (diameters 2 ft. 9 in. front and 3 ft. hind) have wood spokes and felloes and steel stocks. The tires are 4 in. front and 5 in. hind. The capacity of the water tank is 75 gallons. The tare weight of the vehicle is 2 tons 19 cwt. 2 qrs.; with water and fuel in running order it weighs 3 tons 8 cwt.

The Clarkson Capel 4-ton steam lorry (Fig. 1)



DIMENSIONS RECORDED JULY 29TH, 1899.

| Vehicle.           | Extreme Dimensions over all. |     |     | Dimensions of Level Platform. |     | Available Platform Area (square feet). | Diameter of Wheels. | Width of Tires. | Height of Floor Lines & Platform, Light Laden. | Length of Wheel Base. | Driving Wheel Gauge, centre to centre of Tires. | Angle of Lock. | Capacity of Boilers to Mean Glass.      | Capacity of Water Tank. | Capacity of Bunkers. | Capacity of Oil Tank. | Tare without fuel and water. |      |      |      |       |      |    |    |   |    |   |    |
|--------------------|------------------------------|-----|-----|-------------------------------|-----|--|---------------------|-----------------|--|-----------------------|---|----------------|---|-------------------------|----------------------|-----------------------|------------------------------|------|------|------|-------|------|----|----|---|----|---|----|
|                    | L.                           | B.  | H.  | L.                            | B.  |  |                     |                 |  |                       |   |                |   |                         |                      |                       |                              |      |      |      |       |      |    |    |   |    |   |    |
| No.                | ft.                          | in. | ft. | in.                           | ft. | in.                                    | ft.                 | in.             | ft.  | in.                   | ft.   | in.            | degs.                                   | galls.                  | galls.               | cwts                  | galls.                       | tns. | cts. | qrs. | lb.   |      |    |    |   |    |   |    |
| 9. Bayleys ..      | 16                           | 5   | 6   | 6                             | 8   | 7                                      | 9                   | 9½              | 6  | 2½                    | 60  | 8              | { F. 2 8½<br>B. 2 11 }                  | 5                       | 9½                   | 8                     | 5½                           | 5    | 8    | 25   | 19'0  | 82   | 3  | —  | 2 | 19 | 1 | 7  |
| 6. Clarkson ..     | 17                           | 9   | 6   | 5                             | 10  | 10                                     | 11                  | 10              | 6  | 4                     | 69  | 7              | { F. 3 2<br>B. 3 5<br>F. 4½<br>B. 4½ }  | —                       | 9                    | 11                    | 5                            | 3    | —    | —    | —     | —    | —  | —  | 2 | 19 | 3 | 20 |
| 1. Thornycroft ..  | 16                           | 0   | 6   | 5                             | 8   | 5                                      | 10                  | 0               | 6  | 6                     | 65  | 0              | { F. 2 9<br>B. 3 3<br>F. 4½<br>B. 5½ }  | 4                       | 0                    | 8                     | 11½                          | 5    | 6½   | 34   | 19'25 | 114  | 3  | —  | 2 | 19 | 3 | 19 |
| 5. Leyland ..      | 18                           | 2   | 6   | 5                             | 10  | 11                                     | 2                   | 6               | 5  | 8                     | 70  | 8              | { F. 3 3<br>B. 3 3<br>F. 4<br>B. 5 }    | 3                       | 9½                   | 9                     | 11                           | 5    | 3    | 26   | 22'0  | 50   | —  | 20 | 2 | 17 | 0 | 1  |
| 3. Coulthard ..    | 15                           | 7   | 6   | 7                             | 9   | 4                                      | 10                  | 5               | 5  | 5                     | 56  | 4              | { F. 2 9½<br>B. 2 11½<br>F. 4<br>B. 5 } | 3                       | 8½                   | 9                     | 6                            | 5    | 8    | 30   | 15'0  | *256 | —  | 22 | — | —  | — | —  |
| 2. Thornycroft     | 18                           | 1   | 6   | 6                             | 9   | 0                                      | 12                  | 0½              | 5  | 7½                    | 67  | 7              | { F. 2 10<br>B. 3 3<br>F. 4½<br>B. 5½ } | 3                       | 9                    | 9                     | 11                           | 5    | 6½   | 35   | 25'0  | 160  | 5½ | —  | 3 | 3  | 1 | 9  |
| (4) Trailing Lorry | 10                           | 7   | 6   | 2                             | 3   | 9                                      | 10                  | 5½              | 5  | 6                     | 57  | 5              | { F. 2 3<br>B. 2 11<br>F. 3<br>B. 3 }   | 3                       | 7                    | 5                     | 6                            | 5    | 3    | —    | —     | —    | —  | —  | 0 | 14 | 2 | 27 |

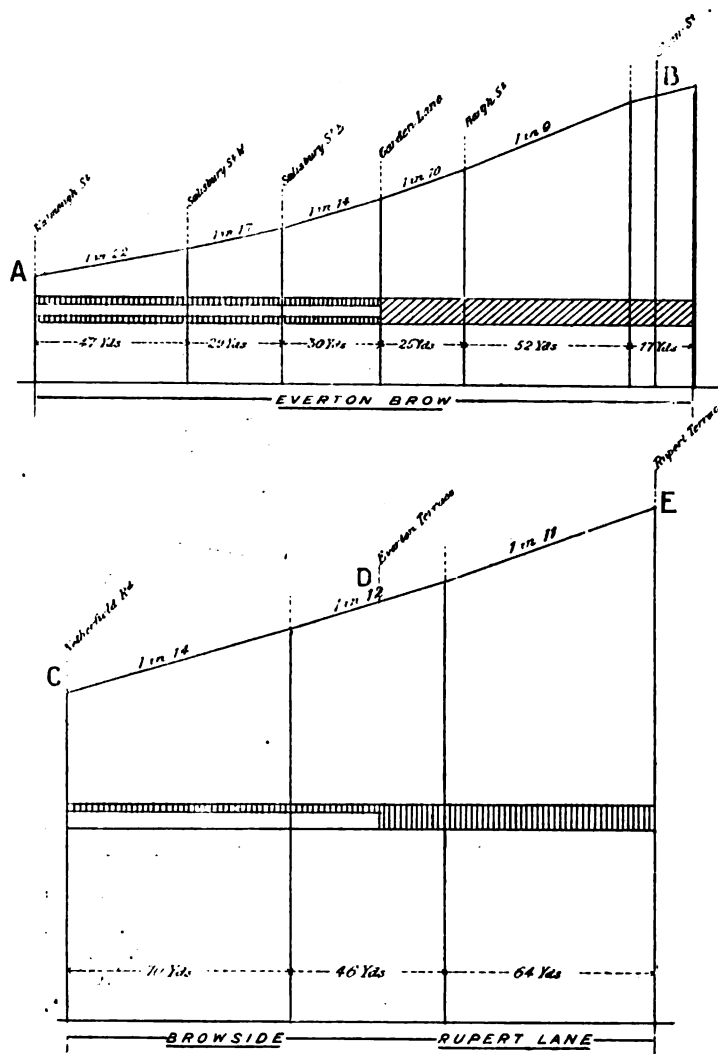
1. No ash pan.  
2. \* Hot well 28½ gallons.

3. No cover on driving chains.  
(4) Total length of motor and trailer 32 ft. 6 in.

has a frame constructed of channel steel, to which the boiler, machinery, and springs, as well as the platform and cab, are attached. The boiler is of the vertical type, with small inclined cross tubes of steel. The heating surface is 66 square feet, supplemented by 14 square feet of heating surface in a copper feed coil located in the uptake. The boiler feed is automatically controlled by the Clarkson-Capel reciprocating float gear, which relieves the driver's attention from the water gauge. A pump, driven by the main engine, operates in conjunction with the float gear, but an injector is provided as a stand-by. The boiler is also fitted with steam and water gauges, steam blower, twin safety valve, set to 220 lb. (being 20 lb. in excess of the working pressure), blow-off cock, with safety bye-pass, mud plugs and fire door. The boiler is fired by one of Clarkson's oil Bunsen burners. In this apparatus the oil is vaporised in a heated tube, and a regulated jet of vapour induces with a suitable proportion of air, which passes into a mixing chamber, and from this chamber the mixture issues through regulated openings, and is burned. The preliminary mixing of air with the vapour, it is claimed, improves the combustion, prevents smoke, and also enables a higher power flame to be produced efficiently in a fire box of given dimensions than would otherwise be possible. The engine is a two-cylinder compound (marine type) enclosed and self lubricating by an oil force pump and distributing tubes. It has Stephenson link gear and piston valves to both cylinders. The high pressure cylinder is 2½ in. diameter; low pressure 6 in. diameter by 4 in. stroke. The case is constructed of aluminum and the cylinders are fitted with safety relief valves and drain cocks. Two speeds are provided corresponding to six and two miles an hour. The exhaust steam is dealt with by special atmospheric condensers fitted into the roof of the cab, a propelling fan being used to circulate the air for cooling purposes. The condensed steam returns to the water tanks located in front on each side of the boiler. The oil tanks are located in the rear of the car. A steam brake is fitted to each of the driving wheels, and comes into operation by a reverse movement of the steam regulation lever. Another brake in the form of a band on the engine shaft is operated by a foot lever; the level platform area is 66 square feet.

The Lancashire Steam Motor Co.'s steam lorry is shown in Fig. 4. The boiler is of the Company's fire-tube type, and has 110 square feet of heating surface. It is constructed for a working pressure of 200 lb. The water is fed to the boiler by means of a small feed-pump, which is set to give a constant feed. The wagon is fitted with an air-condenser, on the roof of the cab. The inside of the boiler can be lifted out for cleaning without removing any of the steam

fittings. Liquid fuel is employed to generate steam. When the steam acquires the desired pressure the deflection of a special diaphragm causes the closing of the oil supply valve, and this



FIGS. 7 AND 8.—DIAGRAM OF GRADIENTS—HILL-CLIMBING CONTESTS.

valve is re-opened by the action of a spiral spring when the steam pressure is reduced. The supply of oil to the burner is thus so regulated that steam pressure should be maintained

automatically. The engine is of the compound, vertical, enclosed type, and gives 14 b.h.p. at 500 revolutions. Spur gearing is used to transmit the power from the engine-shaft to the first counter-shaft, reverse motion being effected by means of a clutch. Hans Renold's chains form the connections between the first counter-shaft, the differential gear and the driving wheels. The vehicles are fitted with two brakes, a hand-brake on the first counter-shaft and a shoe-brake on the driving wheels. The former is actuated by a foot-lever, the latter by worm gearing. The water tank holds 46 gallons, and the oil tank 20 gallons.

The Steam Carriage and Wagon Co.'s (Ltd.)  $3\frac{1}{2}$ -ton steam lorry (Fig. 5) is now fairly well-known and consequently does not require a lengthy description. The boiler is of the Thornycroft water-tube type, with special arrangements for the control of steam, and is fitted with a silent blowing safety valve and an auxiliary safety valve with hand-easing gear. The boiler is so constructed that all its tubes can be thoroughly cleaned inside and outside, and, when necessary, can be re-tubed in position. An injector is also fitted for auxiliary feeding in addition to the feed pump. The engine is compound, reversing and entirely enclosed in a dust-proof and oil-tight casing. The gearing is of the silent chainless type and including a two-speed gear. The wheels are of the military type, with metal naves, oak spokes, ash felloes. A powerful brake is fitted capable of stopping the vehicle within

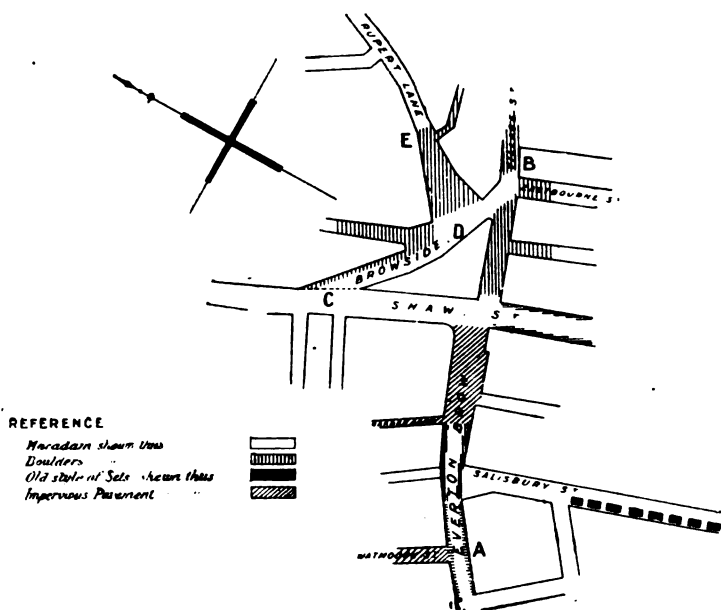


FIG. 9.—DIAGRAM OF ROUTE OF HILL-CLIMBING CONTEST.

20 ft. when at full speed. The "body" is of the open-platform type with a floor area of 65 square feet. The weight of vehicle light is 2 tons 18 cwt., while the weight in running order with full load is 7 tons 1 cwt.

In Class D the only entry was that of the  $6\frac{1}{2}$ -ton steam lorry and boiler (Fig. 6) of the Steam Carriage and Wagon Co., Ltd. The lorry is identical with the one above described, the only difference being that it is provided with a 3-ton trailer. The weight of the vehicle light is 3 tons 19 cwt. 2 qr., while the weight in running order with full load is 11 tons 15 cwt.

On Saturday last the competing vehicles were measured and weighed under the supervision of the judges—Mr. M. C. Bannister, A.M.I.C.E., Mr. E. R. Calthrop, Mr. S. B. Cottrell, M.I.C.E., Professor Hele-Shaw, LL.D., M.I.C.E., Mr. Boverton Redwood, F.R.S.E., F.I.C., and Mr. H. H. West, M.I.C.E. The measurements, etc., are given in the table on the preceding page.

#### THE TRIALS.

The first day, Monday, was devoted to a trial of the hill-climbing capabilities of the vehicles. The course selected was a zig-zag one from Watmough Street, by way of Everton

Brow, Shaw Street, and Browside, to Rupert Lane, a distance which, although only about one-fifth of a mile, severely tested the powers of the motors. The smallest gradient is 1 in 22, and the steepest 1 in 9, over roads which are mainly composed of granite setts and petrified kidneys (see diagrams Figs. 7 to 9).

The hill-climbing trial was divided into two sections; first the vehicles had to go over the course unloaded, and again with a full load. Messrs. Bayleys' steam trolley, unloaded, made a false stoppage, but recovered and restarted with a few efforts at the authorised point of stoppage on the first gradient. Afterwards, with a load of  $3\frac{1}{2}$  tons, it had some difficulty in getting off from the stopping point on the



FIG. 10.—THE HILL-CLIMBING CONTEST—COULTHARD'S LORRY.

brow, but otherwise behaved well in ascending and descending. Clarkson & Capel's 4-ton steam lorry failed to ascend the hill unloaded, and the driver, in going down hill, was compelled, from the overpowering momentum and speed involved, to make a sweep which looked terribly dangerous, but which fortunately was achieved without mishap. The ascent with the load was made rather slowly, and a ton had to be taken off before the work could be accomplished. The Thornycroft vehicle seemed to the ordinary onlooker to do its work better than any, both unloaded and loaded, taking into account the accuracy of stoppage and the way in which it ascended and returned. Messrs. Coulthard & Co's vehicle, which is for some reason out of the competition, had tolerable success, this remark also applying to the Leyland vehicle. The Thornycroft  $6\frac{1}{2}$ -tons steam lorry and trailer did well unloaded, but better with the heavy load, stopping and starting almost instantaneously.

The programme on Tuesday was a run of about thirty-five miles, the route being: Prince's Dock, Walter Street, Dale Street, William Brown Street, London Road, Prescott

Street, Old Swan, Prescot, Rainhill, Great Sankey, Widnes, Ditton, Speke Church, Garston, Aigburth Road, Park Road, St. James Street, Park Lane, Canning Place, South Castle Street, Castle Street, Water Street; back to the Dock Yard. The start was made shortly after half-past ten, the vehicles setting out separately, and stoppages being made on the steepest gradients both in ascending and descending to test the accuracy and facility with which the cars travelling at their ordinary rates of speed could be brought to a standstill and restarted. The vehicles received their stores before setting out, and were not allowed to take in any additional supplies on the route excepting at fixed points, where only water was provided. No. 2 vehicle (Thornycroft's trailer) maintained the best speed throughout, its average being about six miles per hour, which the regulations of the Locomotives on Highways Act, 1896, permit that particular class of vehicle to do. The other vehicles competing were only allowed a maximum speed of five miles per hour. The

severe enough test of the wagons' capabilities, as it lay amid thick traffic.

Despite the drawbacks, no mishap occurred, and the wagons, with their heavy loads, went up the hills with ease. Between Liverpool and Prescot the pace was naturally slow for these reasons, but beyond, where macadamised roads replaced paved ones, the heavy lorries steamed along at a good rate. Within two miles of Warrington the road marked out for the course ran at an acute angle to the one the wagons were travelling by, but this did not seem to affect them in the least, and the nasty turning was negotiated without any trouble.

On Tuesday evening a company of gentlemen, including the officials, judges, and representatives of several important Government Departments, etc., dined together in the Adelphi Hotel, Liverpool, under the presidency of Professor Hele-Shaw. The improvements which had taken place since last year in the competing vehicles, the generally satisfactory re-



FIG. 11.—THE HILL-CLIMBING CONTEST—THE THORNYCROFT LORRY AND TRAILER.

vehicle referred to, carrying a load of  $6\frac{1}{2}$  tons, reached the Liverpool depot shortly after five o'clock, having accomplished the run without a hitch. It was closely followed by the same firm's vehicle No. 1, carrying a load of  $3\frac{1}{2}$  tons. Vehicle No. 5, belonging to the Lancashire Steam Motor Company, with a load of four tons, arrived next, the remaining ones competing reaching Liverpool in fairly close order. The most important result deduced from Tuesday's trials was a demonstration of the marked advance on last year's trials in the stability of tires and wheels. Last year these parts of the vehicles were generally too weak to bear the strain of vibration over rough roads, and had to be frequently repaired. The route selected, though it had no gradient so steep as that on Monday's hill-climbing trials, included some rather stiff acclivities, the chief of which was Prescot Hill, its gradient being 1 in 17. The first part of the course was a



FIG. 12.—THE HILL-CLIMBING CONTEST—THE THORNYCROFT STEAM LORRY.

sults of the tests this week and the adaptability of automobile vehicles as a substitute for horse traction furnished a theme of universal congratulatory comment in the after-dinner speeches.

On Wednesday another run of about thirty-five miles was made, the route being Prince's Dock, Chapel Street, Tithebarn Street, Moorfields, Dale Street, Byrom Street, Scotland Road, Walton Road, County Road, Rice Lane, Walton Vale, Aughton, Ormskirk, Scarth Hill, Rainford, Mossborough, Knowsley, The Hazels, Old Swan, Prescot Street, London Road, William Brown Street, Dale Street, Moorfields, Tithebarn Street, Chapel Street, to the Dock-yard. The competing vehicles set out from the dock yard about ten o'clock. The steam lorry of Messrs. T. Coulthard and Co., which had been withdrawn from the contest on the first day, did not take part in the procession on account of

certain minor defects which could not be repaired in time, and from the customary driver being unexpectedly called out of England. Owing to the preparation for the electric tram-cars in Scotland Road the original route mapped out had to be slightly departed from, the cars reaching the Rotunda Theatre by the way of Marybone, Gardner's Row, Bevington Bush, and Maddox Street, a circumstance which added both to the distance and to the difficulties of manœuvring from the narrowness of these streets. Additional inconvenience in the route was experienced at Ormskirk, where part of Moor Street is undergoing repair. The inconvenience was modified, however, through Mr. R. C. Ivy, the district surveyor, kindly placing men with flags at various points to indicate the routes. The vehicles performed their work with much the same success as on the previous day. Up to Aughton there had been no mishap, and the competition was carried through without anything which could be classed in that category—an exceedingly gratifying circumstance as compared with that of last year's, when the rough roads in the vicinity of Ormskirk practically demolished several of the wheels. The competing cars arrived at the Prince's Dock, in completion of the run, very much in the same order as on the previous evening, Thornycroft's No. 2 being first, their No. 1 second, and the others following at short intervals. All the vehicles which started succeeding in completing the allotted journey without accident of any kind. Two got their axles a little overheated, but not so seriously as to necessitate a stop, the affected parts being successfully seen to in the time necessitated by the delay at one of the depots.

The appended table shows the times occupied by the different vehicles on the runs on Tuesday and Wednesday:—

| August 1st. |                     |                        |                            |  |
|-------------|---------------------|------------------------|----------------------------|--|
| No. of Car. | Name.               | Time of Leaving Depot. | Time of Arriving at Depot. | Time occupied (including 45 min. compulsory stop). |
|             |                     | h.m.                   | h.m.                       | h.m.   |
| 1           | Thornycroft .. ..   | 10.20                  | 5.54                       | 7.34   |
| 2           | Thornycroft .. ..   | 10.17                  | 5.33                       | 7.16   |
| 3           | Coulthard .. ..     | 10.46                  | 8.29                       | 9.43   |
| 5           | Leyland .. ..       | 10.33                  | 6.51                       | 8.18   |
| 6           | Clarkson & Capel .. | 11.38                  | 9.11                       | 9.33   |
| 9           | Bayleys .. ..       | 10.26                  | 7.37                       | 9.11   |
| August 2nd. |                     |                        |                            |  |
| 1           | Thornycroft .. ..   | 9.58                   | 5.13                       | 7.15   |
| 2           | Thornycroft .. ..   | 9.55                   | 4.41                       | 6.46   |
| 5           | Leyland .. ..       | 10.13                  | 6.20                       | 8.7  |
| 6           | Clarkson & Capel .. | 10.34                  | 6.15                       | 7.41   |
| 9           | Bayleys .. ..       | 10.15                  | 6.29                       | 8.14   |

As already mentioned, each of the vehicles in their runs has been accompanied by observers, the names of the gentlemen who have acted in that capacity being shown below:—

| BAYLEY'S.                   |                      |                        |
|-----------------------------|----------------------|------------------------|
| July 31st.                  | August 1st.          | August 2nd.            |
| A. Ladge                    | C. Charlewood        | Hy. Fowler, M.I.C.E.   |
| J. A. Clarke                | J. Sutherland        | E. A. Rosenheim, B.Sc. |
| CLARKSON-CAPEL.             |                      |                        |
| J. Bibby, B.Sc.             | J. C. W. Humphrey    | J. R. Taylor           |
| J. Maud                     | N. J. Martin, B.Sc.  | C. Muspratt            |
| THORNYCROFT.                |                      |                        |
| C. Charlewood               | Jas. Bibby, B.Sc.    | J. H. Lowery           |
| J. Sutherland               | F. Bushell           | J. Maud                |
| LEYLAND.                    |                      |                        |
| J. R. Taylor                | W. Naylor, M.I.C.E.  | C. Charlewood          |
| C. Muspratt                 | J. H. Lowery Curtis  | J. Sutherland          |
| COULTHARD.                  |                      |                        |
| J. H. Lowery                | Captain Walker, R.E. | J. R. Taylor           |
| — Curtis                    | A. Lodge             | C. Muspratt            |
|                             | J. H. Clarke         |                        |
| THORNYCROFT (with trailer). |                      |                        |
| J. C. W. Humphrey           | F. E. Baron          | W. Naylor, M.I.C.E.    |
| N. J. Martin                | J. R. Taylor         | A. Lodge               |
|                             | C. Muspratt          | J. H. Clarke           |

Throughout, the trials have been followed by a very large and interested gathering, and it must have been encouraging to the authorities to find such deep interest displayed in the tests. Among the many persons who have followed the trials may be mentioned: From the War Office, Mr. L. F. Hawkins, R.E., Captain J. H. Ll. Johnstone, Captain H. G. Joly de Lotbiniere; from the Post Office, Mr. Salisbury (postmaster), Mr. Fairgray (chief superintendent), Mr. Barrett (superintendent), Mr. Thompson (assistant superintendent), Mr. James (chief clerk); from the Local Government Board, Mr. G. W. Willcocks; from the Liverpool Chamber of Commerce, Mr. F. C. Danson and Mr. A. L. Jones; and from the Liverpool Dock Board, Mr. Miles Kirk Burton. Other important bodies also represented included the Automobile Club de France, Liverpool Corn Association, the Corporations of Glasgow, Birmingham, Manchester, Bradford, Salford, Southport, Barrow-in-Furness, Bootle, Chester, Birkenhead, and the local authorities of Waterloo, West Hartlepool, Gateshead, Wellington Quay, and some of the London Vestries. Amongst those present on the various cars accompanying the trials were Mr. M. C. Bannister, Mr. E. R. Calthrop, Mr. S. B. Cottrell, Mr. A. Ashworth, Mrs. A. Ashworth, Mr. Darley (Leeds), Mr. Holt (Birmingham), Mr. J. Walwyn White, Mrs. Walwyn White, Miss D. Shrapnell Smith, Miss N. Smith, Mr. J. J. Denney (Liverpool), Mr. A. Davis (Audenshaw), Mr. W. Byrne, Mr. Cooper (Cookstown), Mr. Ernest Samuelson (Banbury), Dr. Wolff (Berlin), Mr. W. Fletcher, Mr. Tinne, Mr. H. W. Rushton (Bolton), Mr. Douglas Leechman, Mr. J. Hartley Burton, Mr. S. T. Chadwick, Mrs. Hartley Burton, Miss Prescott, Mr. J. A. Bradshaw, Mr. Alfred Burgess, Mr. Charles Cordingley, Mr. J. Puxley Pearse, Mr. W. Naylor, Mr. Preston, Mr. A. J. Aldred, Mr. Pettigrew, Mr. Burrows, Mr. Musker, Mr. Spurrier, Mr. J. Harvey, Mr. Toulmin, Mr. Norris, Mr. Jesse Ellis, Mr. Critchley, etc.

Lord Derby was expected to attend some part of the proceedings, but finding himself unable to carry out his intention on account of a pressure of engagements, including the very large house party being given by him at Knowsley in connection with the Royal Lancashire Agricultural Show, he conveyed his regrets both by letters to Mr. Shrapnell Smith, the secretary, and through the Hon. Arthur Stanley, M.P. The gentlemen who have been watching the trials on behalf of the Government and various corporations have expressed themselves highly satisfied with the results obtained. They all agree that since the trials of a year ago distinct advance has been made in the matter of heavy motor-vehicles. Major Hawkins, R.E., who represented the War Office, expressed his belief that ere long self-propelled vehicles would play an important part in respect of the transport work in the Army. The trials have been carried through without a hitch and reflect great credit on the organizing authorities. A word of praise must also be awarded to the indefatigable attention of the honorary secretary, Mr. E. Shrapnell Smith.

#### THE AWARDS.

Just as we go to press we learn that the following awards have been made: Class B.—Gold Medal, the Steam Carriage and Wagon Co., Ltd. Silver Medals, Messrs. Bayleys, Ltd., and the Lancashire Steam Motor Co. In Class D a gold medal has been awarded to the Steam Carriage and Wagon Co., Ltd.

A NEW company has just been formed at Marseilles, France, with a capital of £14,000, to be known as Les Ateliers de Constructions d'Automobiles (Turcat, Mery & Co.).

THE Canadian Government Commissioner in Sydney, in a recent report, states that there is no demand for motor-carriages in Australia as yet, but there is sure to be within a short time. The manufacturer first in the field with an effective vehicle will have the best of the market.



## CORRESPONDENCE.



### SOME FAST TRAVELLING BY THE PENNINGTON TORPEDO.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some months ago my statements in regard to the speed of the Pennington car were ridiculed by several gentlemen. Since that time I have made several efforts with a view of getting the Pennington Torpedo, as it is commonly

favourable to me, as he had had some considerable experience upon this particular car. We duly arrived at Catford, and after one or two trial spins found that the torpedo could go, and was going at the rate of 36 miles per hour. We came to the conclusion that a higher gear could be used without affecting the speed of the engines. We therefore changed the gear, and with good results. We reeled off laps at the rate of from 39 to 40 miles per hour. In fact, one lap was done in the extraordinary time of 29½ secs., the track being three laps to the mile, this being record for any type of machine.

Thinking a few photographs taken at this high speed would be interesting, we engaged the services of Messrs. Curzon Robey & Co. to come down and take a few snapshots. The first trial was not a success. The exposure was timed to the 70th part of a second, and the result was not at all one which could be called a photographic success. The next day Messrs. Curzon Robey & Co. informed us that they would use other apparatus which was sure to prove a success, and which was capable of taking photographs at an exposure of 1000th part of a second. Arrangements were accordingly made for the following day, when success crowned the efforts of the photographer.



FIG. 1.

called, for a few trial spins upon one of the London tracks. Until lately my efforts in that respect were unsuccessful, but last week, after a little persuasion, Mr. Pennington kindly gave me permission to take the torpedo for a trial spin upon one of the tracks. I then looked about for a steersman, one

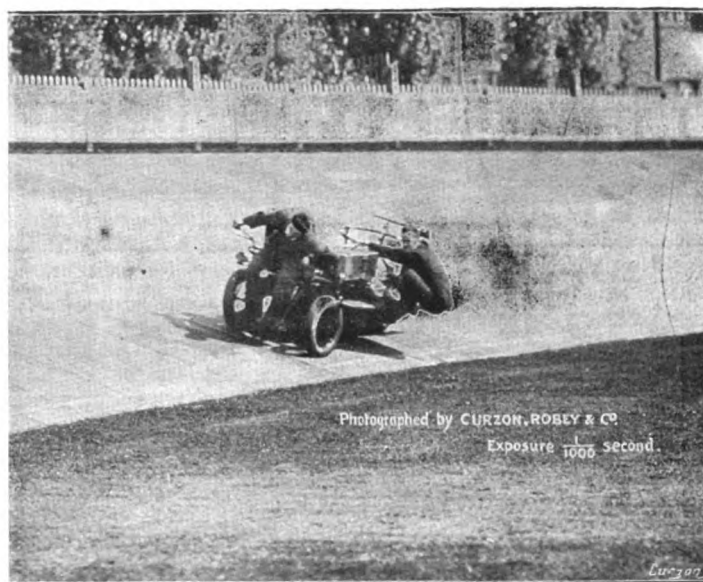


FIG. 3.

Photo No. 1 will give your readers some idea of the position adopted by the writer to avoid any wind-resistance and with a view of taking corners; here we are snapped just after our start, the pace being then about 28 miles per hour. No. 2 shows a picture taken broadside-on upon the banking, and one can judge the speed by carefully looking at the shape of the two wheels shown and by the clinging position of the writer, who, travelling at that enormous pace (we were now doing 40 miles per hour), was far from comfortable.

No. 3 shows the position when entering the straight; here the writer is seen clinging on to the friction clutch, which, owing to the immense strain upon the back wheel when turning a corner, has a tendency to slip out.

Perhaps a few details of the motor in question would be interesting. The motor itself is a double steel cylinder, with 4 in. bore by 10 in. throw, and geared direct to the back or driving wheel, there being two speeds actuated by two friction clutches. The machine has a long wheel base, as can be seen by photo No. 2. Electric ignition is used, and the petrol descends direct into the combustion chambers, doing away with a carburettor. In addition to the two gears the speed can naturally be regulated by the quantity of petrol allowed to enter the combustion chambers. The wheels are 24 in. by 4 in., fitted with Pennington tires, and it is astonishing

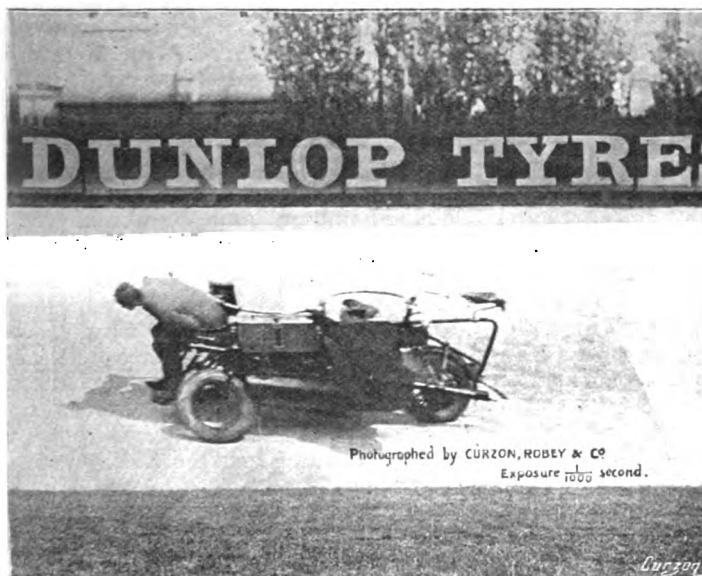


FIG. 2.

being necessary to drive and one to steer for the particularly fast work I intended doing. After a good deal of talking I managed to persuade one of Mr. Pennington's mechanics to accept the position of steersman. This was all the more



what they have stood. I may mention that the machine was built by Mr. Pennington at Coventry two and a half years ago, and without doubt holds the travelling record.

Yours faithfully,  
C. G. WRIDGWAY.  
Keppel Road, Chorlton-cum-Hardy,  
Manchester, August 2nd, 1899.

### A LADY ON MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In conversation with my lady friends I find that their interest in motor-car matters increases in proportion to the interest taken by royalty. Does this not also apply to the general public? Now, as this new industry is not a passing fad but something that will revolutionise our street traffic and means of cheap transport of produce from country to towns, it is worthy of all the support royalty can bestow upon it.

The firm that can induce our beloved Queen to take a ride on a motor-car will deserve well of the trade and give a fillip to nervous ladies who, when once having ridden on a car, will find there is no cause to be nervous. There are several causes for nervousness in horse-drawn vehicles that do not exist in motor-cars.

We ladies are not likely to overlook the economical side of motor-caring *versus* horse-keeping. I am thinking of the effect of motor-cars *versus* horses when the roads in winter are such that the poor horses can only with difficulty keep their footing. Under few conditions will the usefulness of cars be more apparent.

When will the London County Council adopt electrical fire engines instead of keeping a staff of horses standing at a ruinous expense at fire stations? Electrical stations would soon save their expense. Will one of the L.C.C. members state what is the annual cost of the horses' keep? This item of taxation might be saved, as the sale of the horses and purchase of electrical cars should nearly balance. I hope to see one of our enterprising manufacturers inviting the members of the County Council to a run to Brighton and back, and convert them wholesale; or perhaps one of the rich syndicates which hold such valuable patents will take the hint and show how patriotic they are.

Yours truly,  
MRS. SUBURBAN VILLA.  
July 31st, 1899.

### HORSE POWER OR COLT POWER.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Mr. Sangster's recent letter to the Press may mislead the general public and leave them to think that the Aster motor does not develop the  $2\frac{1}{2}$  h.p. advertised. I am able to state that the latest  $2\frac{1}{2}$ -h.p. motors are 72 mm. bore by 80 mm. stroke, and every motor has to pass what is known as the dynamo test, which is a more satisfactory method of ascertaining the horse power of small motors than taking indicator diagrams or brake readings. Therefore, any one purchasing an Aster motor can rely upon it developing  $2\frac{1}{2}$  h.p. before it is allowed to leave the works.

Lowestoft,  
August 1st, 1899.  
Yours truly,  
W. L. ADAMS.

### MOTOR-CARS IN THE NORTH.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice a paragraph in your Journal crediting the City Syndicate, Newcastle, with being the first to run a motor-car service in Newcastle, whereas the credit for such belongs to the Tyne Motor-Car Company, who were running a regular service prior to that or any of the other companies which have recently sprung up. This is a matter which there is no doubt about, and is easily proved.

It becomes monotonous to hear the claims of certain parties as being the pioneers. Mr. Blacklock and myself have done more to popularise the motor industry in the North than they

or indeed we might say anyone else. In fact, it is due to our efforts that we have been instrumental in "forcing the hands" of most of the companies in this district. "Honour to whom honour is due" and "Fair play is a jewel" are mottoes which might be brought forward with advantage to the claims of certain parties.

Trusting you will give this the same prominence as the said paragraph,  
Sunderland,  
July 31st, 1899.  
Yours faithfully,  
FRED TURVEY.

A MOTOR-CAR race is being organized by the Swiss Automobile Club; it is to be run off early in September in the neighbourhood of Lucerne.

M. RENE DE KNYFF has sent a cordial letter of thanks to the Automobile Club of Great Britain for their recent congratulatory telegram in connection with the result of the Tour de France.

THE first motor-car that ever visited Thurso was seen in the streets of that town on Monday last, and created great interest. It belongs to Major Howie, of Bighouse, Sutherlandshire.

IN connection with the automobile exhibition which is to be held in Berlin next month preparations are, it is reported, now being made for a race to Dresden for heavy cars and to Eberswalde for motor-cycles.

A MOVEMENT is on foot to form an Automobile Club in Philadelphia. One of the first duties of the club will be to test the validity of the rule of the Park Commissioners excluding motor-carriages from the Fairmount Park.

IN connection with the coming fêtes at Lons-le-Saulnier, France, arrangements are in hand for the running off of an automobile race between that town and Lyons and back on the 20th inst. The distance is about 144 miles.

AUTOMOBILISTS who purpose visiting Henley should note that at the last meeting of the Town Council a resolution was adopted to the effect that the Town Clerk should call the attention of the police authorities to the pace at which motor-cars were allowed to travel in the streets.

MESSRS. HEWETSONS, 7 Dean Street, Oxford Street, W., announce that in future all their Benz Ideal cars will be fitted with Connolly tires on the front wheels as well as the rear wheels. The front tires will be provided with a special flat tread in order to avoid getting caught in tram lines.

IN connection with the Midland Cycle and Motor-Car Exhibition which is to be held at Bingley Hall, Birmingham, at the end of January, 1900, it is proposed to organize a series of motor-car and cycle trials on the roads between Birmingham and Coventry, Wolverhampton and Redditch, not merely for speed purpose but for weight-carrying, hill-climbing and general utility.

AT the invitation of Sir William H. Crundall, J.P., the Mayor of Dover, the Committee of the Automobile Club have undertaken to render every possible assistance in reference to the automobile exhibition which it is proposed to organize in connection with the Congress of the British Association in the middle of September. The Secretary of the Club has, *ex officio*, been appointed to the Committee of the Exhibition.

A LARGE contract for motor-carriages is reported as having been placed by the Electric Vehicle Co., of New York. The contract is for no less than 4,200 vehicles, involving an expenditure of 8,000,000 dols., and it will include about 4,000 hansoms, broughams, and other passenger carriages, and 200 delivery wagons. The batteries will be made by the Columbia Automobile Co. (which has exclusive rights from the Electric Storage Battery Co. for batteries for vehicles); the motors by the Siemens & Halske Electric Co., of Chicago; the "bodies" by the Studebaker Carriage Co., of South Bend, Ind.; and the other work by the Columbia and Electric Vehicle Co.

## MOTOR-CARS ON THE CONTINENT.

### Motor-Car Construction in Italy.

QUITE a number of motor-car companies have lately sprung into existence. The latest is La Fabbrica Italiani di Automobili, which, according to a correspondent, has just been registered in Turin with a capital of £32,000. It is stated that large works for the construction of motor-cars are to be established by the company in Turin. No details are available as to the type of car to be turned out or as to the motive power, but it may be mentioned that the Società Elettrotecnica Italiana is interested in the new undertaking.

### The Paris 1900 Exhibition and Motor-Car Trials.

THE Committee of the Automobile Section of the Paris 1900 Exhibition has, we learn, decided to organize a series of motor-car trials during the course of the show. It is expected that the programme will be the same as that carried out by the French Automobile Club last year, viz., a speed trial, a motor-car competition, and a *poide lourds* or heavy motor-car competition. It is probable, too, that the organization of the trials will be entrusted to the Committee of the Automobile Club de France.

### More Petroleum-Spirit Motors.

IT is announced that Messrs. E. Giraud & Co., engineers, of Doullaincourt (Haute-Marne), France, have decided to take up the construction of petroleum and spirit motors for motor-cars and that they are enlarging their works for that purpose.

### Motors for Electrical Vehicles.

AS showing that the large German electrical engineering concerns have begun to recognise the possibilities of the automobile movement, we may mention that Messrs. Schuckert & Co. of Nurembourg are now manufacturing electro-motors for electrically-propelled vehicles. One of their first productions in this direction is a 2-h.p. motor intended for a normal speed of 1,500 revolutions per minute, while its weight is stated to be 107 lb.

### A New Bollée Voiturette.

LA SOCIÉTÉ DES VOITURETTES AUTOMOBILES has just introduced a new type of Bollée voiturette—viz., a vehicle fitted with two motors in place of the one hitherto provided. The two engines are located one on each side of the rear wheel, and are each provided with their own carburettor, exhaust-box, etc. The petrol tank for the burners is located as usual behind the rear seat, while the main supply tank in the new vehicle is built on the mud-guard of the rear wheel. The fly-wheel and the governor are located centrally, under the seat. No change has been made in the transmission gear, but two brake shoes are now provided in place of the one hitherto relied upon.

### Antwerp Taxes Motor-Vehicles.

THE local authorities of Antwerp have just decided to impose an annual tax on motor-cycles and motor-vehicles as from January 1st next. Motor-cycles will be taxed 20 fr. for single-seated machines, and 30 fr. in the case of machines having seats for two or more persons. The tax for single-seated voiturettes has been fixed at 30 fr., while for motor-cars having accommodation for two or more passengers an annual tax of 40 fr. will have to be paid.

### Motor-Vehicles at Ghent.

THE Provincial Exhibition which opens at Ghent, Belgium, to-morrow, the 5th inst., comprises an automobile section. We understand that a track has also been provided on which demonstrations of motor-vehicles in operation will be given. The show remains open until the 20th inst.

### A Paris-Nice Record Race.

OUR French contemporary, *La France Automobile*, is offering a gold medal for a record race to be run off early next year between Paris and Nice. The course will extend over two days, the first day's journey being from Paris to Lyons, and the second from Lyons to Nice.

### A New French Electrical Vehicle Co.

L'ELECTROMOTION is the title of a new company which has just been formed at Levallois-Perret (Quai Michelet), France, with a capital of £20,000, to construct electrical vehicles, establish charging stations, etc. The list of directors of the new concern contains the names of M. Hart O. Berg, M. A., Lefevre, and M. W. de Blest-Gana.

### A Paris-Lille Race.

THE authorities of the Lille Velodrome are busily engaged on the organization of an automobile race between Paris and Lille, to be run off on the 20th inst. The course will be divided into two sections: (1) Motor-cycles of a maximum weight of 440 lb., and (2) motor-cars. Five money prizes are being offered in each section.

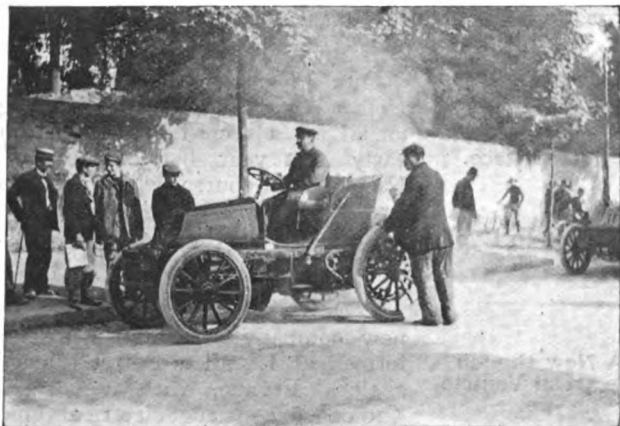
### Le Criterium des Electriques.

THIS event, promoted by *Le Sport Universel Illustré*, took place on Saturday last over a course of about 50 kilometres. The start was effected at Porte Maillot, Paris, at 9 a.m., the competitors passing through the Avenue de Neuilly, Bezons, Houilles, Maisons Lafitte, La Croix de Noailles, Poissy, Saint Germain, Vésinet, Chatou, Rueil, Suresnes and Saint Cloud, finishing at Les Chalets du Cycle in the Bois de Boulogne. There were three categories:—Vehicles of 1,200 kilos. and upwards, vehicles of 800 to 1,200 kilos., and vehicles weighing less than 800 kilos. All the twelve competitors entered for the event started. They were:—H. O. Berg (Columbia) 670 kilos., Phillippart (Columbia) 995 kilos., Sheldon (Columbia) 1,480 kilos., Herriz (Columbia) 1,080 kilos., Delory (Columbia) 1,140 kilos., Beauvalet (Columbia) 1,125 kilos., Bouquet (B.G.S.) 970 kilos., Garcin (B.G.S.) 990 kilos., Cuvelier (B.G.S.) 1,180 kilos., Patin (Patin & Réquillard) 1,260 kilos., Créanche (Créanche) 670 kilos., Mildé (Mildé) 2,200 kilos. The winners of the respective classes proved to be Messrs. Sheldon, Phillippart and Berg, while the special prize for resistance was won by Cuvelier (B.G.S.). The fastest time was accomplished by Phillippart (Columbia) who covered the route at an average speed of 39 kilometres per hour. After the race all the competitors and their friends partook of a sumptuous luncheon at Les Chalets du Cycle.

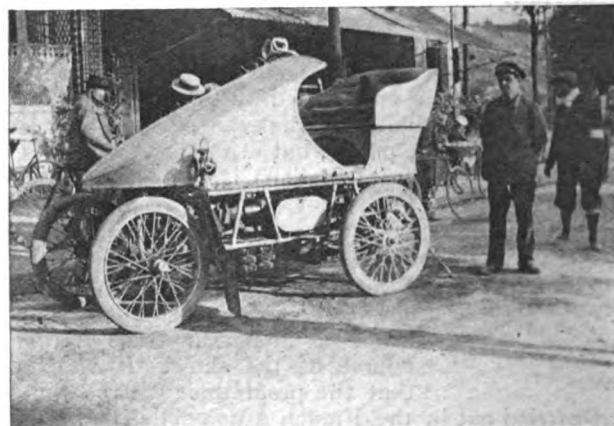
### The Paris-Ostend Race.

IN the course of a recent conversation with M. Jenatzy, the famous racer stated that it was his intention to compete in this race with "La Jamais Contente," and that he had made the necessary arrangements for recharging at three points *en route*.

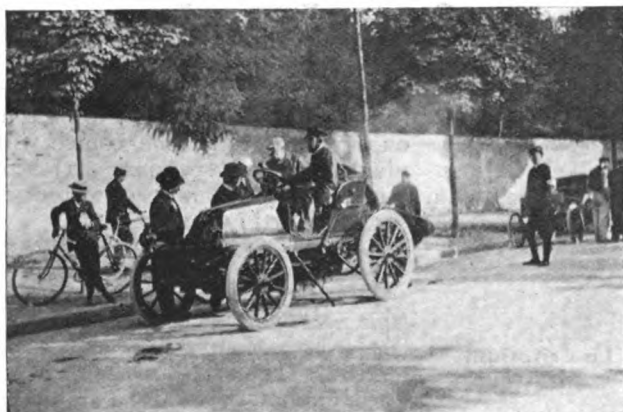
# The Paris—St. Malo Race.



M. ANTONY'S 16-H.P. MORS CAR.



THE VALLÉE 16-H.P. RACING CAR.



M. JENATZY'S 16-H.P. MORS CAR.



M. DE KNYFF ARRIVES TO WITNESS START.

(From Our Own Correspondent.)

THE "Tour de France" race over, the interest of the French automobile world has this week been centred on the Paris-St. Malo race, which took place on Sunday last. Many of those whose success in the "Tour de France" was doubtful were glad to find in the Paris-St. Malo race an opportunity to re-establish their credit.

It is to be noticed that none of the well-known Panhard-Levassor champions started in this race, so that it was practically a run-over for the new Mors 16-h.p. cars, which found no serious vehicle to check them. We must nevertheless mention the appearance of a new Vallée car, very original in its design, which was handled by a well-known English "chauffeur," who entered under the suggestive name of "Flash." It will be remembered that the Vallée racer also started in the "Tour de France," but met with a series of accidents which prevented it completing the journey. The bad luck was so great that punctures occurred even before the start, so that "Flash" only left long after the others. Although the result of the Paris-St. Malo race has not been very brilliant for the Vallée car we must nevertheless congratulate one of the first English sportsmen to compete in a French race.

The start of the race took place on Sunday morning last, the voiturettes leaving at 5 a.m., the motor-cycles at 6 a.m., and the cars at 7 a.m., the number of starters being respectively ten, fifty-one, and thirteen. The following are the times of those competitors who finished the race:—

## VOITURETTES.

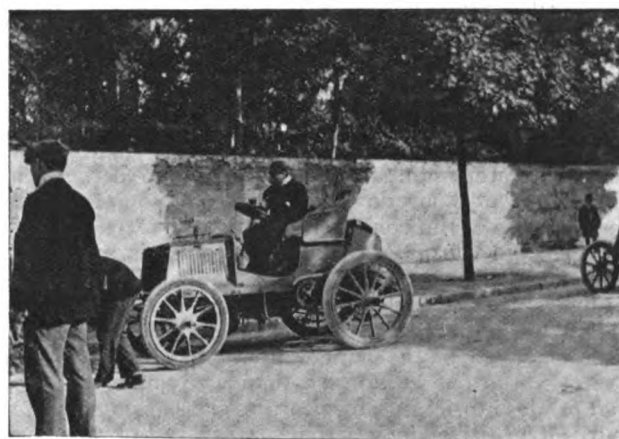
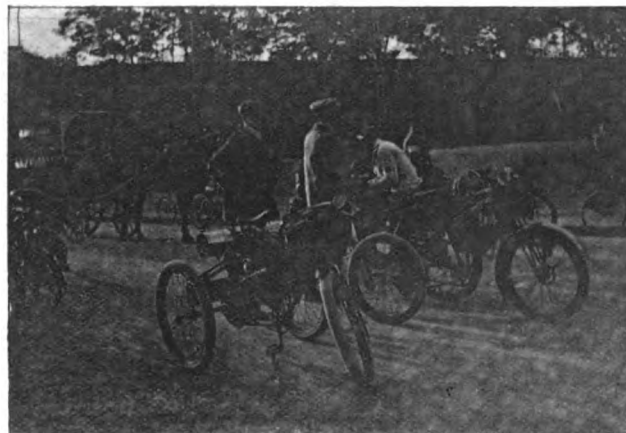
1. Rivierre, 10 h. 44 m. 30 s.
2. Doriot, 12 h. 17 m.
3. Dilligeon, 13 h. 44 m.

## MOTOR-CYCLES.

1. Renaux, 7 h. 11 m.
2. Corre, 8 h.
3. Tart, 8 h. 4 m.
4. Rodriguez, 8 h. 4 m. 30 s.
5. Gleize, 8 h. 5 m. 45 s.
6. Rigal, 8 h. 18 m.
7. De Méaulne, 8 h. 28 m.
8. Bar, 8 h. 29 m.
9. Péron, 8 h. 42 m.
10. Delisle, 9 h.
11. Cormier, 9 h. 56 m.
12. Griet, 9 h. 56 m.
13. Zerfuelli, 10 h. 30 m.
14. Bistouriste, 11 h. 16 m.
15. Caillou, 13 h. 3 m.
16. Rendu, 13 h. 32 m.

## CARS.

1. Antony, 7 h. 32 m.
2. E. Levegh, 7 h. 40 m. 30 s.
3. Henon, 8 h. 32 m.
4. E. Heath, 8 h. 35 m.
5. E. Flash, 8 h. 51 m.
6. De Champobert, 9 h. 56 m.
7. E. Jenatzy, 10 h. 6 m. 30 s.
8. E. Huguet, 10 h. 11 m. 1 s.
9. Hachette, 10 h. 38 m.
10. Ravel, 11 h. 28 m.
11. De Lucenski, 11 h. 51 m.



SNAP-SHOTS TAKEN AT STARTING POINT OF PARIS-ST. MALO RACE.

As already stated, the Paris-St. Malo race was a run-over for the Mors cars, Antony, one of the most skilful cycle racers in his time, easily winning the first prize. Apart from the cars, the real winner of the race, who covered the distance in twenty minutes less than any car, was M. Renaux, who, on a tricycle of his own construction, covered the distance of 372 kil. in 7 h. 11 m.—that is to say, at an average speed of over 52 kil. per hour (over 32 miles). This is a very remarkable performance, which does the greatest credit to the “chauffeur” Renaux, and to the tricycle of which he is the builder, and which is fitted with a new horizontal motor. It must be borne in mind that a Sunday is perhaps the worst day of the week that could be chosen for such a race, for on that day both towns and villages are filled with people, not to speak of the numerous cyclists who are met on the road. It is marvellous that no accident happened, and this shows once more that motor-cars are not so very dangerous, even at a speed of thirty miles per hour, as many like to imagine. The voiturettes did not make a very brilliant showing considering that out of ten which left the starting point only three reached St. Malo. The first prize in this class has been won by Rivierre on a Phébus tri-voiturette fitted with a  $2\frac{1}{2}$ -h.p. motor.



THE Ardwick Engineering Company, Manchester, are introducing a new design in quadruple-expansion steam engines for marine, motor-car, and other requirements. The engine, which is made in sizes of from 3 to 25 h.p., has balanced cranks, and the feed-circulating and air pumps are worked direct from crossheads. It is described as being of very compact design, and as light as possible consistent with strength.

THE Auto Stage Co. has been organized at Chicago, Ill., with a capital of £2,000.

LA COMPAGNIE GÉNÉRALE DES AUTOMOBILES LIVREURS, of 114 Rue de Provence, Paris, is increasing its capital from £8,000 to £20,000.

THE Standard Motor Carriage Company is the title of a new concern which has just been formed at Portland, Me., to manufacture motor-carriages. The capital is £100,000.

MESSRS. C. ROUXEL & Co. is the name of a new firm which has just been formed at Boulogne (50 Rue du Château), with a capital of £1,200, to manufacture motor-vehicles.

WE understand that the Meyrick Cycle Company, of 47 Holdenhurst Road, Bournemouth, is now catering to the wants of automobilists by carrying a stock of petrol and other motor-car accessories. The Company is also, we learn, in a position to undertake small repairs to motor-vehicles.

THE Columbia and Electric Vehicle Co., of Hartford, Conn., U.S.A., is stated to have acquired the plant of the New Haven Carriage Co., which will be used for the manufacture of automobile “bodies.” The purchase price is said to have been £40,000.

THE local authorities of Bar Harbour, Maine, have adopted an ordinance confining automobiles to the side streets and dark alleys of that resort. At the last moment it was discovered that the law also affected the steam road-roller owned by the town, and an exempting clause was inserted!

THE recent race between Mayence and Coblenz and back, organized by the West German Automobile Club, proved very successful. In the carriage section the winner was Herr De Dietrich, his time being 4 h. 39 m. 15 s. The first motor-tricycle home was that of Herr Kirchheim, who occupied 5 h. 12 m. 30 s. for the journey.

## MOTOR-CYCLES.

|                  |         | First stage,<br>Paris to<br>Nancy,<br>290 kils. | Second stage,<br>Nancy to<br>Aix-les-Bains,<br>366 kils. | Third stage,<br>Aix-les-Bains<br>to Vichy,<br>382 kils. | Fourth stage,<br>Vichy to<br>Perigueux,<br>299 kils. | Fifth stage,<br>Perigueux to<br>Nantes,<br>342 kils. | Sixth stage,<br>Nantes to<br>Cabourg,<br>348 kils. | Seventh stage,<br>Cabourg to<br>Paris,<br>192 kils. | TOTAL.<br>2,219 kils. |
|------------------|---------|---|--|---|--|--|--|---|-----------------------|
|                  |         | a. m. s.  | h. m. s.   | h. m. s.  | a. m. s.   | h. m. s.   | h. m. s.   | h. m. s.  | h. m. s.              |
| Teste ..         | De Dion | 6 29 15½  | 8 1 34   | 10 0 50   | 7 11 34  | 7 26 33½   | 8 3 1½   | 3 45 21½  | 50 58 9½              |
| Tart ..          | do.     | 6 7 3½  | 8 24 42  | 8 54 37½  | 7 28 8½  | 8 6 28½  | 9 2 44   | 3 29 13½  | 51 32 57              |
| G. de M'aulne    | do.     | 6 28 52   | 8 9 10   | 9 34 51   | 8 15 24½   | 8 22 26  | 8 31 2½  | 4 16 27   | 53 38 41              |
| Degrais ..       | do.     | 6 43 54½  | 8 53 30  | 10 27 21½   | 8 34 31½   | 8 11 45  | 8 11 11½   | 4 38 20   | 55 40 33½             |
| Bardin ..        | do.     | 6 33 30   | 8 31 58½   | 9 49 38½  | 7 35 47½   | 7 45 10  | 11 5 14½   | 4 44 47   | 56 7 5½               |
| Béconna's ..     | Aster   | 6 50 53   | 10 26 30   | 9 5 56½   | 9 10 32½   | 7 54 32  | 9 5 37½  | 3 56 33½  | 56 30 34½             |
| Gleize ..        | De Dion | 5 35 30   | 7 42 9½  | 13 13 41  | 9 14 48  | 10 57 29   | 7 36 44  | 4 28 53   | 58 49 14½             |
| Cormier ..       | do.     | 7 45 43   | 12 11 22½  | 13 51 30  | 9 51 21½   | 12 30 30   | 11 3 1½  | 4 17 7  | 71 30 35              |
| Rivierre ..      | do.     | 10 33 42  | 10 52 22   | 14 53 30  | 11 28 0  | 10 49 40   |  |   | 93 41 41              |
| 35 h. 2 m. 30 s. |         |   |  |   |  |  |  |   |                       |

## VOITURETTES.

|              |           |          |           |          |           |          |         |          |           |
|--------------|-----------|----------|-----------|----------|-----------|----------|---------|----------|-----------|
| Gabriel ..   | Deauville | 6 59 22½ | 11 16 30  | 10 5 50  | 8 33 5    | 12 20 24 | 13 4 0  | 4 57 24  | 67 16 35½ |
| Théry ..     | do.       | 7 37 9   | 11 22 47½ | 15 19 30 | 10 47 15½ | 13 7 31  | 11 45 0 | 5 44 10½ | 75 43 22½ |
| Aubin-Ulmann | do.       | 10 9 4   | 16 46 0   | 23 24 0  | 23 21 0   | 22 0 0   | 22 0 0  | 7 45 0   | 125 25 4  |

## LE TOUR DE FRANCE.

IN our last issue we published a table showing the times of the different contestants in the motor-carriage class in the recent Tour de France race. We are now able to give the times of the competitors in the other two classes—motor-cycles and voiturettes—who succeeded in making the whole journey. In the first-named category there were twenty-five starters, while only nine finished. Of the four voiturettes which started only three completed the journey. The average speed of the winner in the motor-tricycle class (M. Teste) works out at no less than 27.85 miles per hour, and that of M. Gabriel in the voiturette class at 20.8 miles per hour. The prizes aggregated £1,156, out of which sum a prize of £240 is awarded to M. R. de Knyff, £100 to M. Teste, and £100 to M. Gabriel.

## MIDLAND MOTOR NOTES.

By "VERAX."

## A Volunteers' Motor-Car.

ON Monday last the prize shooting of the Warwickshire Volunteers took place in the famous Stoneleigh Deer Park, the residence of Lord Leigh, who is always most generous in placing his parks at the disposal of the public. For many years the Volunteers have looked upon this as their camping ground, and next Saturday is the beginning of their camp week. Those members of the Automobile Club who took part in the last Whitsuntide tour in Warwickshire will remember the drive they enjoyed on Whit-Monday through these lovely parks. They are about six miles from Coventry, and on the occasion of this shooting match Lieutenants A. and W. Du Cros, accompanied by Captain B. Luke, repaired thither in the splendid Peugeot car owned by them, and Captain Luke succeeded in winning one of the prizes, so that the car could not, as some antagonists would have it, have shaken up his nerves very much. Rather, the reverse.

## The Hot Weather and Motoring.

AGAIN the weather has been very hot lately, and, as those who have had the opportunity to experience the lovely cooling effect of a motor-car drive must confess, there is nothing to equal it as a stimulant when under other conditions it is almost too hot to breathe. It was not far from the park—namely, at Stoneleigh village—that the first motor-carriage seen at the head of foxhounds appeared.

This car was a Benz one, and contained Mr. and Mrs. Valentine. Although there were over four hundred horses and carriages—not to speak of hunters—at the meet, not a single horse shied at the motor, which came in for a great deal of admiration despite the adverse conditions.

## The Bucks Otter Hounds.

THERE have been several meets lately of the hounds in this district, and motor-cars have been requisitioned to convey members to the meets. Shipston was one of the starting places, a distance of 32½ miles from Coventry, the time of the meet being fixed at 6 a.m. One of the Humber "quads" was driven from Coventry, leaving at 3 a.m. and arriving at Shipston at 4.45 a.m.—a very good performance indeed. The Raglan car went down the previous evening with Mr. C. Junall and Dr. Smith and driver. The speed was not so high as the former light car, but the performance was a very good one, and no accident was reported on either car. The neighbourhood of Shipston is very hilly, there being some gradients of about 1 in 6 to be encountered, and some of them nearly a mile in length.

LORD ARCHIBALD DOUGLAS is the latest convert to automobilism, having just purchased an English-built Hurler from the London Autocar Co., of Gray's Inn Road, London.

THE Riker Electric Vehicle Co. has started up their new factory at Elizabethport, N.J., and by October 1st it expects to be turning out five vehicles a day, including all kinds, from the light runabout to the heavy truck.

WE understand that a new type of petroleum-spirit motor is about to be put on the market by Messrs. Hurst & Lloyd, engineers, 257 High Holborn, London, W.C. For the moment we are only able to state that the new motor is to be made in sizes from 2 h.p. up to 6 h.p., the latter having double cylinders. We are promised further particulars of the new engine, which will be published in due course.

THE Riker Electric Vehicle Company, America, have just introduced a new type of Riker delivery wagon, having wooden wheels. The wheel base is 68 in. and the tread 59 in. The solid tires are 2½ in. by 38 in. diameter front and 42 in. rear. The weight of the vehicle is 3,600 lb. and its carrying capacity 1,000 lb., in addition to the operator and delivery man. Two motors of 2 k.w. each are used. The controller gives three speeds ahead and two reverse, the maximum being nine miles per hour. The total mileage on level macadam roads on each charge is 30. The usual combination voltmeter and ammeter and electric side-lights are employed.



## ON THE ROAD.



### A COMMERCIAL TRAVELLER'S JOURNEY OF 4,750 MILES ON A MOTOR-TRICYCLE.

[SPECIAL INTERVIEW.]

**A**MONG the many changes that the nineteenth century has witnessed none have exercised so great an influence as the difference in the mode of travel. In the old days the "commercial" carried most of his goods as well as his samples on his pack-horse, and trudged from town to town without thinking of trains, time-tables and other complexities of the railroad. Having finished his calls in a town, he would proceed in his leisurely fashion without ceremony or bustle. The railroad changed all that and quickened the wits of everybody, so that for many years now commercial travelling has been done at high speed, although, as "the train waits for no man," long and tedious are the delays often caused in rather out-of-the-way places by waiting for trains, especially if some talkative customer has led to the sight of the rear end of the train just gliding out of the station. The success of the automobile promises a return to the old highways by the new method of locomotion, with, of course, a higher rate of speed than was possible on the packhorse or its immediate successor—the gig.



MR. ARTHUR GOODWIN "ON THE ROAD."

Photo by

Messrs. Reinhold Thiele & Co., London, W.C

Mr. Arthur Goodwin has just demonstrated the possibility of such a notion, and must be hailed as a pioneer so far as the use of the motor in commercial travelling is concerned. In the interests of the Ormonde Cycle Company he has just completed 4,750 miles during the present year, the whole of the journey having been accomplished on a motor-tricycle made by the Motor Manufacturing Company, Ltd.

The test has been a severe one for the motor-tricycle, and that it has been successful is proved by the absence of mishaps and the appearance of Mr. Goodwin after motoring in the snowstorms of last March and the heat waves so recently experienced. The present year has enabled a test to be made that must be regarded as thoroughly establishing the reliability of a British-made motor-tricycle both for winter and summer use. Certainly Mr. Goodwin has concluded a record "commercial efficiency" test in splendid style, and is quite enthusiastic. We were chatting the other day over the

trip, and I asked him to briefly tell the impressions he had gained.

"Well," said he, "in the first place I thoroughly enjoy the motor-tricycle as a means of getting about. When in town I come up to the city from Hanwell, where I reside, on my motor-tricycle, and the ride always sets me up for the day. And it is just the same when away. There is a freshening and exhilarating effect in motoring quite different to that felt after being cooped up in stuffy trains with five a side and the thermometer showing 92 degrees in the shade. That may be a sentimental reason; but the practical ones are those that are most valuable, and they are on the ground of general convenience and saving of time. For instance, I did a southern journey that, by ordinary travel, would have taken two months or more, in seven weeks; and I suppose the actual saving in time would be quite a day a week."

"But I suppose the general convenience is after all the great thing?"

"You would think so if you had seen me calling on clients in half a dozen towns a day, or seen a commercial friend wending his way to a station to wait a couple of hours for a train to a town near by while I scuttled along and finished my call before his train arrived. Then, suppose you know a train is due in half an hour, the tendency is to hurry your customer and very often spoil your business, whereas with my motor-tricycle I am able to complete business in a proper way without confusion and fuss."

"And where, Mr. Goodwin, did you motor your way?"

"Well, my first journey was eastward, through Essex, Suffolk, Cambridge, Lincolnshire, and Hertford, back again to London, encountering very few hills, and in the Fen district the flatness became almost monotonous. My motor-tricycle seemed quite a novelty in the Eastern Counties, where motor-cars are becoming familiar, thanks to the enterprising service of Mr. Frank Morriss (the local agent of the Motor Manufacturing Company) at King's Lynn, the service at Clacton, and the many private vehicles now owned by the gentry round about; but the motor-tricycle seemed new, from the observations hurled by rustic watchfuls as I went along and the comments I heard in towns. In most places my tricycle was an introduction to customers, and in the commercial rooms of the hotels I was regarded at first with curiosity, and later with respect—both as to my means of locomotion and foresight in adapting it."

"Did you find any real interest in the new locomotion from your brethren on the road," I queried, "for such a journey should produce many imitators?"

"Yes, wherever I went questions as to cost, maintenance, convenience, reliability, etc., had to be answered, and I expect that on my next journey that way I shall encounter many motorists, for the roads were capital, and no difficulty presented itself as to housing my machine. That was generally done at the hotel, and I could always get it cleaned without difficulty."

"What of the petrol?"

"No trouble at all. Cycle agents and others are recognizing the commercial possibilities of the new movement, and even where I could not get it by purchase I was generally able to dig out some motorist willing to give me from his store and send me on my way with a replenished stock. Even in the distant outlandish and secluded little places in Cornwall I never failed on that score. Of course, I carried a good supply, but was careful never to overburden myself. I found that  $1\frac{1}{2}$  gallons of petrol and 3 pints of lubricating oil were sufficient reserve to carry me on any journey, and should never advise travellers to encumber themselves with more. With that quantity they should never be 'hung up.'"

Recognising the satisfactory behaviour of the motor-tricycle, I wanted some incidents of the journey. Unfortunately, from the journalist's point of view, these were few—no pitching into ditches by moonlight, no chasings by the county constabulary, no appearances before magistrates and huntsmen, no sticking on hills, and, as Chevalier would

say, "no nuffink." Mr. Goodwin's conduct as a motorist seems to have been as exemplary as the conduct of his machine. During the whole of his ride of over 4,700 miles he was never stopped by the police, never cautioned, never had so much as a warning finger held up to arrest the even tenour of his way. In fact, the only noteworthy incident in connection with police or other authorities which has ever happened to Mr. Goodwin occurred in the City of London, where he received the compliments of a Police Inspector on his skilful manipulation of the machine, and so avoiding injury to a foolhardy pedestrian who ran into harm's way.

"The weather," said Mr. Goodwin, "gave me the most adventure. I went through all the snowstorms in March, and the toughest and coolest run was from Thetford to Bury St. Edmunds. I had the snow pelting my face all the way, and when I arrived at the hotel I might have posed as one of Nansen's men, for the snow had caked on my clothes to a depth of two or three inches. I could not be brushed down in the ordinary way, and Mr. Boots, with the aid of a scraper, was able to chip bits off until my clothes were sufficiently freed from ice to allow me to venture upon a carpeted floor."

"Once," continued the interviewee, "I was delayed by the snow, but only once. As a rule, I ploughed my way through the snowdrifts that accumulated in some of the sequestered lanes with as much success as Makaroff's 'Ermack' goes through the ice of the Baltic. It was a pleasurable experience, although having a tendency to vainglory, to see a horse-drawn vehicle labouring through the snow, whilst my machine overcame all difficulties. Perhaps the worst storm I encountered was when going from Cambridge to Bury St. Edmunds. Several confreres at the University town urged me to wait till the storm had abated, but I meant to push on to test the capabilities of the motor and to see how it would behave. So on we went—my motor and I—right through Newmarket, where the few stable lads hanging about regarded us with almost scornful disdain. Three or four miles from the famous Heath the first stop took place. Something had gone wrong with the motor, and an examination was necessary. Everything seemed all right, and the only solution I could find was that the snow had caked in the various joints, and the moisture had got to the wires and established short circuiting. But after clearing away the unfortunate accumulation of ice, I resumed my journey, going along as comfortably as before, after having discovered a cobbler's shop, and there obtained some wax with which I covered the whole of the exposed portion of the connections thoroughly. No further trouble arose from that cause, although I met with many more snowstorms and encountered many heavy rains."

The second long journey indulged in by Mr. Goodwin after many "home-in-a-day" runs from London to all the towns in the home district, was through Oxford, Buckinghamshire, Warwick, Gloucester, and North Wilts, with plenty of stiff hills to negotiate. Only on one or two occasions were gradients found that necessitated help being given the machine by the pedals. The longest journey, and one which gave the best variety so far as roads were concerned, was a run from London right round the coast from Kent to Cornwall, and then along the shores of North Devon to Bristol—back again *via* Bath and Devizes. This was during the recent hot weather, and it must have proved exhilarating mounting Shooter's Hill, Boughton Hill, Chatham Hill, and the other elevations met with.

"I got to Dover," said Mr. Goodwin, in continuation of his narrative, "on an auspicious day—the inaugural trip of a service of motor 'buses between Dover and Kearsney—and enjoyed a champagne supper at the expense of a sceptic who believed not in the ability of my motor-tricycle to mount Castle Hill. We wagered—I do not know whether the spot was a 'place' within the meaning of the Act; and I toiled up that hill, where motorist had never been before. It was steep, and the way back would have been sharp and short. Towards the top I had to pedal for that champagne supper

for all I was worth. The sentry was quite as surprised as my friends—and but for my recognised English might have called the guard, fearful lest I might have been a 'dare devil Frenchman.' This, at least, says something for the hill-climbing capabilities of the machines made by the Motor Manufacturing Company."

Motorists to some of the southern seaside resorts have complained of tolls. Mr. Goodwin is strong on that point—and on signposts.

"Across Romney Marsh," he said, "the signposts might have been erected in the darkness of a December evening. They are as confusing as the Maze at the Crystal Palace, and thanks to following their instructions I lost my way. Travellers in this district should do as I had to ultimately, and follow their instinct, leaving signposts to the native. But worse than the bothering signposts are the iniquitous tolls which crop up in the most unexpected places and rise to most unjustifiable heights. At Rye I was charged 1s. 3d.; at Littlehampton the toll for the motor carried across a floating bridge was 1s. 3d., and over Bursledon Bridge between Portsmouth and Southampton it was 1s. 3d. I have since ascertained that these charges were 3d. and 6d. above the proper rates, so would sound a note of warning to others to be careful that they are not overcharged."

"I suppose these tolls were really more than the cost of getting your motor-tricycle from Portsmouth to the Island?"

"Yes, considerably. By the way, I may claim to have been one of the first tricyclists to motor over the Isle of Wight, and a most enjoyable run it was, although the roads were rather loose in some places and very loose in many more. Some of the hills, too, required careful negotiation. From Ryde I went to Ventnor, and then, *via* Sandown, Yarmouth and Newport, to Cowes, the little commercial centre of the Island, which preserves its beauty very well, despite the trippers and holiday-makers it has had to entertain for many years past."

Business, according to Mr. Goodwin, had been good all along the coast, and the fact that he was successfully manipulating a motor served to draw attention to its merits from many prominent folks, both in the cycle trade and among the horse-owning gentry. An interesting instance of this occurred at Arundel.

"All who know Arundel," continued Mr. Goodwin, "appreciate the steep hill which rises from the centre of the town. I managed to mount this without difficulty, and on turning to my right at the top found myself in the grounds of the Duke of Norfolk. Several masons were at work making additions to the castle, and at a little distance were two or three gentlemen evidently interested in the operations. As I entered the grounds they came near, and closely examined my machine. I was of quite secondary interest in view of the motor-tricycle, whose capacity, work, cost, and other incidentals had to be fully elucidated. Evidently something more than interest was aroused, and I shortly learned that one of my audience was the Duke of Norfolk, whose recognition of the motor as a means of locomotion has been seen in the Postal Service."

Surely there should be some fine opening for motor-car services along the south coast, and for the summer season of 1900 Mr. Goodwin has some suggestions based on his personal observations of the visitors he met, the localities he journeyed through, and the roads over which he rode so easily. Of course, there were several towns where these are already doing good business, and, besides the Herne Bay to Canterbury service, many towns have lately granted licences. Folkestone to Sandgate ought to prove a profitable course for such a service, while from Southampton to Winchester is another.

"But what is really wanted is something apart from the ordinary running to and fro," says our 'motoring commercial,' "and I would suggest that, with Southampton as a centre, trips might be made into the New Forest. Looking further west, a motor-car service about Barnstaple, Bideford and Clovelly ought to pay, while between Ilfracombe,

Lynton and Lynmouth is a splendid opportunity. Inland many chances for good services are presented, and the Great Western Railway might materially increase the popularity of their day trips into Shakespeare's country by running a motor-car service in connection therewith, enabling tourists to see all the haunts of the great poet round about without fatigue and loss of time. Many of these services, of course, would be for the summer only; but that hardly detracts from the desirability of their establishment, for in England we have to 'make hay while the sun shines,' and the sun has been shining a long while this year."

But after all Mr. Goodwin's journey was for purposes of business, and going along to Bournemouth, and from thence *via* Dorchester, Weymouth, Dorchester, Sherborne, Yeovil, Crewkerne, Chard, Axminster, Honiton, Exeter, Exmouth, Teignmouth, Newton Abbott, Torquay, Totnes, Plymouth, Devonport, Saltash, Liskeard, St. Austell, Truro, Falmouth, Helston, Penzance, Hull, Redruth, Bodmin, Launceston, Clovelly, Bideford, Barnstaple, Ilfracombe, Lynton, Lynmouth, Minehead, Watchet, Porlock, Bridgwater, Weston-super-Mare to Bristol. He found many loose and dusty roads in Devon and Cornwall. Along the route already indicated, he gave another demonstration of the value of his motor-tricycle, and although on one day the electric sparking beat him for half an hour owing to a break in the insulation of the wires for which he could not account, the journey was eminently agreeable and no other difficulties were encountered. Many cycle firms visited by Mr. Goodwin are so satisfied with the prospect of the demand for motor-tricycles increasing during the coming year that they have decided to take up the sale of these machines, and will doubtless look for custom among commercial travellers, while the Ormonde Cycle Co., will shortly enter upon the manufacture of motor-tricycles. Throughout the 4,750 miles he has gone this year for business purposes Mr. Goodwin has only experienced vibration to any really appreciable extent when he had to put in a lengthy spin at a good pace over bad roads.

During his journey Mr. Goodwin's kit was carried in a "hold all" on the handle-bar, and sufficiently large to contain a complete change of apparel. On the back of the tricycle was a leather wallet, with waterproof, writing case, etc.; the tool bag (containing, of course, a complete set of appliances) being fastened on the axle bridge. In fact, everything necessary was carried, and the traveller on his machine was independent of carriers and railway companies.

On most of his journeys Mr. Goodwin employed low gearing, and with such his best speed has been 22 to 23 miles per hour. With a higher gearing he has done 28½ miles in the hour.

The man who can withstand snow and sun within such short times as we get in England and accomplish such a journey must have stamina, and were he to go in for motor racing ought to do great things. But Mr. Goodwin prefers, as yet, to restrain himself, being content with his already valuable demonstration of the use of the motor-tricycle. As an old cyclist—a winner of twenty first and eleven second prizes in open events in 1890, as well as minor prizes, club medals, etc.—he knows something of the track, so he appears equally at home there as on the road.

As a result of his experience he is determined to continue the use of the motor as a means of transportation in future business peregrinations; and on every point of concern, such as convenience, saving of time, etc., can assure travellers thinking of motoring that it leaves the old-fashioned railway travelling far behind. All he insists upon is that if a motor-tricycle is employed on lengthy country journeys the user should satisfy himself that he is purchasing a reliable machine, such as Mr. Goodwin has himself purchased from the Motor Manufacturing Company.

ON Thursday last one of the latest pattern Thornycroft steam lorries was shipped from Liverpool to Messrs. Guinness', the well-known brewers of Dublin. The vehicle is designed to carry 3½ tons.

## FURIOUS MOTOR-TRICYCLING AT GUILDFORD.

JOHN DENNIS, of Guildford, was summoned last week for driving a motor-tricycle in the High Street furiously, to the common danger of passengers, on the 12th ult. Mr. T. Wainscot appeared for the defendant, who pleaded not guilty. Sergeant Hall stated that he was in Friary Street, close to Mr. Allen's shop, about 12.10 (noon) on the 12th ult., when he saw the defendant pass on a motor-tricycle from the direction of the bridge up the High Street. He was going at a very furious pace, quite sixteen miles an hour. Witness hastened to the end of Friary Street, and defendant was out of sight, but on getting into the road he saw defendant by Swan Lane, going at about the same pace, or somewhat slower. He went up the street and met the defendant returning rather slower. He questioned him as to why he was going at such a pace, telling him he thought he was going twenty miles an hour. He said, "Oh, no; I was not, I was going about eight." He told him he could say for certain he was going at sixteen miles an hour. Mr. Wainscot: Do you know, as a matter of fact it is a difficult matter to get motor-tricycles to go up the High Street?—Witness: I have seen a motor go up the Mount with four or five people in it. Mr. Wainscot said he would call witnesses to

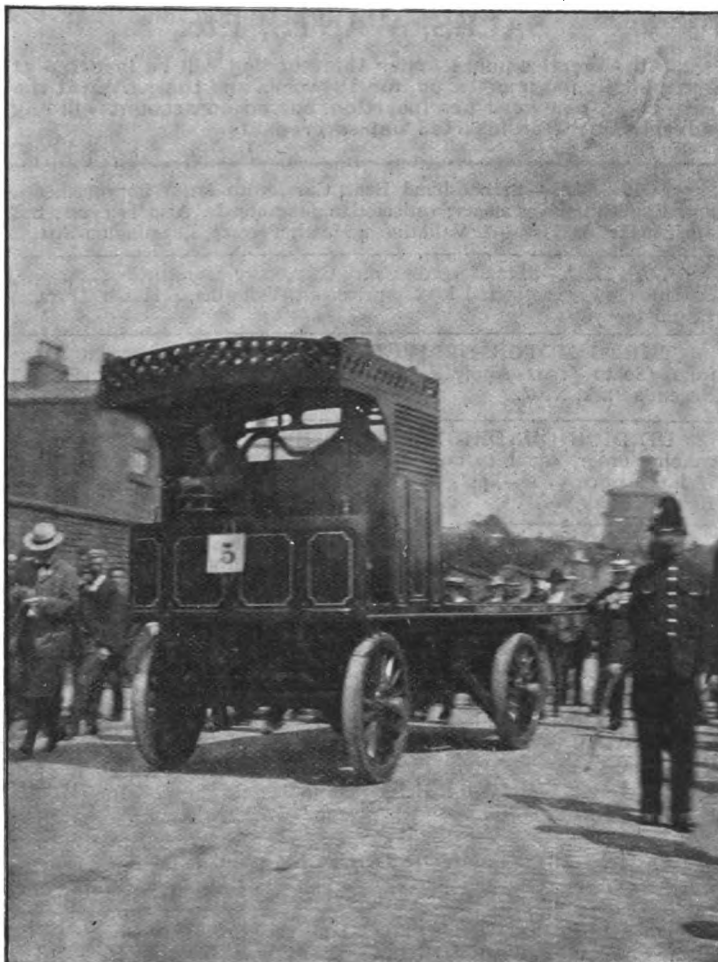


FIG. 13.—THE HILL-CLIMBING CONTEST—THE LEYLAND STEAM LORRY  
(See page 343).

prove that defendant, when passing Friary Street, was not going more than eight miles an hour. It would be impossible to get up a speed of sixteen miles on a machine of that kind after the defendant had pulled up twenty yards at the most from Friary Street. He would prove that it would take a distance of about eighty or 100 yards to work it at that pace on a level road. He then called the defendant, who stated that he was on a new motor-cycle and came down from the bridge at about five miles an hour with the machinery off. When the machinery was off it acted as a powerful brake. His intention was to pull up altogether at his shop, but he altered his mind and switched the current on. On passing Friary Street he had increased the pace by a mile or a little more, and it was ridiculous and impossible for the motor to go twelve miles an hour in so short a distance. Mr. Wainscot called five other witnesses in support of his case, and the magistrates retired to consider their decision. On their return the Mayor said they had come to the conclusion that although the motor-tricycle was not going sixteen miles an hour, the pace was dangerous to the public. They must therefore convict, and defendant would be fined £1, including costs.

## MOTOR-CAR COMPETITION AT NEWBURY.



THE Newbury Guildhall Club held its second annual gymkhana in the grounds of Shaw Avenue, Newbury, on Wednesday, the 26th ult. A feature of the programme was the motor-car competition, for which there were no less than nine entries, the vehicles including several makes and attracting much attention. Prior to proceeding to the grounds, the cars were driven into the Corn Wharf, under the superintendence of Messrs. Stradling and Plenty, the local agents for this class of conveyances, where photographs were taken, after which they moved off in single file, headed by Mr. Stradling's comfortable Benz Ideal car, the route taken being the Market Place, Cheap Street, Railway Station Road, Bartholomew Street, Northbrook Street, and London Road to the ground, the entire distance being covered in ten minutes. The competition comprised:—1st, General driving, one lap at a moderate pace; 2nd, starting and stopping at a given signal from the judges; 3rd, driving through obstacles (the same as those which figured in the arena at the recent exhibition at the Agricultural Hall); and 4th, speed driving, one lap. The winner of the contest was Mr. Stradling, who drove his Benz Ideal car.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

FOR SALE.—Second-hand Benz Cars, with latest improvements, and English improvements; satisfaction guaranteed. Also Tricycles and other makes of Cars.—A. Valintine, 4 Heath Terrace, Leamington Spa.

WANTED.—Second-hand Benz Cars, any number. State age, condition, where seen, and lowest price.—A. Valintine, 4 Heath Terrace, Leamington Spa.

THREE MOTOR DELIVERY VANS, to carry 15 cwt. to 1 ton; from £80 to £150.—Apply Frank F. Wellington, 36 St. George's Sq., Regent's Park, N.W.

DE DION QUADRICYCLE, with British Motor plate, in perfect running order, equal to new, spare wheel for using same as tricycle, 1½ h.p.; price £80.—Apply Frank F. Wellington, 36 St. George's Sq., Regent's Park, N.W.

INTERNATIONAL BENZ SOCIABLE, to seat three, equal to new, in perfect working order; price £130.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DE DION TRICYCLE, 1 h.p., in perfect running order; £30.—Apply Frank F. Wellington, 36 St. George's Sq., Regent's Park, N.W.

TWO WERNER MOTOR-BICYCLES, perfect running order, price £20 each.—Apply Frank F. Wellington, 36 St. George's Sq., Regent's Park, N.W.

TWO BOLLEE VOITURETTES to be Sold cheap.—Apply Frank F. Wellington, 36 St. George's Sq., Regent's Park, N.W.

RACING ASTER MOTOR-TRICYCLE, speed 37 miles per hour.—Apply Frank F. Wellington, 36 St. George's Sq., Regent's Park, N.W.

DAIMLER WAGONETTE, 5½ h.p., very fine car, to carry six.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

PANHARD AND LEVASSOR WAGONETTE, to carry eight, perfect running order, fitted with spare 'bus top for winter use.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-LORRY, to carry 30 cwt., equal to new; to be Sold cheap.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DE DION MOTOR, 1½ h.p., with carburettor and exhaust box; to be sold cheap.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DE DION TRICYCLE, fitted with front seat for carrying two, 1½ h.p.; price £45.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

FOR SALE.—Second-Hand Benz Motor-Car; recently fitted with Connolly Tires, and is in really good order; price £120, a bargain.—Reply No. 69, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

MOTOR-CARS, both new and second-hand. Immediate delivery. Price and full particulars—The Luton Motor-Car Co., Park Square, Luton, Beds.

FOR SALE.—Daimler Car Wagonette, nearly new, little used, painted yellow, 5½ h.p., to seat six or seven; £300.—John Kirsten, Southborough, Tunbridge Wells.

WANTED, first-class Car, to seat four, for private use; Panhard, Peugeot or Mors preferred, with solid tires. Must be up to date and bear inspection.—Fletcher, Hansler Grove, East Molesey.

APPRENTICES WANTED.—No premium, no wages.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

ADVERTISER, aged 22, 6½ years' workshop experience in gear and motor work, good technical training, desires Berth with Motor Firm; workshops, drawing office, or depot.—"B," 70 Hyde Vale, Greenwich.

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797. 24

MOTORS ON HIRE.—Daimlers, Panhards, Benz, New Beestons, etc., in good order, by day, week, or month.—The Yorkshire Motor-Car Co., Ltd., Bradford.

TRANSFERS FOR MOTORS.—A single sample supplied with your own wording to order, gold and two colours, art designs.—Send P.O. 2s. 6d. to George Malton, Motor Transfer Works, Upton Park, Essex.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editor's hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, AUGUST 11th, 1899.

[No. 23.]

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## COMMENTS.



### Motor-Cars in Parliament.

IN the House of Commons on Thursday last week Mr. Tritton asked the President of the Local Government Board whether his attention had been called to the numerous accidents that had lately been caused by motor-cars; and whether he would take steps to compel all drivers of motor-cars to stop until horses and carriages had passed when requested to do so by the persons in charge of them. Mr. Chaplin, in reply, said: "No representations have been made to me as to numerous accidents caused by motor-cars, and ample powers are given already under regulations made by the Local Government Board to give effect to the object of the hon. Member. The article provides that every person shall, on the request of any police-constable or of any person having charge of a restive horse, or on such constable or person putting up his hand as a signal for that purpose, cause the light locomotive to stop and to remain stationary so long as may be reasonably necessary."

### A Detachable Motor-Car Chain.

ONE day last week we received a visit from Mr. A. Pearse, of Hampstead, N.W. The object of his call was to show us a new rivet he has devised, by means of which every link of a motor-car chain can be instantly detached. The rivet is a compound one, being made up of two parts, one fitting in the other. The inner one has two spring tongues, which, when inserted in the outer hollow rivet, open out and form a rigid connection. In the sample shown us the rivets were loose in the outer side plates, but Mr. Pearse states that the connection between the two can be easily made quite as rigid as in the ordinary motor-car chains. The idea of a detachable chain, if it can be made as durable as the ordinary type, is, of course, a good one, as then the operation of taking out a link after the chain has worn is greatly facilitated. Mr. Pearse is, we understand, anxious to arrange with a chain-making firm to take up his new rivet.

### A Motor-Car Aids the Police.

ALTHOUGH it must be said that motor-cars, or rather their owners, have hitherto received but somewhat questionable treatment at the hands of the police in various parts of the country, this has not prevented an automobile vehicle from performing a new office, viz., that of assisting the police in capturing a man who was endeavouring to escape arrest for assault. The man, a waiter named Warmingham, visited a hotel at Stonebridge, near Birmingham, in a state of drunkenness, and as he refused to leave the proprietor had to use physical force. In the struggle the latter met with injuries through being thrown down by Warmingham, who tried to get away by boarding a carrier's cart. The prosecutor, however, followed in his motor-car, in which there was also a policeman, they eventually succeeding in placing the assaulter under arrest.

### English Automobile Progress—From a French Point of View.

THE Editor of *L'Avenir de l'Automobile et du Cycle*, of Paris, who was a visitor to the two recent English motor-car exhibitions, has returned home with a very high opinion of English-built automobile vehicles. In the last issue of his journal he states: "The progress which is being made at the other side of the Channel is worthy of more than passing notice. English builders are making rapid strides, and the time is not far distant when they will be able to offer motor-vehicles and cycles at prices at which French builders will not be able to compete; indeed, they already have several types of electrical vehicles which require a lot of beating."

### An Editor's Confession.

THE Editor of the *Stable and Kennel* has made a confession. Referring to our recent surprise at his continual growls against automobilism, our contemporary declares, "We have no prejudice against the motor-car," and then goes on to speak of it as a good thing in its place. It appears that, after all, the *Stable and Kennel* is not so much afraid of the motor-car as of the "reckless Juggins who can afford to pay the price or hire it." We quite agree with our contemporary in insisting upon proper safeguards for the public safety, and believe that in giving publicity to new ideas that are making for mechanical perfection, and in encouraging tests of reliability rather than of wild and wanton speeds we are doing more for the public than if we were continually grumbling at the present state of things. But we are glad to see, and heartily acknowledge, the kindlier tone with which the *Stable and Kennel* treated the motor-car last week, and hope it will long continue in such a mood.

### More Motor Etymology.

A good deal of time and energy is just now being wasted in America on the question of suitable terms for automobile vehicles. The latest suggested name is "autobaine," "baine" being derived from an old Greek word, meaning wagon. Taking the word "autobaine" as a base, the gentleman who has brought it forward further suggests "autobaineer" as the name for a gentleman driver, "autobaineeress" for a lady operator, and "autobaining" or "autobaineering" for the act of using the vehicle.

### "To-Day" on Motor-Tricycles.

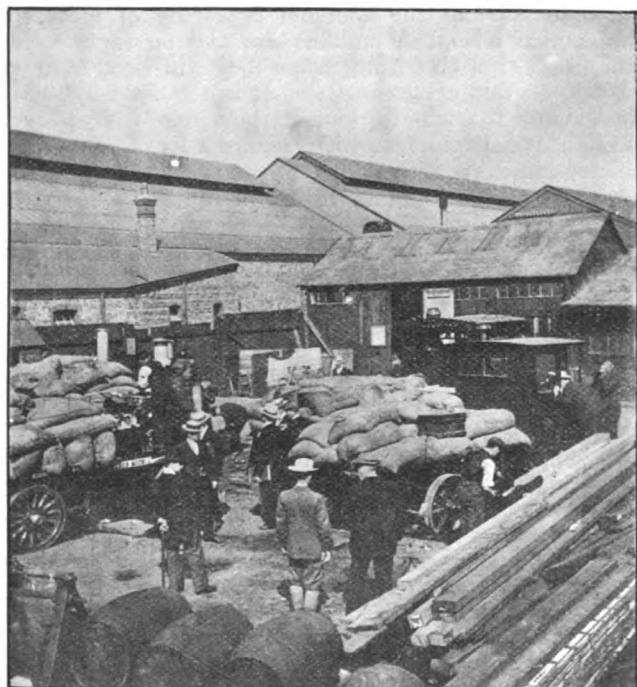
A WRITER in *To-Day* remarks that "It seems as if there was going to be a boom in motor-tricycles. A few months ago they were comparatively rare; now I see so many of them daily that I am compelled to recognise this fact. I hear that several business men have started them, and make their daily journey into the City on them. Also I have heard of one residing at Hampton who has dropped the railway and comes in to business on a motor-tricycle. The fact is the advantages of them are great." It is satisfactory to find the general press being thus slowly



but surely "converted" to automobilism. There are, however, a number of journals which are still very much anti-automobile. They have still to learn the advantages of motor-vehicles. When they do, as do they must sooner or later, it is to be hoped that they will give them their support to the same extent as they are just now endeavouring to mar their progress.

#### Something Wonderful from Australia.

WE have this week received a copy of an Australian cycling paper in which reference is made to the experiments in the way of motor-vehicles made by Mr. H. Austin, of Fitzroy, N.S.W. This gentleman has been at work for the past three years constructing a motor which he claims will create a stir in the motor world when completed. Our contemporary states: "The new idea will, it is estimated by Mr. Austin, weigh only about 1 cwt., and will be of such simple construction that it will have no mechanism to get out of order, the only moving parts being practically the piston and the gear wheels. How this is to be done Mr. Austin is



THE LIVERPOOL HEAVY-VEHICLE TRIALS.—VIEW IN YARD BEFORE THE START.

Photo by

Mr. Fred Rowcliffe, Manchester.

not yet prepared to state, but he expects to be able to construct a car that will carry four persons, and go from Melbourne to Bendigo in three hours, using only about five pints of gasoline for the trip. The inventor reckons that when perfected he will be able to turn out a car at a cost of £35 that will run 100 miles with two passengers at a working cost of threepence." We shall look forward with interest to further particulars of the Austin motor-car.

#### Electrical Vehicles in Canada.

WE learn that the Still Motor Co., of Toronto, Canada, is arranging to build Still storage batteries and motor-carriages on a large scale both for the Canadian market and for foreign trade. The Company has recently completed a motor delivery wagon for Messrs. R. Parker & Co., Toronto, which is described as being neat, light and easy-running. The wagon is equipped with an 8-h.p. motor and a battery of thirty-six cells, the total weight of which is 486 lb.; the complete vehicle ready for running weighing about 1,200 lb. The range of the battery without recharging

is about forty miles, and the speed can be regulated from three to fourteen miles per hour.

#### "The Road" and Motor-Cars.

WE are glad to note that *The Road* is setting an example to many journals by regarding motor-vehicles in a reasonable light. In its last issue our contemporary publishes an article dealing with an extensive motor-car tour in Devonshire and Cornwall. In commenting on the article our contemporary states: "Apart from the sentimental value attached to an undertaking of this character, it disposes once and for all of the silly statement made by certain individuals that the motor-car is ridiculous and impracticable. It stands to reason that a tour which can extend over 600 miles over some of the very worst and most precipitous roads to be found in the Kingdom, and with no more serious breakdown than a split strap or a defective water-jet, must rank as no mean achievement. A journey of this length and 'over such a route' is a valuable and efficient test of what a motor-car can and cannot do; and, so far as we know, this expedition has never been equalled. That the motor-car is on the high road to achieving a lasting place in everyday life cannot any longer be denied."

#### "Marks" on Motors.

THE above is very interesting reading—especially as it appears in a publication belonging to Mr. P. Marks, a brother of Mr. Harry Marks, M.P., the Editor of the *Financial News*. We think our readers will appreciate the praise more highly when they learn that it was Mr. Harry Marks and his secretary who were the tourists in question; so that while in one publication it is thought necessary to do all that is possible to vilify motor-cars, yet in the other no praise is too high when speaking of their merits. Referring to the recent articles in the *Financial News* on our Exhibition, we can surely say that it is not automobilism that has gone mad, but rather that in the office of our contemporary a somewhat lax system of discipline prevails, which permits the Editor's opinions of the merits of automobiles to be overridden by some junior on the staff.

#### Bournemouth and its 'Busses.

WHY should Bournemouth lag behind other resorts so far as methods of locomotion is concerned? Mr. A. H. Collier having applied for licences for two motor-cars for public service, the Town Clerk has replied that the Horse Committee of the Town Council will inspect the cars. At the meeting at which this inspection was mentioned Mr. Gunning suggested that all new licences should be carefully watched, as if the motor-'busses were adopted they might compete with and "nurse" the horse-drawn vehicles in the town, and upset a new time-table which has been lately introduced. Alderman Hiron replied by saying that as the application was made the committee were bound to see the cars, but he hoped Mr. Gunning would vote against them, and he would promise to do the same. If aldermen and councillors have made up their minds to vote against motor-cars, why take the trouble of inspection? This is a specimen of the prejudice which is being opposed to the introduction of automobilism in various places, but which, we are glad to see, has no support in the local press of Bournemouth.

#### The Renault Motor-Tricycle.

IN a letter to us this week Messrs. Marshall & Co., of Clayton, Manchester, the builders of the Hurtu cars in this country, inform us that they have acquired the English patent rights in the Renault motor-tricycle, and are rapidly proceeding with the arrangements for its manufacture.

We referred in our issue of the 28th ult. to M. Renaux's wonderful performance on the Parc des Princes track in Paris. His achievement in the recent Paris-St. Malo race is, however, even more noteworthy, for he succeeded in



THE HILL-CLIMBING CONTEST AT LIVERPOOL—SNAPSHOT EN ROUTE.

covering the distance between the two places (372 kilometres) in 7 hours 11 minutes, his average for the seven hours run being thus over 32 miles per hour.

#### The London Steam Omnibus Company.

THE scheme formulated by Mr. W. J. Hunter, the solicitor who has acted for a number of shareholders in this Company, has been accepted by the litigant shareholders, and the Company issued notice of a meeting of the general body of shareholders to be held to-day (Thursday) at the Hotel Cecil. We are informed the meeting is being called by the present board in pursuance of the scheme, and at it Mr. Bayley, as chairman, will explain the arrangements which have been made. Then the resolutions changing the name of the Company to the Motor Traction Co., Ltd., and providing for half-yearly meetings, will be submitted, and the new board elected. The third member of the new board will be Mr. W. H. Andrews, of the London Tramways Co.

#### A New Beeston Motor-Quadricycle.

WE had a short spin the other morning on a new Beeston motor-convertible quadricycle, and although the road covered was very stony and rough, riding on the front seat was comfortable and free from metallic jar. The construction is a new design, and gives a very long wheel base, thus reducing vibration to a minimum. The capabilities of speed are 25 miles per hour as a single machine and about 20 miles in the double form. The machine can be transformed into a single-seated tricycle by simply unscrewing a few nuts, removing the front portion of the machine and inserting a front wheel.

#### Raising the Speed Limits.

THE trials of heavy motor-vehicles which are being conducted by the Automobile Club of Great Britain on behalf of the Local Government Board with the view of an increase in the limits of the speed of such vehicles weighing unladen over 1½ tons, commence this morning at Richmond. We are sorry to learn that only three vehicles have been promised for these trials, viz., a 3-ton steam wagon by the Steam Carriage and Wagon Co., Ltd., Chiswick, a

delivery van by the Daimler Motor Co., Ltd., and a 2-ton Cannstatt-Daimler lorry by the Motor-Carriage Supply Co., Ltd. The reason for the very few vehicles which have been entered is undoubtedly due in a large measure to the short notice given of the experiments, while the heavy motor-car trials at Liverpool last week may also have caused interference. The successful character of the trials last week, however, should do much to assure the Inspectors of the Local Government Board that immense progress has been made in the construction of heavy motor-vehicles during the past twelve months from every point of view.

#### Motor-Vehicles in Ireland.

THE motor has, to use the phrase of the *Freeman's Journal*, "been steadily gliding into more general use in Dublin," and so far as the large cities of Ireland are concerned it is accepted as a permanent institution in the streets. Even the jarveys, whose early chaff was unmerciful, now admit that the motor-car is something more than a subject for jokes and witticisms. But it does not seem to have yet got far into the country districts, where, of course, it should prove extremely serviceable; and we are glad to notice that our contemporary suggests the motor-car as an alternative for goods and passenger traffic for out-of-the-way districts. While we recognise the usefulness of motor-vehicles in such localities, we are afraid there is hardly sufficient traffic to make a service profitable in more than a few specially-favoured parts of the country.

#### The Pope and Motor-Cars.

LAST week we announced that the Pope had been presented with a motor-car by a French firm, but, on good authority, added that his Holiness had not commenced to ride, confining himself to the carrying chair so long employed in connection with his daily exercise. According to the Rome correspondent of the *Daily Mail* the Pope has, however, since had an experimental ride on his motor-car, with the result that he has become enthusiastic with regard to automobilism, declaring that however agreeable the bicycle may be for young people the motor-car is the vehicle for the old. "So delighted," adds the Rome correspondent, "is he with this form of locomotion that he has allowed himself to



THE HILL-CLIMBING CONTEST AT LIVERPOOL—SNAPSHOT EN ROUTE.

be photographed in his automobile." Could admiration go further? But with every respect for the veracity of our contemporary's representative in the Eternal City we *should* like to see that photograph.

**Catalogues  
Wanted!**

MR. W. R. TURNER, the Ashells, Quorn, Leicestershire, has been alarmed at the pace of some of the motor-car drivers on the road between Leicester and Quorn. "I have been very nearly thrown out of my trap twice," he writes to the local press, "and although I held up my hand when my pony became unmanageable the driver (of a motor-car) deliberately rushed by me at a terrific speed. On the first occasion I only just escaped a serious accident. Rather than risk a third I decided to get rid of my pony, which I did at a considerable pecuniary sacrifice." Mr. Turner is apparently without any means of getting about now he has sold his pony, and we would suggest he should become an automobilist. In any case, manufacturers of motor-cars might send copies of their catalogues to Mr. Turner, who can be assured as to the patience of the motor-car when it meets shyng ponies and other irritating animals.

**Agricultural  
Hall Exhibition.**

REGARDING the 1900 Motor-Car Exhibition to be held at the Agricultural Hall in April, we have pleasure in stating, in answer to several correspondents, that we shall still retain the arena for practising purposes and for the trials of the various vehicles on exhibition. A more elaborate programme of motor-car sports will be arranged and additional prizes given.

**A Long-Distance  
Run by a  
Steam Lorry.**

AN interesting long-distance trial is being made of one of the steam motor-wagons which competed in the trials of the Liverpool Self-Propelled Traffic Association last week, a load of crystal carbonate having been provided by Gaskell & Deacon's works at Widnes. Twenty bags of this article were loaded up at Widnes at midday on Tuesday, consigned to a London firm. The vehicle in question is that of Messrs. Clarkson & Capel, London, its total load being about three tons. This test is the longest yet undertaken in England, and the start was witnessed by Messrs. V. C. Driffield, Max Muspratt, Shrapnell Smith, and other officials of the United Alkali Company. The start was made at 12.40 p.m. on Tuesday, and according to a telegram lately to hand Cannock was safely reached at 5 p.m. on Wednesday. The vehicle is expected to reach London some time to-day (Friday).

**SCOTTISH NOTES.****On Holiday.**

THE fashionable holiday month of August is now with us, and anything in the way of organized motor runs is impossible here, all the good Scottish motorists having betaken themselves to their holiday quarters, and with them of course their favourite motor-carriages. This annual exodus undoubtedly answers an excellent purpose in the way of introducing the motor-car to new places and people, for, as has been found from past experience, the more the "horseless carriage" is known the better it is liked.

**A Long  
Non-Stop-Absolute  
Run.**

EARLY last week I visited Hamilton, and had an opportunity of interviewing the busy managing director of Stirling's Motor Company there. Mr. Stirling had just returned from a business trip in the North of England, and in the course of conversation he informed me that on this trip he had done his longest non-stop run—for of course Mr. Stirling journeyed on his now familiar motor dog-cart, on which he has travelled over 12,000 miles, including his run from Edinburgh to London in two days in June. He left Hamilton at 8.30 a.m., and absolutely without stop he drove

into the City of Carlisle, a distance of 83½ miles, and drew up at the General Post Office at 1.25 p.m., the journey having been accomplished in 4 h. 55 m., or about an average speed of 16½ miles an hour. I have not beside me at the moment the particulars of the longest known "non-stop-absolute" run, which I think was credited to Mr. S. F. Edge on his tricycle, but I believe I am right in stating that it was several miles less than Mr. Stirling's run.\* To Mr. Stirling's previous long-distance records therefore has to be added the "non-stop" record of 83½ miles. Mr. Stirling informed me that his car could not have run another mile more without having a means of refilling the petrol tank while the car was running, or having a larger tank fitted, as after stopping a few minutes at the Post Office the car was driven into the yard of the Red Lion Hotel, and the petrol tank examined, when it was found to be practically dry. The return journey, made a few days later, was, I understand, done in the teeth of a strong head wind, with one momentary stop to relight a burner which was blown out at the most exposed part of the road near Beattock. The time was 5½ hours. I have taken the trouble to record these facts chiefly as an answer to the happily decreasing number of sceptics who still speak of waiting till motor-cars are "practical things." Such performances as I have recorded are enough to more than satisfy every reasonable and unprejudiced mind.

**Strathallan  
Games.**

THIS great highland gathering at Bridge-of-Allan took place on Saturday last, and, as in former years, the motor-car assisted in conveying some of the many thousands of visitors from all parts to the scene of operations, only their number was considerably increased. I counted some half dozen vehicles of the Falkirk Motor-Car Co., three wagonettes from the Hamilton Co., and another from Perth. All of them were well patronised, and their owners appeared to be satisfied with the financial returns.

**Proposed  
Motor-Racing Track  
for Scotland.**

IT is only natural that the immense popularity of motor-racing on the Continent, in conjunction with the increasing interest in everything pertaining to motors in this country, should be exercising a very great influence on the minds of many practical motorists here, and while it is too much to expect the public highways of Britain ever to be thrown open to great motor races as in France, the construction of suitable tracks on which such public competitions can be undertaken with perfect safety to riders and the public alike is a subject worthy of serious consideration. It is needless to refer to the enormous influence which "the path" exerted in the development of cycling, and motor racing on properly built tracks is bound to do the same thing in the development of motoring. I understand that a scheme for the establishment of a motor-racing track is at present under the consideration of more than one prominent Scottish motorist, and in the interests of the motor industry in Scotland I trust the proposal will take definite shape and soon be put into successful execution.

**Automobile Club's  
Autumn Tour.**

MUCH satisfaction is felt in the North with the proposal to have the autumn tour of the Automobile Club in Scotland, and the hope is freely expressed that the proposal will be carried through. Considering the growing interest in an organization or club for Scotland, the committee have acted wisely, I think, in making such a suggestion; and in the name of all Scottish motorists I can assure the members of the great club a most hearty welcome to "bonnie Scotland."

"BROWN HEATHER."

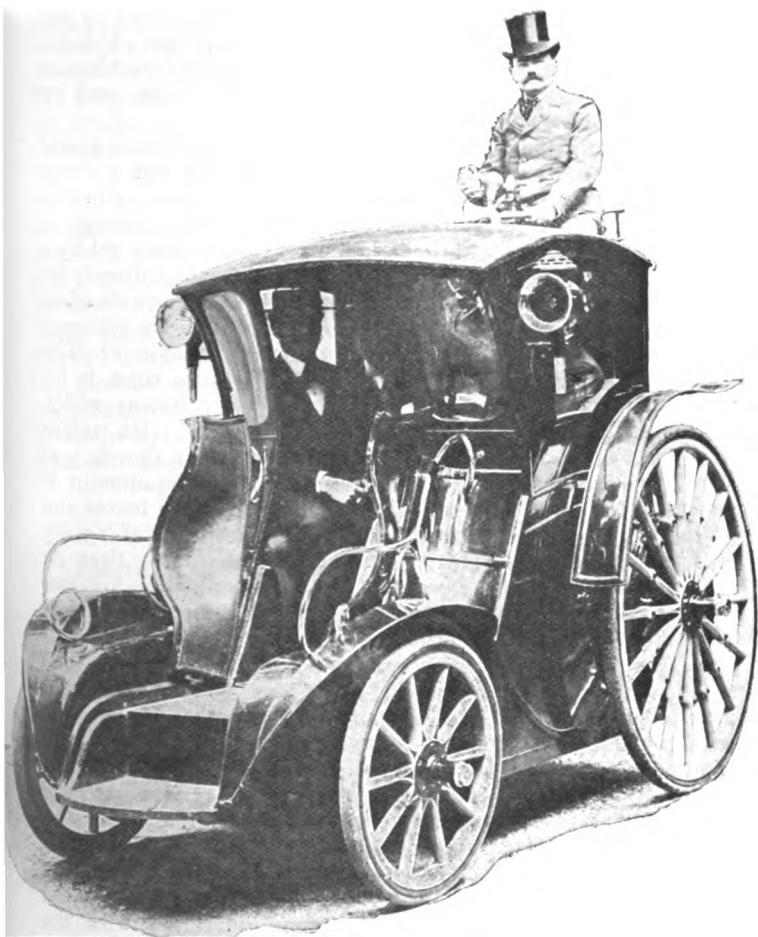
\* "Brown Heather" has apparently overlooked the long non-stop run made by the Hon. C. S. Rolls during the course of the recent Exhibition at the Agricultural Hall. As stated in our issue of July 21st, Mr. Rolls succeeded in performing an absolute non-stop run of 134 miles in 6 h. 42 m.—*Ed. M.C.J.*

## A NOVEL FRENCH ELECTRIC CAB.

—❦—

ONE of the novelties at the recent motor-car exhibition in Paris was undoubtedly the "Autocab" exhibited by Captain E. Draulette, of 3 Rue Collin, Puteaux, Paris, of which we are herewith able to give an illustration. In general appearance the vehicle somewhat resembles a hansom cab; it has, however, four wheels, while the seats are arranged in a semi-circular form, providing ample accommodation for four persons. The entrance to the vehicle is right at the front, between the wheels, the driver being perched up in a high position at the rear.

The accumulators are forty-four in number, of the Fulmen B 13 type, each cell comprising six positive and seven negative plates. The capacity is given as 105 ampère-hours, permitting, it is claimed, a run of five hours, at a discharge rate of 21 ampères, at an average speed of 12½ miles per



CAPTAIN DRAULETTE'S "AUTOCAB."

hour. The accumulators are arranged in four trays carried under the seats, and weigh not quite 7 cwt.

The electro-motor employed is a special one, of the two-pole type, provided with double carbon brushes. It is suspended at the rear of the vehicle by a spring and roller attachment which permits it a slight movement at starting while still maintaining the connection between the gear wheels. The power is transmitted by a hidden pinion on the motor-shaft to a large toothed wheel surrounding the differential gear on an intermediary shaft, hidden pinions on the ends of the latter gearing with internal toothed rings bolted to the rear wheels. The controller is mounted on a tube which turns around a second fixed tube, in the middle of which is located the steering standard. It is arranged to give four forward speeds (4, 9, 14 and 20 kilometres per hour) and one backward motion (4½ kilometres). In addition, the motor is also arranged to act as an electrical brake, four different

degrees of brake power being provided for, the variations being obtained by means of a single resistance. A new device to be found in the Autocab is that when the cord-brakes on the rear wheel hubs are brought into action by a foot pedal the electrical brake is also automatically applied. The arrangement adopted also permits of the suppression of the usual current breaker, for when the foot-pedal controlling the cord-brakes is pressed down the controller is automatically brought to the zero point, and afterwards drawn over to the braking position. Captain Draulette also claims that his new arrangement prevents any false movements on the part of the driver. With the exception of the first speed and the backward motion all the different speeds, electric brake, etc., are obtained by the controller acting on the windings of the motor, the accumulators being continuously grouped in tension.

The road wheels have wooden spokes, the front pair (the steerers) being 30 in. in diameter, and the rear pair 51 in. Including four passengers and the driver the weight of the vehicle loaded is given as 1 ton 400 lb.

As a result of a series of tests with the vehicle illustrated herewith, Captain Draulette informs us that he has just designed a new type of Autocab, which, while still retaining the same general power, has a much lighter appearance. We understand that orders are already in hand for over one hundred vehicles of the new type for service in France, and in a letter to us Captain Draulette states that he is anxious to arrange for the introduction of his vehicles into England.

In addition to the motor-omnibus which was tried in Berlin two or three months ago, one or two other attempts are now being made to introduce motor-buses on the streets of the German Capital.

We have received from the Grant Axle and Wheel Co. of Springfield, Ohio, U.S.A., a copy of their new catalogue of the Grant roller bearing for the wheels of vehicles. This bearing is controlled in this country by Messrs. J. W. and T. Connolly, of King's Cross, London, N., samples of the same being shown at the recent Exhibition at the Agricultural Hall. The bearing appears to be largely used in America by builders of both horse-drawn and horseless vehicles.

GEORGE SMITH, in the employ of the Allard Cycle Co. Coventry, was last week fined 5s. and costs for furiously driving a motor-car at Ryton. Several constables timed the defendant as doing 110 yards in eleven seconds. The defence was that the defendant was experimenting with the car; and his solicitor said that if the firm were not allowed to test motor-cars on the quiet Coventry roads it would tend against trade.

The Oakman Motor-Vehicle Co., Greenfield, Mass., is undergoing reorganization at Philadelphia. The Oakman Motor-Vehicle Co., of America, has been incorporated at Dover, Delaware, with a capital of £1,000,000. The Company will acquire all patents pertaining to what is known as the Hertel motor, together with all the rights, property and goodwill of the Oakman Motor-Vehicle Company of Greenfield, Mass., the present owners of the patents, with a view of granting to subordinate companies the right to manufacture and sell motor-vehicles covered by the patents in the several States of the United States.

A SERIES of motor-car accidents has lately taken place in France, but all have caused injuries not to the public but to the "chauffeurs," so that nobody has the right of proclaiming motor-cars are dangerous to the general public. Moreover, our Paris correspondent states that the accidents have always been due either to the ignorance or to the excitement of the driver. Motor-cars are given and delivered to anybody, so that the apprenticeship is often so insignificant as to result in accident. A serious examination to obtain the right of handling a motor-vehicle would, it is considered by many, be a good thing both for the "chauffeurs" and for the motor industry.



## "MOSSBERG" ROLLER BEARINGS.

**A**LTHOUGH the merits of roller bearings as applied to rolling mills, railway and electric tram car boxes, etc., have long been recognized, it is unfortunately a fact that the tendency of some manufacturers to make a cheap bearing universally applicable has not been found to be the wisest policy. Of course, the saving power necessarily varies according to the pressure and speed, but in well-designed bearings it should amount to 75 to 80 per cent. of the journal friction. To secure such a result, however, only the best material must be employed, and its manufacture conducted with the greatest care.

That this fact has been recognised is the reason of the success which has attended the efforts of the Mossberg Roller Bearings, Ltd., of 6 Victoria Street, London, S.W. Seeing that the bearing in the form shown in our illustrations is the result of nearly ten years' experience, it can safely be said to have passed beyond the experimental stage. As will be seen from Fig. 1, it consists of a bronze cage in which are

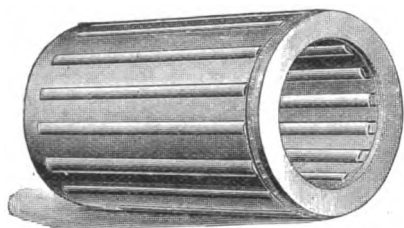


FIG. 1.

a series of hardened and ground steel rollers. The cage, through which the shaft runs, is allowed to run in a cylindrical case fixed in the plummer block. The bearings are made in all sizes from one inch in diameter, being particularly adapted to motor-vehicles, gun carriages, gas engines, machinists' tools, tram cars, etc. We are informed that the Mossberg bearings have been applied to nearly a thousand rolling mills, having, in many cases, run without any perceptible wear for nearly a decade, and permitting a pressure of 20,000 lb. per square inch on the projected area of the journal.

One of the most conclusive tests of the efficiency of the Mossberg bearings over those ordinarily employed was made with a Bemis truck which was equipped by the General Electric Company. This had a load of 3,360 lb., and a power of 240 lb. was required to start the motor by pulling at tangent to radius ( $16\frac{1}{2}$  in.) of wheels of truck when ordinary bearings were used; but in the case where that shown in Fig. 1 was employed the power required was only 18.5 lb. In the case of a Mossberg bearing which had run 150,000 miles on a tram car, the only wear that was perceptible was in the slots of the bronze cage, thus demonstrating how effectually the rollers are prevented from wrapping round the axle. Another test to which the Mossberg bearing has been subjected was with a steel wheel weighing 130 lb. and 14 inches in diameter, being speeded up to 10,000 revolutions per minute. This continued

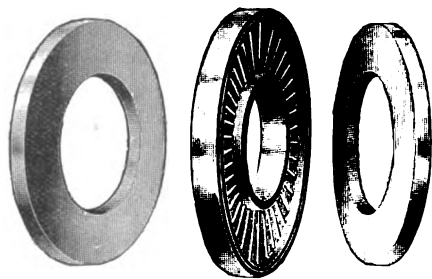


FIG. 2.

revolving one hour and thirty-three minutes after the source of power had been disconnected without any hurt to the bearing.

Fig. 2 illustrates the end thrust bearings specially designed as a substitute for thrust blocks in shafting subjected to end pressure. They are therefore particularly applicable to motor-car axles, propeller turbine and worm gear shafts, etc. The same principle has been adopted as in the construction of the roller bearings, but they are conical in shape, and tests have proved that an effort of only 5 per cent. as compared with ordinary thrust bearings is sufficient at starting.

In conclusion we would point out that roller bearings require very little lubrication, and that the Mossberg Bearings, Ltd., guarantee a saving of from 10 to 33 per cent. of the power previously used by the adoption of their specialities.

## NEW TYPES OF COLUMBIA ELECTRICAL VEHICLES.

**T**HE most recent types of electric vehicles built by the Columbia Automobile Co., of Hartford, Conn., U.S.A., comprise two pleasure vehicles of the lighter class, a brougham, and an emergency wagon of the type used by electric tramway companies in America.

In the new lady's small Victoria the body is suspended through fore and aft elliptical springs at the rear, and a transverse spring and spring irons at the front, upon a running frame of steel tubing. This carriage is driven through a tubular rear axle, split at the balance gear, but reinforced by a rod passing through its entire length, giving it stiffness, yet permitting the balancing of the two sides of the driving axle when necessary. The balance gear and motor pinion are enclosed in an aluminium casing, permitting of running them in oil. The motor, hung between the rear axle and a cross tube, is intended for twenty amperes and seventy-five volts, at which load it is claimed to yield 80 per cent. efficiency. Its weight is 140 lb. The total weight of the vehicle is 1,450 lb.; of the batteries 690 lb. The usual electrical equipment is supplied, the forty-four cells being grouped in four boxes and giving, through alterations in the grouping, speeds of 15, 7.5 and 3.8 miles per hour. Three-inch pneumatic tires on 28-in. wheels are employed. A runabout phaeton for two passengers is another new type, the electrical and mechanical equipment of which resembles the Victoria very closely.

The new brougham is intended for private use. The small details of this vehicle have been carried out with all the completeness and elegance possible. The body is given an easy riding motion upon half-platform springs at the rear and a compound Brewster spring at the front. The batteries are placed under the driver's seat and at the rear. The interior is luxuriously upholstered in satin, broadcloth and leather, and contains such conveniences as an electric reading lamp, hand mirror, pockets and shelves for parcels, and a small clock set in the upholstery. An electric signal, operated by a push button within, affords communication with the driver at any time. A forty-ampere motor is used on the vehicle, capable of giving 83 per cent. efficiency at normal load and 78 per cent. efficiency at 150 overload. It is spring-suspended, and drives through the balance gear and a single reduction. The wheels are of wood with solid rubber tires. The batteries weigh 1,375 lb., the carriage complete 4,100 lb. The maximum speed is eleven miles per hour, and under good conditions of road twenty-five miles on a single charge can be covered.

The new emergency wagon is equipped with all the appliances and tools carried on wagons of this type—fire extinguishers, extension ladder, stretcher, lanterns, and a complete kit of linemen's tools and apparatus. It is built to carry a crew of four or five men at a speed of ten miles per hour for eighteen miles, this distance being much in excess of the requirements in this class of work. The batteries, weighing 1,400 lb., are carried beneath the main body, and are removable at the side. The total weight is 4,500 lb. Wooden wheels, 42 in. in diameter at the rear and 36 in. at the front, with solid tires, are used.



## MOTOR-CARS ON THE CONTINENT.



## Electrical Motor-Vehicles In Hungary.

At the annual meeting of the Vereinigte Electricitäts Gesellschaft just held in Budapest it was announced that the Company was devoting attention to automobile vehicles, and that it had secured the

rights in a type of electrical vehicle of which great things are expected.

## Paris-Ostend Race.

THE itinerary of this race, which is set down for decision on August 31st and September 1st, has now been definitely fixed. Special care has been exercised to avoid, as far as possible, the terrible "pavés" so common on the

North of France roads. The total distance is 332 kilometres, and those competitors who figure in the tourist class make this journey in two stages, the first being from Paris to Saint Pol (189 kilometres). The tourists will start on August 31st, the racers on September 1st, so that the competitors in both classes will arrive at Ostend during the afternoon of the latter day. A new class has been created in the tourist category, and comprises all vehicles weighing less than 400 kilos., irrespective of their seating accommodation or the horse power of their motors. Among the racing cars already entered are those belonging to MM. Lemaitre, Girardot, Charron, Jecatrays, Degrais and Flash, while MM. Teste, Bardin, Tart, Rivière, Williams, Rigal, R. Kuhling, Degrais, De Modéc, Gasté, Legras, Bistouriste and Merville figure among the motor-cyclists. In the touring class the entrants for voitures are MM. Delizy, Manchon, Mathieu, and Jongla, and for motor-cycles MM. A. Riguelle, Caldas, and Boureau. The start will be effected from Saint Germain.

## Electric Cabs in Berlin.

THE first of the electric cabs which it is proposed to place upon the Berlin streets has now passed its formal police inspection. It is owned by the Thien Berliner Fuhrwesen, and is the invention of Mr. Heilmann, chief

engineer to the Berliner Maschinen-Fabrik. The storage capacity of the accumulators represents a run of forty to fifty kilometres, but it must be borne in mind that the work in Berlin is very light, as practically all the streets are asphalted, and there are no grades worth mentioning. The maximum speed of this cab is fifteen kilometres an hour. It is expected that the service will commence in September, during which month the International Exhibition of Automobiles will be held in Berlin.

## Automobile Club of Germany.

AT a recent meeting of German sportsmen held at the Hotel Bristol in Berlin, under the presidency of the Prince of Hohenlohe, it was decided to found an Automobile Club for the purpose of developing the sport in

Germany. Already 100 members have been enrolled, and under the patronage of the many noble names figuring among the list of officers the success of this new venture is assured. It is proposed to secure a suitable club house at an early date, and also to establish a school of automobilism. The annual subscription has been fixed at 100 marks, and an entry fee of 100 marks will be enforced for members joining after January 1st, 1900. Ladies will be admitted. The following elections have been made:—President: The Duke of Ratibor. Vice-Presidents: Prince Philippe Ernest of Hohenlohe and Count Schoenborn. Committee: Prince of Hohenlohe, Prince of Furstenberg, Count Ratibor, Prince Philippe Ernest of Hohenlohe, Count Talleyrand Sierstorpff, Count Schoenborn, Messrs. Kuhlmann, Goldberger, Pringsheim, Simon, Friedlander, Löwe, Klose, Lobe, and Lewin.

## The Accumulator Tests at the French Automobile Club.

DURING the last two months a variety of types of accumulators have been under test at the French Automobile Club, and on the 4th instant the first official figures were issued. These figures, which we append, will be attentively studied by all interested in electric traction, and it is to be hoped that full particulars of the tests will be published by the Club in due course:—

|               |   | Discharge—Per Cent. |       |
|---------------|---|---------------------|-------|
| Accumulators. |   | June.               | July. |
| 23 B.         | F. Hermel (Austria) .. .. .                   | 35.5                | 9.8   |
| 4 C.          | Société Belge Tudor .. .. .                   | 56                  | 30.2  |
| 9 E.          | Wuste & Rupprich (Austria) .. .. .            | 36.6                | 22.2  |
| 1 F.          | Société du Travail Electricité-Métaux .. .. . | 73.4                | 72.5  |
| 12 H.         | Phénix .. .. .                                | 61.9                | 69.9  |
| 13 I.         | Phénix .. .. .                                | 58.2                | 26.5  |
| 18 J.         | F. Heimeel .. .. .                            | 44.2                | 47.6  |
| 3 K.          | Société Française Tudor .. .. .               | 65                  | 65.8  |
| 2 L.          | Société Générale Électrique de Nancy .. .. .  | 60.6                | 65.1  |
| 19 M.         | Pope & Son (London) .. .. .                   | 70.1                | 42    |
| 11 N.         | Fulmen .. .. .                                | 75                  | 68.3  |
| 10 O.         | Compagnie Blot .. .. .                        | 73                  | 74.1  |
| 17 P.         | Société Souchère Électrolitiques .. .. .      | 57.5                | 42.8  |
| 8 Q.          | Lagerde .. .. .                               | 67.5                | 38.1  |
| 7 T.          | Société Italienne Cruto .. .. .               | 56.3                | 71    |
| 22 S.         | Pope & Son .. .. .                            | 62.5                | 59.7  |

Several of the accumulators originally competing have been either disqualified or withdrawn by their owners.

## The Hour Motor-Tricycle Record.

M. RENAUX's wonderful record of 61 kilometres 797 metres, particulars of which we published in our issue of July 28th, has been speedily eclipsed. On Saturday evening last at the same track, viz., the Parc des Princes, the well-known "chauffeur," Osmont, actually succeeded in covering a distance of 62 kilometres 841 metres, so beating Renaux's figures by 1 kilometre 44 metres. A strong wind commenced to blow after Osmont had reeled off 20 kilometres, otherwise the new record would probably have been about 64 kilometres. We understand that Osmont rode a Phébus tricycle fitted with Aster motor. We append the new times together with those of Renaux for the purpose of comparison:

| Kilo. |       | Osmont.              | Renaux.           |
|-------|-------|----------------------|-------------------|
| 1     | .. .. | 1 m. 58 s. .. ..     | 1 m. 10 s. .. ..  |
| 5     | .. .. | 4 m. 47 s. .. ..     | 4 m. 57 s. .. ..  |
| 10    | .. .. | 9 m. 24 s. .. ..     | 9 m. 35 s. .. ..  |
| 20    | .. .. | 18 m. 47 s. .. ..    | 19 m. 7 s. .. ..  |
| 30    | .. .. | 28 m. 10 s. .. ..    | 28 m. 45 s. .. .. |
| 40    | .. .. | 37 m. 44 s. .. ..    | 38 m. 31 s. .. .. |
| 50    | .. .. | 47 m. 27 s. .. ..    | 48 m. 24 s. .. .. |
| 60    | .. .. | 57 m. 12 s. .. ..    | 58 m. 14 s. .. .. |
| Hour  | .. .. | 62 kilo. 84 m. .. .. | 61 kilo. 797 m.   |

## Paris-Lille Race.

THE organizers of this important event, which is to be run off on the 20th inst., have now decided to eliminate the carriage category, and the race will therefore be entirely reserved for motor-cycles of a maximum weight of 200 kilos. The prizes remain the same—that is to say, five money awards of an aggregate value of 1,050 francs. The start will be made from Chatou on the Saint Germain road at 10.15 in the morning, and the finish will be at the Lille Vélodrome, on the track of which the racers will be required to cover two kilometres. The distance to be traversed is 258 kilometres 500 metres. Among the premier entries we notice the names of Rigal, Tart, and Williams.

## Another Accident.

ON Saturday, at La Fourche, an automobile belonging to the Princesse de Lucinge came to grief in consequence of the collapse of one of the wheels. It is believed that one of the occupants of the car has been somewhat seriously hurt, but full details are not yet to hand. The Princesse de Lucinge is the mother of Prince Aymon de Lucinge-Faucigny, a well-known member of the French Automobile Club.

**A Motor Competition.**

WE stated last week that our French contemporary, *La Locomotion Automobile*, was endeavouring to assist owners of motor-cars in the matter of ascertaining the horse-power of their engines by organizing what it terms "Le Concours de Moteurs." Since then, at the works of MM. Maticet and Blin at Aubervilliers, the initiative commission has held its first meeting and has appointed the officials and committees necessary to carry out the competition. The commission itself is under the presidency of Baron de Zuylen, and consists of thirty-six members comprising many of the best known names in the French automobile world. The officials elected are as follows:—Bureau: Presidents, M. M. Hospitalier and De la Valette; vice-president, M. Carlo Bourlet; secretary, M. Georgia Knap. "A" Commission: MM. Deschamps, Joubert, L. Périssé, G. Sencier, and A. Witz. "B" Commission: MM. Amiot, Augé, Chauveau, G. Desjacques, Joubert, and Gaston Sencier. The A commission will occupy itself more particularly with the brake tests of the motors alone, while the work of the B commission will be the testing of the motors now on vehicles, the results of which will be greatly interesting to the owners. The Baron de Zuylen has promised to place at the disposal of the commissions the seven automobiles he actually possesses, as well as a dozen other vehicles which he has on order.

**A New French Electrical Vehicle.**

It is reported that a new type of electrical vehicle is in course of construction at the machine tool works of Messrs. Huré, in the Rue Lafayette, Paris.

**A Motor-Tricycle Race from Paris to Rouen.**

THE Veloce Club, Rouennais, is organizing a motor-tricycle race, Paris-Rouen-Dieppe-Rouen, for the 27th inst. The distance is about 150 miles.

**Motor Racing in Germany.**

A MOTOR-VEHICLE race, organized by the Bavarian Automobile Club, has just been run off between Innsbruck and Munich, a distance of 173 kilometres. There were eleven starters—four cars, two voitures, and five tricycles; the winner being Baron de Dietrich, who did the journey in 5 hrs. 38 mins.

**Les Criterium des Electriques.**

THE result of the fifty-kilometre race for electrical vehicles organized by *Le Sport Universel Illustré* was given in our last issue. Subsequent to the race, which was run off on the 30th ult., an interesting experiment was made, viz., that of running the competing vehicles round the Longchamps track until the batteries were exhausted. Five competitors started: Cuvelier, on a Bouquin-Garcin-Schivre vehicle, ran 76 kilometres at an average speed of 20 kilometres per hour, a total distance of 126 kilometres (78½ miles) being thus covered by this vehicle on one charge of the batteries; Delory, on a Columbia, did a total of 114 kilometres; Beauvalet (Columbia), 98 kilometres; Garcin (B.G.S.), 90 kilometres; and Creanche, 86 kilometres.

**The Berlin-Dresden Motor-Car Race.**

THE motor-car race between Berlin and Dresden which is being organized in connection with the forthcoming automobile exhibition in Berlin is to be run off on September 18th. The start will take place at 7.30 a.m., and the route will be *via* Potsdam, Elsterwerda, and Meissen.

**The Recent Concours des Fiacles.**

AT a meeting just held in Paris of the Société des Ingenieurs-Civils, M. Forestier presented a paper on the results obtained in the recent *pois-lourds* and *fiacles* competitions recently held in the French capital, under the auspices of the Automobile Club de France. In the course of the paper M. Forestier gave some interesting information regarding the results obtained in the recent motor-cab trials, which we summarise in the appended table:—

| Name.                        | Type.    | Weight.  | Average Speed. |                | Consumption per Kilometre. | Total cost per day. |
|------------------------------|----------|----------|----------------|----------------|----------------------------|---------------------|
|                              |          |          | General.       | On the level.  |                            |                     |
|                              |          | ton. lb. | kil. per hour. | kil. per hour. | Watt-hours.                | fr. c.              |
| Jenatzy (2-seated coupé) ..  | Electric | 1 1,632  | 13.4           | 17             | 196                        | 20 6                |
| Jeantaud (2-seated cab) ..   | "        | 1 994    | 14.6           | 19.6           | 184                        | 19 91               |
| Jeantaud (2-seated Victoria) | "        | 1 1,236  | 15.7           | 20             | 166                        | —                   |
| Jeantaud (2-seated My-lord)  | "        | 1 950    | 16.2           | 19.5           | 164                        | 19 73               |
| Jeantaud (2-seated drojsky)  | "        | 1 320    | 15.3           | 20             | 129                        | 19 52               |
| Krieger (4-seated Victoria)  | "        | 1 1,500  | 16.2           | 22             | 163                        | 19 90               |
|                              |          |          |                |                |                            | Litre.              |
| Panhard (2-seated coupé) ..  | Petrol   | 1 620    | 17.7           | 21.6           | 127                        | 24 24               |

AUTOMOBILES (LAWSON'S), LTD., was registered on August 1st. Capital £100, in £1 shares. Objects: To carry on the business of motor and other vehicle manufacturers, engineers, etc.

MESSRS. SAUNDERS & SONS, Cycle and Motor-Car Works, Colchester, inform us that they have always a good supply of motor-car spirit in stock, and all accessories for motor-cars. They are also prepared to undertake repairs of all kinds.

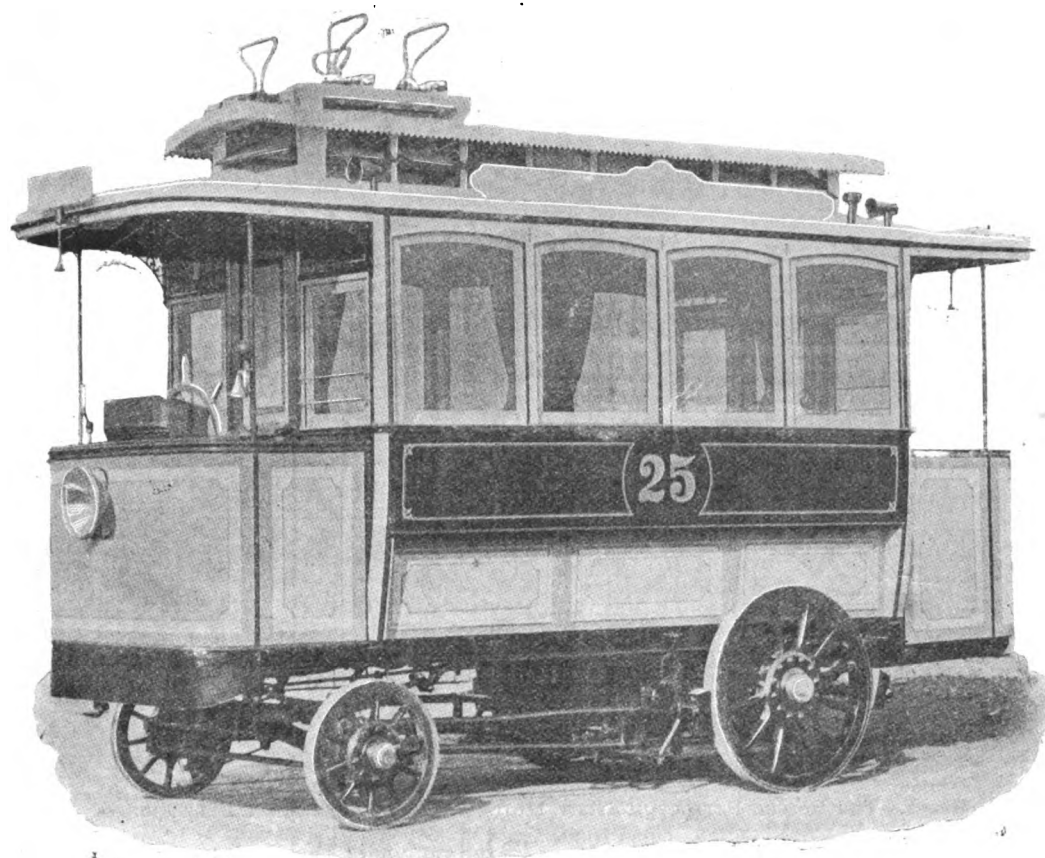
MR. E. SHRAPNELL SMITH, the Hon. Secretary of the Liverpool Self-Propelled Traffic Association, informs us that the judges have decided not to publish any figures relating to the recent heavy motor-car trials at Liverpool further than those already issued until the publication of the report about November next.

AT a recent meeting of the Yarmouth Town Council the Watch Committee declined to grant a licence to Mr. Frank Morris for a second motor-car. Mr. C. T. Hunt was granted a licence for a motor-car to ply for hire, and a Mr. Russell, who applied for licences for two motor-cars, was directed to again apply when he had taken up his residence in Yarmouth.

SHORTLY after ten o'clock on Tuesday morning Mr. and Mrs. W. H. Patterson, of 14 Milton Road, W., were riding a tandem tricycle along the Uxbridge Road, when a motor-tricycle ridden by Mr. Mamel Larcom, of Phoenix Street, S.W., came suddenly round a van, on its wrong side of the road, and crashed into the Patterson's machine, with the result that both machines were thrown over, and the three riders precipitated forward on to the road. Mr. Larcom received such severe injuries that it was necessary for him to be put in a cab and sent home, but Mr. and Mrs. Patterson escaped with a few superficial cuts and bruises. Their machine, however, was completely wrecked.

THE subject of motor-cars came in for a large amount of discussion at the meeting of the Bishop Auckland Urban Council, the matter arising upon the application of a motor-car driver for a hackney carriage licence. Mr. Raine thought if motor-cars were to have licences they should be compelled to stand in the same manner as the 'buses and take up their passengers there, and not travel all about the streets picking up fares. Mr. Kilburn said he was inclined to view with favour any modern improvement for the convenience of the general public. In reply to Mr. Guthrie, the Clerk said motor-cars were hackney carriages in the eyes of the law. Eventually it was decided to grant the licence.

# The Berlin Electrical Omnibus.



IN our issue of May 26th last, under the heading "Continental Notes," reference was made to a new electrical omnibus which has recently been subjected to trial in Berlin. We are now able to give an illustration of the vehicle together with a few brief additional particulars. It is the production of a Berlin company bearing the title Die Gesellschaft für Verkehrsunternehmungen, of which Herr Max Meyer is the director. The omnibus, which has somewhat the appearance of a tramcar, has seating accommodation for twelve passengers, while there is room for six more on the rear platform, the front platform being reserved entirely for the driver. The body of the 'bus is entirely distinct from the frame of the vehicle, being suspended thereon by strong springs. The vehicle is propelled by means of two Siemens & Halske electro-motors—one to each of the rear road wheels—the connection being made by spur gearing. The accumulators are of the Pollak type; they number 44 and are arranged in two batteries of 22 under the seats of the vehicle. The weight or capacity of the accumulators is not stated, but they are claimed to be sufficient to enable a journey of from 15 to 20 kilometres to be made on one charge. Movable contact bars are provided on the roof, which enable the accumulators to be charged from the overhead conductors connected with the electric tramways. Steering is effected through the front wheels by means of a hand-wheel very similar to the steering helm of a steamer. The controller-switch is, as usual, arranged to take a number of positions, so that the vehicle can be started slowly and the speed varied as desired, while one position gives an electrical brake by means of which it is stated the vehicle could if necessary be pulled up in a space of  $1\frac{1}{2}$  metres even when going at full speed. Shoe brakes on the rear wheel tires are also provided. The road wheels are of strong construction and are fitted with ball bearings, the front pair being mounted on the usual vertical

pivots. The omnibus, which weighs, without passengers, about  $3\frac{1}{2}$  tons, was recently driven from the Reichstag in Berlin to Charlottenburg, the distance, which is just over two miles, being covered in 25 minutes. The Verkehrsunternehmungen Co. is also taking up the construction of light electrical vehicles, to which we hope to refer in a subsequent issue. We are indebted to the *Electrotechnische Zeitschrift* for the illustration.

AT Dunblane Sheriff Court last week, George Jack, motor-car driver, Edinburgh, pleaded guilty to driving a motor-car on the road near Lochearnhead Hotel at 11.30 p.m. on the 15th ult. without exhibiting lights, and was fined 30s., with 20s. costs.

LA NATIONALE SOCIÉTÉ POUR LE CONSTRUCTION DE MOTEURS, VOITURES ET VOITURETTES AUTOMOBILES is the title of a new company which has just been formed in Paris (34 Rue Kleber) with a capital of £8,000 to acquire and exploit the patents of Messrs. Bouvier & Barbarou.

WE learn that Messrs. Simpson & Bodman, motor-car engineers, have taken over the Pomona Engine Works, Manchester, previously occupied by Messrs. Hume & Lund, where they have put down a full equipment of machinery and plant specially adapted for the construction of motor-vehicles.

A NOTABLE feature at the conclusion of the Paris-St. Malo race was the presence of the military. The streets of St. Malo were lined by soldiers of the 47th Regiment, and in every town the competitors passed through military trumpeters, and drummers warned wayfarers of their approach. For fully five miles at the end of the route military bands joined in the excitement, and altogether the scene presented an aspect of official recognition such as would have alarmed the Duke of Cambridge had he been there to see.

## THE ROSSEL PETROLEUM-SPIRIT MOTOR-CARRIAGE.

THE type of motor-carriage built by M. Edouard Rossel, of 82 Rue des Sarrazins, Lille, France, is now known in France as the "Rochet," the French rights in the carriage having been acquired by the Compagnie Générale des Cycles, of 23 Avenue des Champs-Élysées,

Figs. 3 and 4 show sectional views of the new vertical two-cylinder motor, which is capable of developing 6 h.p., and is located in the rear portion of the vehicle, *A* (Fig. 1). The cylinders *C C'* (Fig. 3) are arranged side by side, and consist of a single casting, the upper ends being connected with the valve chambers by the semi-spherical parts *c c'*. The motor, which works on the Otto cycle, is so arranged that the crank shaft receives an impulse at each revolution, the cranks being set at an angle of 180 degrees to each other, they being

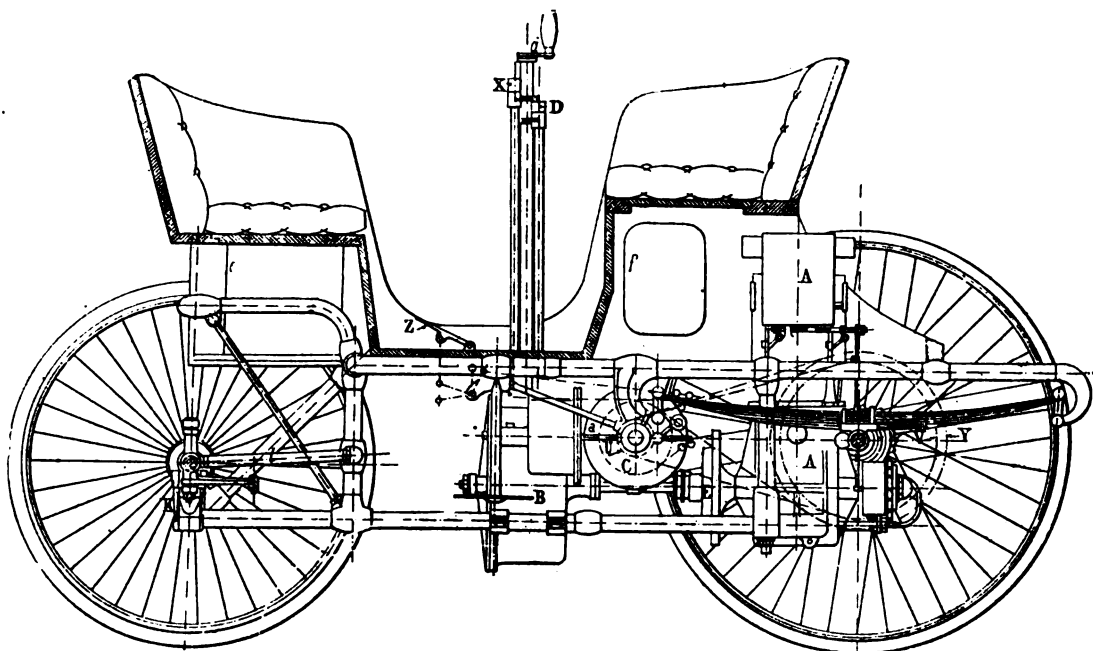


FIG. 1.—THE ROSSEL PETROLEUM-SPIRIT MOTOR-CARRIAGE. SECTIONAL ELEVATION.

Paris. M. Rossel, who, in his early carriages, employed a Daimler motor to propel his vehicles, has since discarded this in favour of a motor of his own design, a description of which will be found below. Fig. 1

fixed on one of their sides to a central disc *T*. The face of the disc has formed on it a cam groove extending twice round it. The admission valves are automatic in their action; the exhaust valves *S* are operated by the rods *t t'* and bell-crank

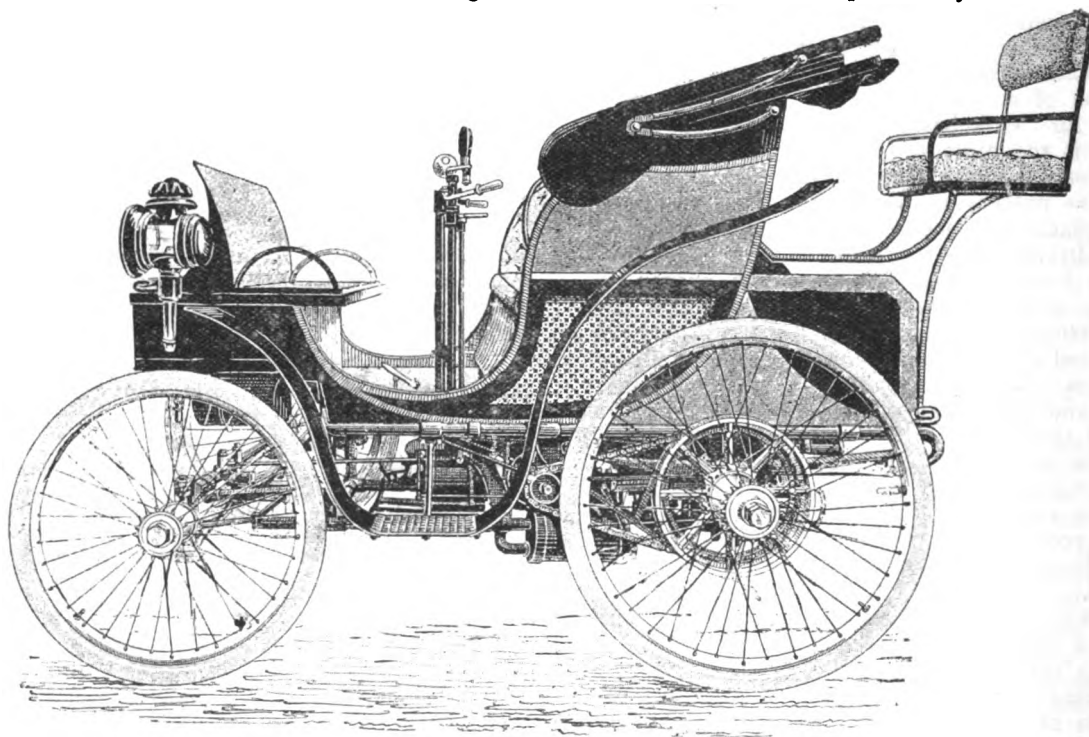


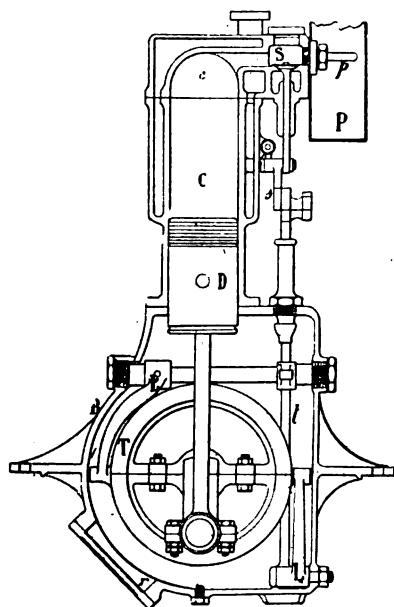
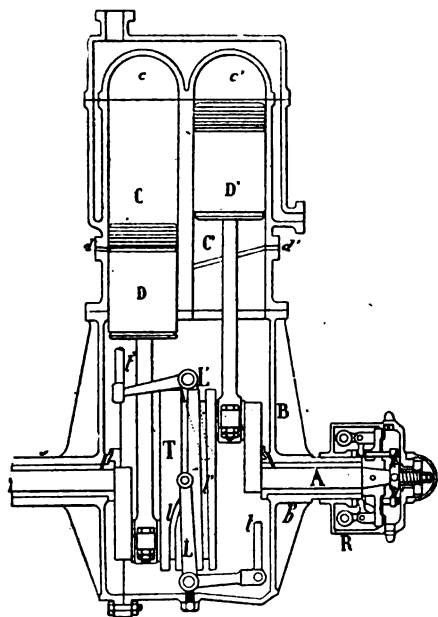
FIG. 2.—THE ROCHET MOTOR-CARRIAGE WITH 6-H.P. ROSSEL PETROLEUM-SPIRIT MOTOR.

gives a section of one of the latest Rossel carriages—a 4-seated *vis-à-vis*—and Fig. 2 a general view of a Rochet carriage with 6-h.p. Rossel motor.

levers *L L'*, the latter terminating in rollers, which run on the cam grooves *l l'* in the disc *T* above mentioned. The rod of the exhaust valve is not directly connected to the rod *t*, but

terminates in an oscillating arm *s*, which rises or falls with the rod *t*. The crank shaft is provided with a centrifugal governor *R*, which is so connected with the rod *t* as to cause it to miss the oscillating arm *s* when the speed of the motor becomes excessive. The ignition is effected by an incandescent tube *p* and an external lamp *P*. The upper portion of the cylinder is water-jacketed, while the cranks and crank-shaft run in a dust-proof oil-containing casing *B*.

The body, motor, and transmission mechanism are mounted on a frame built up of steel tubes, these tubes being used for circulating the water employed for the cooling of the motor-cylinders. Four forward speeds, ranging from five up



FIGS. 3 AND 4.—THE ROSSET PETROLEUM-SPIRIT MOTOR.  
SECTIONAL ELEVATIONS.

to thirty kilometres per hour, and one backward motion, are provided. The motor-shaft is arranged lengthwise with the vehicle; in line with it, and connected with it through the friction clutch *E*, is an additional shaft which carries at its end, in the oil-containing gear-box *B* (Fig. 1), a spur-wheel *F* (Fig. 5). At the side of this wheel, running loosely on the motor-shaft, is a disc *P*, which on one face has projecting from it five short spindles, on which are mounted spur-wheels *G*, *H*, *M*, *N* and *O*. The first four of these, while being each of a different diameter to give the necessary variation in speed, are continually in gear with the wheel *F* on the end of

the motor-shaft. The four wheels *G*, *H*, *M*, *N*, each have rigidly connected to one of their sides small spur-wheels *I*, *J*, *K*, *L*. Under the action of a lever, the disc can be rolled round the wheel *F* until any one of these small spur-wheels can be brought into gear with the spur-wheel *Q* on an intermediary shaft parallel with the motor-shaft. In this way any one of the four speeds can be quickly put in gear; for the backward motion, the spur-wheel *O*, driven through the train of wheels *F* *G* *K*, is brought into gear with *Q*. From the intermediary the power is transmitted through the bevel wheel *R* to a similar bevel wheel *S* on the differential *C* (Figs. 1 and 5), and from the latter to the rear road-wheels through chain gear. All the levers, including

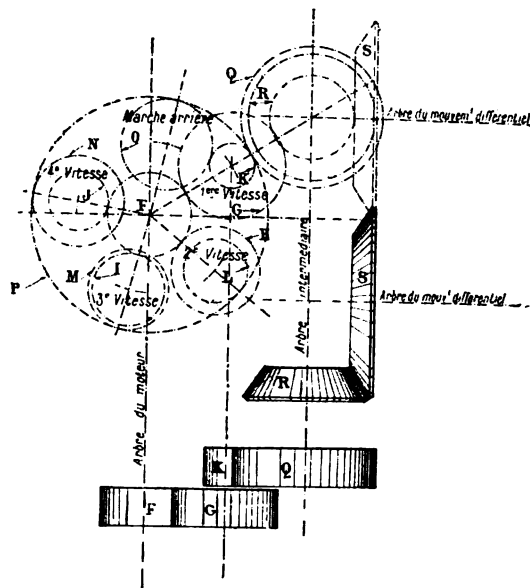


FIG. 5.—DIAGRAMMATIC VIEW OF THE ROSSET VARIABLE SPEED GEAR.

the one controlling brake shoes on the rear road-wheels, are arranged on the steering pillar. A band-brake *C*, worked by a foot pedal *Z* (Fig. 1), is also provided on the differential shaft. The wheels are of the cycle type, with solid rubber or pneumatic tires. The vehicle, as will be seen from the illustration, is built on graceful lines, and, with the motor provided, it is claimed to be able to mount gradients of 12 per cent. with ease.

As already mentioned, M. Rosset has disposed of the French rights in his motor and motor-carriage to a Paris company, and is, we understand, desirous of entering into negotiation for the sale of the English rights in the same.

THE New England Electric Vehicle Transportation Co. has made a beginning in its automobile business by putting five carriages in service in Boston, Mass.

THE Rubber Tire Co., 1,217 Market Street, Philadelphia, Pa., is introducing a new semi-pneumatic tire which they claim is well adapted to motor-carriages. It is called the Lattina Cellular Tire, and is composed of small interior air cells separated by strong walls of rubber, so that a puncture cannot, it is claimed, injure more than one or two of them.

MR. F. O. STANLEY, Newton, Mass., has issued a challenge for a motor-race to cover a distance of ten miles. Mr. Stanley will use the steam pacing machine, which it is stated recently covered a mile in 1 m. 47 s. The challenge has been accepted by the Waltham Mfg. Co., Waltham, Mass., agents for the De Dion motors in the United States.

THE Cleveland Machine Screw Co., of Cleveland, U.S.A., is preparing to enter into the extensive manufacture of electric motor-vehicles. The work is under the direction of Mr. E. E. Sperry, of Cleveland, who has become electrical engineer for the Company, and who is well known for his inventions in connection with electric tramways enterprises.



## A TWENTY-FOUR HOURS' MOTOR-TRICYCLE RIDE.



**M**R. J. W. STOCKS sends us the following account of a recent interesting ride he undertook, mounted on his motor-tricycle:—"On Wednesday evening, the 2nd inst., I started from Yardley at the fourth milestone from Birmingham at 6.15 p.m., with the idea of proving what really could be done in twenty-four hours on one of our standard pattern Ariel motor-tricycles. The course I chose was from Yardley to Barnet (94 miles), Barnet to Doncaster (150 miles), returning the same way—488 miles in all. I timed myself to reach Barnet at 10.55 p.m., or four hours and forty minutes to cover the 94 miles. I was not far out in my calculation, as I arrived at Barnet at 11 p.m., or five minutes late. Between Barnet and Hitchin I unfortunately took the wrong way in the dark at Welwyn, and, finding myself on a strange road, had to alight at each turn to interrogate the signposts. Instead of arriving at Hitchin at midnight, it was about 1 a.m. (losing my way and going about two miles farther round lost me an hour). I made a hurried meal, recharged with petrol and lubricating oil, and set out again for Doncaster, which I reached at 7.40 a.m., instead of 5.55 according to my time-table. The delay was occasioned in the first instance by losing my way, and the intense darkness between 11 p.m. and 2.30 a.m.; and a few miles before I reached Retford my inlet valve pin worked out and allowed the valve to fall on top of the exhaust. It was some time (about twenty-five minutes) before I could get this right, as the seating was too hot to remove, and I had to wait until it cooled somewhat to fit a new one. I covered 221 miles in the first twelve hours. From 3.30 a.m. (when I could see the milestones) I covered 152 miles in 7 h. 25 m., including the repair to inlet valve, and short stop to feed myself and recharge the motor. I reached Barnet at 3 p.m., having covered 396 miles in 20½ h. I then turned my machine towards home, and had covered another 25 miles when I had another twenty minutes 'conversation' with my inlet valve, probably through my previous repair being not as successful as it might have been under less hurried circumstances; and upon reaching Stony Stratford (38 miles from Barnet) at 5.15 p.m., had to again interview the inlet valve, and found that the continuous lifting of same had caused a fracture in the metal, and broken off a piece of the stem. Since my ride I find that I took an old pattern inlet valve with me, and the chances of breaking in this direction have now been obviated by making them differently. As I had not another spare valve with me, I was compelled to finish at twenty-three hours, having ridden 434 miles in that time. My tricycle was fitted with standard gear, which is capable of taking the tricycle along at the rate of 24 miles an hour, ordinary hills making very little difference in speed. My average speed was 19 miles an hour, so that, including stoppages, easing for horses through villages, etc., I drove the tricycle at full speed for twenty-three hours continuously. My engine worked as well during the heat of the day and right up to the end of the twenty-third hour as it did during the first cool hours of the evening. I only used one motor-tricycle the whole way, was unaccompanied, and only made arrangements for food and petrol at Hitchin and Doncaster."



An automobile club has just been formed at Salon, France.

A CORRESPONDENT of a Bedford paper, who styles himself "Rusticus," does not look upon the motor-vehicles in Bedford with approval simply because he is the owner of a pony which is, on this point at least, of the same mind as himself. As a consequence, he feels he should say something against motor-cars, and relieves his mind by referring to them as "horrible inventions," "abominations," "steam bogeys," etc.

## CORRESPONDENCE.



### SOME OUTSIDE SUGGESTIONS AND REMARKS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When will some one make a start in establishing accumulator-charging stations at points on our main roads, so that electric cars with an interchangeable set of batteries may become general? Accommodation should also be provided at the charging station for housing cars. This appears to me to be what is required for the million. The charging station should be able to supply power for many other purposes, and thus ensure a financial success.

I was trying to explain to mine host at a country-side inn the other day the progress of the motor-car industry and the wonderful increase in the number of vehicles, when I got for reply, "Oh, those things will only be a nine days' fad: horse-flesh will never be superseded—it cannot be dispensed with." It is very hard to convince people who have an interest in any matter or calling that it may be superseded, and such replies as this are an everyday experience.

Over 500 horse-drawn vehicles passed my house near Epping Forest on Bank Holiday; quite 200 of these were brakes full of pleasure seekers. Here is a gold-mine in the future for steam brakes.

I notice in the daily papers some foreigner has stated that England is selling only the old and useless patterns of motor-cars from France and Germany. If I am any judge of my countrymen, in the future, when France, Germany, and Belgium want a reliable car they will send to England when our engineers have taken the matter up. It is probable that in the future the motor-car industry will absorb as much capital as the railways have done.

Leytonstone,

August 9th, 1899.

Yours faithfully,

OBSERVER.

### AN UNNECESSARY INDIGNITY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—You will say I am only taking advantage of our national liability to grumble in writing you on the above subject, but I cannot repress myself. It is bad enough that automobilists should be at the mercy of every policeman who cares to raise his little finger; but their position when appearing at the police-court is even worse. I was a witness in a recent case in a London police-court and got there early in the morning, having to wait in the corridor with a miscellaneous collection of dirty bodies clothed in ragged raiment and in an atmosphere that was full of vile odours. Hardly a face around did not bear evidence of recent conflict, and black eyes were as plentiful as blackberries in their season.

Inside the court was not much better; and does it not seem intolerable that gentlemen of position should have to assemble with the usual characters who frequent police courts? Cannot our magistrates recognise the difference between a "drunk and disorderly" and an attack of automobiliousness on the part of a constable which leads him to summon people to such offensive places?

I enclose my card and remain, Yours truly,

Westminster, S.W.

A GENTLEMAN.

[We quite agree with our correspondent as to the unpleasantness of the position, having recently been in attendance at the West London Police-Court in a similar capacity—that of witness.—EDITOR M.C.J.]

### ON THE ROAD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There is a growing disposition, I believe, in the ranks of automobilists to take up a less unfriendly attitude than of yore to racing, and I do not think we shall ever have the cars universal until trials of pace have been made to enable manufacturers to gain the experience which is impossible under the present circumstances. At the same time I would abhor the man who indulged in reckless speeds

regardless of men or sheep in his path; and your interview with Mr. Arthur Goodwin seems to suggest the very thing required to popularise the motor-car, and also to demonstrate to the British public that it is capable of reliable and satisfactory travel.

His ride of 4,700 miles on business shows that we have got beyond the days of experiment, and if half a dozen other commercial travellers could be prevailed upon to conduct their journeys by similar means a great impetus would be given to the industry. For a motor vehicle—whether tricycle or car—to behave as well as the machine he rode shows that there should be no difficulty in the matter, and after a season or two the commercial travellers in many trades would leave the rail and take to the road.

Cycle manufacturers and motor-car makers, too, can render good service by encouraging the use of motor-tricycles by their representatives when on their business journeys, and if they are wise they will take the hint, and then rides of 4,700 miles will become commonplace performances—thanks to the new industry that is being developed in this country.

Manchester,

Yours truly,

August 9th, 1899.

A. F. PICKUP.

We might mention that the patent "Buffoline" noiseless gear wheels were used by the Leyland wagon at the Liverpool trials, considerably reducing the vibration and noise.

MR. J. H. PATERSON, manager of the Caledonian Motor-Car and Cycle Company, Aberdeen, has sold, on behalf of the Company, their Daimler-Rougemont motor-wagonette. The purchaser is Dr. G. R. Wilson, Edinburgh.

A TELEGRAM from Havre reports that a serious collision took place between a market gardener's cart and a motor-car belonging to M. Desfosses, who is staying at Etretat. The latter was completely overturned by the collision, and four gentlemen who were riding upon it were severely injured.

THE committee of the French Automobile Club are reported to be busily engaged in arranging for another great motor-car race to be held next summer. It is probable that this race will be from Paris to St. Petersburg, although this is not yet positively settled. A couple of experts have been sent on motor-cars to study the roads and make a report on the conditions which would have to be met. Some enthusiasts have suggested a race to Constantinople, while others would like to organize a race to Vienna and back.

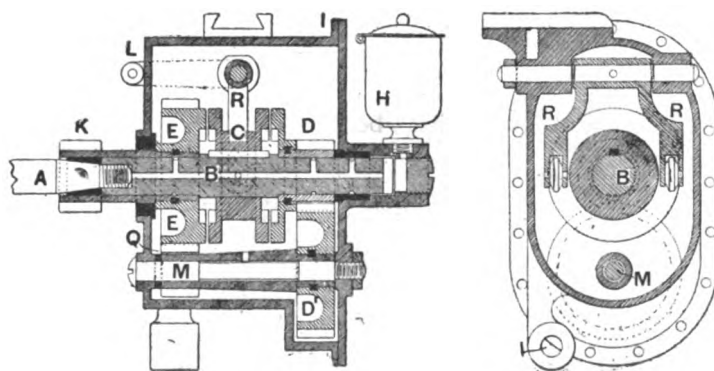
A COMPANY under the title of the Newcastle and District Motor-Car Co., Ltd., has been formed with a capital of £10,000 for the purpose of carrying on the business of motor-car proprietors. It is proposed to run cars to Heaton and Byker, Scotswood, Gosforth, Gateshead, Low Fell, and also on holidays and other occasions to Ponteland, Stannington and Morpeth, and between Tynemouth and Whitley. The following gentlemen form the directorate: Messrs. Jacob Daglish, W. E. Slater, Fred. G. Scott, Thos. W. Rowe, and John Duncan; and Mr. J. A. Williamson, St. Nicholas' Chambers, Newcastle, is acting as secretary.

THE Riker Electrical Vehicle Co., of Brooklyn, N.Y., U.S.A., have sent us particulars of a new electrical "run-about" they have lately put on the market. The vehicle, which has seating accommodation for two persons, has a wheel base of 4 ft. 2 in. Two electro-motors of  $\frac{3}{4}$  kilowatt capacity each are provided, connected to the rear axle by spur gearing. The controller is arranged to give three forward speeds and two backward motions, the maximum speed being about 10 miles per hour. The battery of accumulators is stated to be of a capacity sufficient for a run of 25 miles. The wheels are of the cycle type, shod with pneumatic tires. The weight of the car complete is about 1,300 lb.

## THE METZ VARIABLE SPEED-GEAR FOR MOTOR-CARS AND CYCLES.

—88—

ONE of the latest two-speed gears to come under our notice is that which has lately been introduced by M. R. de Metz of 11 Rue Cogniet, Paris, and of which details are shown in Figs. 1 and 2 herewith. The gear, which is claimed to be not only adaptable to motor-tricycles but also to light motor-cars, is mounted on an extension of the motor-shaft. Referring to the illustrations, *A* is the motor-shaft; to the end of it is screwed a second shaft *B*. Keyed on the centre of the latter in such a way that while rotating with it it is free to be displaced laterally is a double clutch *C*. On each side of the clutch spur wheels *E* and *D* are mounted, the wheel *D* running loosely on the shaft *B*, while *E* is rigidly keyed on a hollow shaft surrounding *B*, and carrying on its end the driving pinion *K*. Each of the spur wheels *D* and *E* is of a special type, having formed on their inner faces what may be termed female portions of the clutch *C*. Parallel to and below the shaft *B* is a second shaft *M*, which carries two pinions *D'* and *Q*,



FIGS 1 AND 2.

both rigidly keyed on the shaft and gearing with the spur wheels *E* and *D* on the shaft *B*. The clutch *C* is controlled by the double-armed levers *R* and *L*.

As regards the working of the gear, if the lever is pulled over so as to bring the clutch *C* in gear with the wheel *E* on the hollow shaft, the pinion *K* is driven at the same speed as the motor. When a low speed is desired, the clutch *C* is pulled over to the right so as to gear with the pinion *D*, the power of the motor being then transmitted through the clutch *C*, and the wheels *D*, *D'* and *Q* to the wheel *E* and pinion *K*, the latter being consequently driven at a lower speed than that at which the motor is running. It will be noticed that, whichever speed is in gear, the pinions *M*, *D*, and *D'* are continually running, although doing no useful work when the clutch *C* is gearing with *E*. The clutch is also so arranged that it can be fixed in a central position, so putting the motor entirely out of gear with the power-transmission mechanism. The whole of the gear works in a dust-proof case *I*, while special provision is made for the lubrication of the various moving parts by means of the lubricator *H* and the channels formed in the shaft *B*. It is claimed that the gear can readily be fitted to existing cars and cycles, and that, by reason of the fact that the whole of the pinions are always in motion, the change from one speed to the other can be made both quickly and noiselessly. We are indebted to *La Locomotion Automobile* for the illustrations.

So far as the motor-'bus is concerned, Dover has shown a better public spirit than seems to animate some of the people of Bournemouth, and the Pioneer motor-'bus now running between Dover and St. Margaret's should demonstrate the commercial possibilities of the new means of locomotion. Mr. J. J. Bettridge is secretary of the local motor-'bus company.

## THE RUMPF PETROLEUM-SPIRIT MOTOR-CARRIAGE.

THE accompanying illustration shows a new type of petroleum-spirit motor-carriage which has been lately introduced by the La Société Le Progrès Industriel of 26 Rue de l'Echiquier, Paris. The car, which has been built to the designs of M. H. Rumpf, is of small proportions, the object of the designer being to produce a vehicle which, while having the power and rigidity of the larger class, is lighter and more stable than the latter. The motor has two balanced cylinders, and gives, it is claimed,  $6\frac{1}{2}$  h.p. on the brake. The ignition is electrical, while the cooling of the cylinders is effected by means of a water-jacket. The engine is located in the fore-part of the frame, the front seat being



readily removable to give access to the working parts. Four forward speeds—8, 16, 28 and 45 kilometres per hour—and one backward motion are provided, all being controlled by a single lever within convenient reach of the driver. The motor and transmission gear occupy relatively a very small compass, and are entirely enclosed by the body of the car. Band brakes acting on the hubs of the rear road wheels and controlled by a hand lever are provided, while a third band brake actuated by a foot pedal is fitted round the differential gear. Wheel steering is adopted, the road wheel having wood spokes and pneumatic tires. The petrol storage tank is said to have a capacity sufficient for a continuous run of fifteen hours.

A COMPANY has just been formed in Paris (33 Rue de Toul) with a capital of £4,000 to be known as La Société des Moteurs et Voitures "Aigle."

MANITOWOC, WIS., U.S.A. will shortly, probably, have an automobile-stage line, the Manitowoc Traction Co. having been organized for the purpose. It is said that the Company has placed an order for four motor passenger coaches. Two will be used for transportation of passengers about the town, one will be run between Manitowoc and Two Rivers, and the fourth will run between English and Silver Lakes and Manitowoc.

## HIGHER POWER FOR MOTOR-CARS.\*

THERE is one feature connected with the automobile which, for the good of the business, should be continually dinned into the ears of the public, viz.: high power. It is so common to associate a single horse or at most a team with the ordinary vehicle that we cannot help connecting the idea of one or two horse power with a motor vehicle. This is not a mistake made only by the uninformed and the thoughtless, but it extends even to our best engineers. It is aggravated further by the fact that the public demands better and faster service of the mechanical vehicle than it can get from the horse vehicle, and this increased demand necessitates a much larger power.

Street railway engineers have been through this experience for ten years or more and are still putting on heavier motors. True they are increasing the sizes of their cars, but on cars of the same size much higher powers are used to meet the demands of the public.

The experience of vehicle users abroad is very clearly in this same direction. Higher power, lighter weight and faster speeds are all being demanded.

The writer, like everybody else, knew the difference between a horse and a mechanical motor, and made in his early motors what seemed to be sufficient allowance therefor. The common result was found and larger motors used, only to be replaced again with still larger, until to-day he is using a 6-h.p. motor in a 700-lb. vehicle, and does not find it too large or too powerful for many of the conditions which confront it on bad roads or in bad weather.

It is quite probable that still higher powers will be found advisable, if the experience of the French be regarded. Where they formerly had 2, 3 and 4 h.p. they are now using 4, 6, 8 and even more, and when it is remembered that their roads are hard and smooth it can easily be seen that our powers must be heavier.

While it is possible to build a vehicle and equip it with low gear so that a light motor will probably run at a low speed, it is not satisfactory nor saleable. The experience of a motor-vehicle user not long ago fits the case nicely. He said: "When I first received my vehicle it would do about eight miles per hour and I was immensely pleased. This speed was better than the horse could average and the motor never tired. The satisfaction, however, was short until more speed was desired. By re-boring the cylinder and changing the gears I manage to coax out sixteen miles per hour under good conditions now, but I wish it was thirty-five." This last wish was expressed with a heartiness which only a man who has enjoyed the pleasure of skimming over a good road, through a beautiful country, can appreciate.

When asked if thirty-five was not stretching the matter a little he replied: "Not at all. When one sees several miles of clean road ahead he enjoys shooting it at the highest speed possible"—and this is undoubtedly true. It is a great satisfaction to have ample speed on a stretch of fine road or in a brush with your neighbour's fast trotter.

It is easy to lose one-half your love for the machine if every horseman who comes along can pass you with a smile of derision. It is also very aggravating to find a bit of mud or a steep hill barring your way and forcing you to turn back. You are constantly haunted by the feeling that the road beyond that hill would have been fine if you had only been able to get to it.

The facts to keep in mind, then, are twofold: first, that the horse can exert several horse power for a short time; and second, that the motor is expected to give much better than horse service. On this account a motor, to do the work of a single horse satisfactorily, should be 3 or 4 h.p., and to do the work of a team 6 or 8 h.p. With such power and proper vehicle construction the motor-vehicle can traverse horse roads, and where they are at all good will give better speed than is possible with horses.

\*By Chas. E. Duryea, in *The Horseless Age*.

## MOTOR-CYCLE RACING.

### THE CRYSTAL PALACE.

In ideal weather a series of very successful motor-cycle races organised by the Motor-Car Club was held at the Crystal Palace on Monday last, when the Bank Holiday crowd was treated to some excellent racing, in which Mr. S. F. Edge figured prominently, retaining his holdership of the Crystal Palace Brassard Cup. Mr. F. F. Wellington was the judge, Mr. G. P. Coleman and Mr. F. W. Bailey the timekeepers, and Mr. Frank Smith the starter, the results being as follows:—

Motor-Cycle Handicap (two miles).—C. Jarrott, scratch (De Dion tricycle), 1; S. F. Edge, scratch (De Dion tricycle), 2; C. G. Wridgway, scratch (Phébus tricycle), 3; J. W. Stocks, 200 yards start, 0; E. Buck, 540, 0; F. Eason, 670, 0. Won by half a length, the same distance dividing second and third. Time, 3 m. 23 s.

Motor-Cycle Race (five miles handicap).—S. F. Edge, scratch, 1; C. G. Wridgway, scratch, 2; C. Jarrott, scratch, 3; J. W. Stocks, 35 s. start, 0; E. Buck, 80 s., 0; F. Eason, 125 s. 0. After going three and a half miles Edge went right away and won easily by 100 yards. Time, 8 m. 28½ s.

Motor-Cycle Race (ten-mile scratch).—S. F. Edge, 1; C. G. Wridgway, 2; J. W. Stocks (Ariel tricycle), 3. C. Jarrott retired at three miles. Edge led for the first two miles, and after Wridgway had made an effort for the lead at four miles Edge again went away and won by nearly half a lap, Stocks being half a lap further off.

| Miles. | Leader.           | Time.        |
|--------|-------------------|--------------|
| 1 ..   | S. F. Edge ..     | 1 m. 47½ s.  |
| 2 ..   | S. F. Edge ..     | 3 m. 25½ s.  |
| 3 ..   | C. G. Wridgway .. | 5 m. 2½ s.   |
| 4 ..   | S. F. Edge ..     | 6 m. 42½ s.  |
| 5 ..   | S. F. Edge ..     | 8 m. 23 s.   |
| 6 ..   | S. F. Edge ..     | 10 m. 8½ s.  |
| 7 ..   | S. F. Edge ..     | 11 m. 58½ s. |
| 8 ..   | S. F. Edge ..     | 13 m. 42 s.  |
| 9 ..   | S. F. Edge ..     | 15 m. 24½ s. |
| 10 ..  | S. F. Edge ..     | 17 m. 11½ s. |
| 10 ..  | C. G. Wridgway .. | 17 m. 33½ s. |
| 10 ..  | J. W. Stocks ..   | 18 m. 24½ s. |

Crystal Palace Brassard Cup (value 100 gs.); duration, one hour.—S. F. Edge (holder), 1; C. Jarrott, 2; J. W. Stocks, 3; C. G. Wridgway, retired. After the first mile was completed it was a match between Edge and Jarrott, Edge eventually winning by a straight, after covering 35 miles 1,026 yards in the hour.

| Miles.        | Leader.     | Time.        |
|---------------|-------------|--------------|
| 1 ..          | Wridgway .. | 1 m. 50½ s.  |
| 5 ..          | Jarrott ..  | 8 m. 34½ s.  |
| 10 ..         | Edge ..     | 17 m. 7½ s.  |
| 15 ..         | Edge ..     | 25 m. 29½ s. |
| 20 ..         | Jarrott ..  | 33 m. 57½ s. |
| 25 ..         | Jarrott ..  | 42 m. 39½ s. |
| 30 ..         | Edge ..     | 50 m. 52 s.  |
| 35 ..         | Edge ..     | 59 m. 0½ s.  |
| 35 1,026 yds. | Edge ..     | 60 m. 0 s.   |

### HARROGATE.

At the North of England Cyclists' Meet at Harrogate on Monday there was a two-miles motor-tricycle handicap, resulting as follows: 1, A. Farnell (Bradford), 1½-h.p. De Dion (½ lap); 2, R. R. Jackson (Bradford), 2-h.p. auto (scratch); 3, R. Blacklock (Sunderland), 1½-h.p. De Dion (1 lap). The other competitors were Rowland Winn (Leeds), 2-h.p. auto (scratch), and F. Turvey (Sunderland), 1½-h.p. De Dion (½ lap). Time, 5 m. 2½ s. Farnell won very easily, and Blacklock lay a considerable distance behind Jackson.

## THE AUTOMOBILE COMPANY BOOM IN AMERICA.

For some months past practically each and every American mail has brought with it the news of the formation of a new motor-car company in the United States, with capitals very often running into seven figures. Some of the big companies, with their authorised capital, recently incorporated in America, are:—

|  |                      |
|--|----------------------|
| The Automobile Company of America .. .. .                        | \$5,000,000          |
| The International Vehicle Company of New York .. .. .            | 5,000,000            |
| The Chicago Electric Vehicle Company .. .. .                     | 2,000,000            |
| The Woods Motor-Vehicle Company of Chicago .. .. .               | 10,000,000           |
| The Wite Motor-Wagon Company .. .. .                             | 10,000,000           |
| The Lewis Motor-Vehicle Company .. .. .                          | 10,000,000           |
| The Columbia Automobile Company .. .. .                          | 3,000,000            |
| The Illinois Electric Vehicle and Transportation Company .. .. . | 25,000,000           |
| The New England Electric Vehicle and Transportation Co. .. .. .  | 25,000,000           |
| The New York Electric Vehicle and Transportation Company .. .. . | 25,000,000           |
| The Pennsylvania Electric Vehicle Company .. .. .                | 6,000,000            |
| The General Carriage Company of New Jersey .. .. .               | 20,000,000           |
| The Canada Lewis Motor-Vehicle Company .. .. .                   | 1,000,000            |
| The National Bicycle and Motor Company .. .. .                   | 2,500,000            |
| The Riker Electric Vehicle Company .. .. .                       | 7,000,000            |
| The Leads Motor-Vehicle Company .. .. .                          | 5,000,000            |
|  | <b>\$161,500,000</b> |

In addition sixteen companies have been incorporated for \$100,000 each by the so-called Electric Vehicle Syndicate, to operate in Tennessee, Georgia, Ohio, Kentucky, New Jersey, Louisiana, Delaware, California, Michigan, Minnesota, Iowa, Maryland, Wisconsin, Indiana, Missouri, and Virginia.

## A BLACKPOOL MOTOR-CAR COMPANY.

An action was brought by John Stephen Barrow, accountant, of Albion Street, Leeds, against W. Reid Ballantyne, of the Roost, Lytham, for the recovery of £75, money alleged to be due. Mr. Waugh was for the plaintiff, and Mr. Manisty for the defendant.

It appeared that in 1897 a company was floated called the Blackpool Motor-Car Company, and defendant's name appeared on the prospectus. Defendant applied for 100 £1 shares, for which he paid £12 10s., the amount due on application. In August, 1897, the directors decided that the Company should go to allotment, and that on allotment a call should be made of 2s. 6d. per share, and subsequently defendant paid another £12 10s., being the amount due on allotment. The Company went into liquidation, and the plaintiff, being appointed liquidator, now sought to recover £75, the amount still owing on the 100 £1 shares.

Defendant denied the allotment of the shares to him, and denied that he accepted them. He stated that he had never received any notice of allotment or of calls.

A verdict was given for the plaintiff for the amount claimed.

## MOTOR-PACING ON THE PUBLIC HIGHWAY.

At the Kingston County Bench last week Mr. D. M. Weigel, of Notting Hill, was summoned for furiously driving a motor-tricycle to the common danger in Ditton Road, Tolworth, on July 9th. Inspector West said the defendant was pacing a cyclist who was riding behind in a cloud of dust at the rate of twenty miles per hour. It was in consequence of numerous complaints about motors that the proceedings were taken. Defendant, who did not appear, was fined £5 and costs.

## AN EXPERIMENTAL MOTOR-CAR.

At the West Riding Assizes at Leeds last week, before Mr. Justice Grantham, Thomas Myers, engineer, of Halifax, brought an action to recover £126, arrears of salary, from Albert Edward Harrison, engineer, also of Halifax. There was a counter-claim for £2,393, made up of expenses incurred by the plaintiff while in defendant's employ for machinery and so forth, all of which was wholly unsuited to defendant's purpose now, and £75 for money lent privately. Mr. E. Tindal Atkinson, Q.C., and Mr. Yarborough Anderson were for the plaintiff, and Mr. Scott Fox, Q.C., and Mr. G. P. Walker were for defendant.

Plaintiff was engaged in March of last year as manager of a motor department started by defendant, and undertook to produce a specimen oil motor-car, free from smell and noise, equal to any other in the market. During the time he was in defendant's employ it was arranged that plaintiff should receive £7 10s. per week, and an additional £2 10s. per week for all the time he was employed by defendant, providing the motor-car was approved. Plaintiff contended that he built a motor-car in accordance with his agreement with the defendant, but the latter denied this, stating that he had never approved of it, and that it was, in fact, a complete failure. Plaintiff's claim was made up of 10s. arrears of salary on the £7 10s. per week, and the additional £2 10s. already alluded to. Plaintiff was summarily discharged by defendant on April 28th, 1899, owing, as the latter said, to his incompetency, and he claimed damages for wrongful dismissal.

Plaintiff, in reply to his Lordship, said the car he made was purely an experimental one. Its power was 2-horse, but it was usual, in the case of a two-passenger light car, to have 3½ h.p. He was to have had £10 per week from defendant, only after the car had been approved, and he received that amount when he left York and went and worked for defendant at Halifax.

The defendant stated in evidence that the plaintiff left no doubt in his mind that he would produce a car that would be acceptable to intending purchasers. The car that plaintiff built was tried by defendant himself and some gentlemen interested in the undertaking, and proved a failure. It would not run up and over an incline of 1 in 35. They had to get out, take it back, and give it a flying start, by means of which it just managed to crawl over the summit of the rise. There was considerable noise about it, and it was by no means free from smell. Early in the present year the workshop was removed from York to Halifax, where the plaintiff commenced to construct another car. Defendant gave him a fortnight, and told him that if the vehicle was not then ready he would be discharged. When the fortnight had elapsed, the parts of the car were still lying about the workshop, and the plaintiff was accordingly dismissed.

The jury, at the conclusion of defendant's evidence, intimated that they were satisfied the plaintiff did not construct a practical two-passenger heavy or light motor-vehicle, as per agreement.

His Lordship concurred.

A verdict was accordingly returned for the defendant on the claim, and also on the counter-claim, the jury awarding him £75, representing loans made to the plaintiff and admitted by him.

## TROUBLE AT LEICESTER.

At the Loughborough Petty Sessions last week Henry Cann, driver, of Rutland Street, Leicester, was summoned for an infringement of the Light Locomotives Act, at Rothley, on July 22nd. Mr. Wilfred Moss appeared for the defendant. The police authorities prosecuted, and Elijah Cox, omnibus proprietor, of Mountsorrell, was the informant. The facts, as detailed in evidence, were that the defendant was the driver of a motor-car running between Leicester and Mountsorrel. On the date named Cox was driving his omnibus in the opposite direction, and made a signal for the driver of the motor-car to stop. The signal was not heeded, hence the summons. The omnibus driver said his horses became restive at the approach of the motor-car. For the defence Cann was sworn, and said there was no necessity to stop. Cox's horses were not restive. Witness pulled up when requested. The practice in driving a motor-car was to stop on seeing a restive horse, but otherwise they only slowed down on being signalled to. By Mr. Moss: Cox had frequently stopped the car wantonly, and his passengers had jeered at the motor as it passed. The car had been running from Leicester since April 19th. George Sampson, motor-car engineer, of Leicester, and Fredk. S. Rudkin also gave evidence for the defendant, Rudkin stating that he had formerly been in Cox's employ, and whilst driving the 'bus had instructions to always hold up the whip to stop the motor-car on meeting it. The Bench decided to convict, and imposed a fine of £2, costs included, or in default fourteen days hard labour.

## MR. A. O. STOPES AND HIS MOTOR-CAR.

At Bedford County Court, before his Honour Judge Bagshawe, Arthur Edward Banks, farmer, of Muggerhanger, sued Arthur Othniel Stopes, of East Hill, Colchester, to recover damages for personal injuries and injuries to his horse and trap by reason of the defendant's alleged negligent driving of a motor-car. The plaintiff stated that on Saturday, March 11th, he was driving home from Bedford in his horse and trap. While going through Fenlake he saw a motor-car coming in the opposite direction. It was travelling at a great speed, and he shouted and held up his hand. The car, however, did not stop, and there was no time for him to get out and hold his horse's head. The horse swerved to the side and collided with a fence. The cart was upset, and witness was thrown out. The body of the cart was smashed up and the axle was bent. The next day he met the defendant on his car, but the horse did not shy, as there was time to get out and hold the horse's head, the car travelling at a reasonable rate. In consequence of the accident it would not be safe to drive the horse again. He sold the horse about a month afterwards for £15. He considered he lost £5 upon that sale. He wrote to defendant asking for £10 to settle the affair, but as he got no reply, he brought the present action.—Thomas Dynas and John Buckle said they saw the motor-car travelling at the rate of sixteen miles an hour.

The defendant said the car was running at twelve miles an hour. He saw the plaintiff at a distance of 200 yards. He began to slacken speed immediately. He saw the plaintiff hold up his hand, and then he stopped within thirty-five yards. The accident happened directly afterwards. On the following day he was driving along the same road, when plaintiff had to drag his horse past the car. He had had two years' experience of motor-cars, and had driven that particular car over 2,000 miles. The car was at rest before he reached plaintiff, who drove up to him, and it was then that the horse shied.—Mr. Horace Wright, of Colchester, said he was riding with the defendant in the car on the day in question. He corroborated the defendant's evidence.—P.C. Gaylor said the trap upset at the spot where the car had stopped.—Judgment was entered for the plaintiff for the full amount, £15.

## A MIDNIGHT SCENE IN THE WEST END.

At Marlborough Street Police-Court last week Mr. Robert Moffat Ford, of 168 Shaftesbury Avenue, W.C., was charged before Mr. Fenwick with threatening to shoot Harry Patten, a cabman, of Ranelagh Road, Paddington. The cabman deposed that about midnight on Thursday he was driving along Shaftesbury Avenue with a fare in his cab when the prisoner, who was driving a motor-car, shot past him and crossed in front of his horse. He then jumped off his motor, caught hold of the horse's head, and said, "I want your number." He (the witness) jumped off his cab and said, "Leave go of the horse." Ford replied, "Leave go of me or I will put a bullet through you," and pulled something out of his pocket which the witness could not see. A policeman eventually arrived, and the accused was arrested.

Mr. Ford, who elected to give his version of the affair on oath, said he was driving his motor-car along Shaftesbury Avenue on the previous night, and there was plenty of room to pass between the cab-rank and any other vehicle. He blew his horn, and passed on the off-side as he should do, but the cab only squeezed him further and further into the cab-rank, and he touched the horse's legs as he passed. This kind of conduct on the part of cabmen having occurred to him regularly about once a month, he was determined to find out those who misbehaved themselves, and summon them. He took hold of the reins and stopped

the horse to get the cabman's number in order to summon him, when he was surrounded by a gang of cabmen and roughs. The cabman refused to give him his number, and he was in consequence kept there with the threatening crowd. It was only after he had been there about twenty minutes, having had a "very warm time" of it, that he became alarmed and pretended he had a pistol. In reality he had nothing of the kind in his possession. When the policeman arrived they all went to Vine Street police-station, he, after the cabman had stated his case, being detained there, spending a rather uncomfortable night in a police-cell. He considered he had a serious claim against either the cabman or the police.

Mr. Fenwick said it was clear there was no revolver, but something must be done to prevent these unseemly quarrels in the street, and the prisoner would be bound over in his own recognisances in the sum of £10 to keep the peace for six months.

## A MOTOR-CAR ACCIDENT.

At the Newcastle Police Court, last week, before Mr. G. Luckley (chairman) and Col. Adamson, Vincent Harvey was charged with negligently driving a motor-car in Blackett Street on July 16th so as to injure Felix Green. For the prosecution it was stated that Green, who was an old man, was walking along the crossing when a car overtook him and knocked him down, injuring his hip. No warning of the approach of the car was given. At the time of the accident the vehicle was going at the rate of six or seven miles per hour.

Colonel Adamson said the Bench were of opinion that although the defendant was not driving at an excessively high rate, yet that having regard to the fact that he was crossing a thoroughfare which was very much frequented by foot passengers, he had not exercised sufficient care. It was not, however, a serious case, and they considered it would be sufficiently met by imposing a fine of half-a-crown and costs. Defendant was also ordered to pay the witnesses' fees.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

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## COMMENTS.

### Popularising the Motor-Car.

THE Motor Touring Company, Ltd., of which Mr. T. Morrison is manager, has just struck out a new line, viz., that of running a motor-wagonette to places of interest in the neighbourhood of Birmingham. The vehicle has seat-

ing accommodation for fourteen passengers. With Stechford station as the starting point daily trips are being made this week—Sunday's run being to Stonebridge and Wednesday's to Sutton Coldfield. When in Wandsworth, S.W., the other day, too, we noticed that someone in that district is announcing short excursions on a seven-seated wagonette—a Daimler, we believe; last Saturday's run in this case being to Virginia Water and back. In both cases the fares are extremely low, and we trust that the enterprise of the organizers will be duly rewarded. The excursions offer a splendid opportunity to those who are still unacquainted with the pleasures of motoring.

### Raising the Speed Limit.

IN our last issue we mentioned that the trials of heavy motor-vehicles which are being conducted by the Automobile Club of Great Britain on behalf of the Local Government Board with the view of an increase in the limits of the speed of such vehicles weighing unladen over 1½ tons were to have taken place on Friday last, the 11th inst. We learn from the Secretary of the Automobile Club that circumstances arose which necessitated the postponement of the trials until to-day, the 18th inst. The experiments will probably take place before Major-General Phipps Carey (the Chief Engineer of the Local Government Board), two of the Board's Inspectors, and its Secretary.

### Police-Court Mixtures.

FROM the veracity of the constable and the confiding magistrate who believes everything that comes from the lips of those in the dark uniform, complaint seems to be veering to the police-court itself, and our correspondence columns of the last two weeks let light upon a matter that is undoubtedly an indignity and hardship. There is need for classification and discrimination in cases that come before the magistrates, and some distinction should be drawn between the man who gets drunk and knocks his neighbour about and the man who halts his motor-car on the suggestion of a policeman who fancies he can calculate the speed at which it is going. As the matter stands, a summons at a police-court necessitates the waste of a day, and very often the fine, if one is inflicted, is a very trivial one. Surely the business could be arranged so that these matters, which do not come under the category of criminal offences, could be disposed of early in the morning while the air of the court is comparatively pure, and the place then left wholly in the occupation of the class of people so graphically described by the gentleman who opened the discussion in our columns last week. At present the persons composing a police-court audience are offensively various—a veritable "mixture."

### English Car in a Continental Race.

THE Hon. John Scott Montagu, M.P., has entered his British-made Daimler car in the touring class in connection with the Paris to Ostend race. The Hon. C. S. Rolls, on his 8-h.p. Panhard, will also be a competitor; and a twin-motor Daimler car from this country will take part in the race. Britishers need more knowledge of such contests as have popularised the motor-car abroad, and the presence of a goodly number of English automobilists at such a gathering as that which will assemble in Ostend on the 1st prox. should lead to the inauguration of some useful and practical contests in this country. We hope the British motorists will achieve distinction in the forthcoming contest. Probably the advocates of Peace among the nations will welcome the entry of a British M.P. in a Continental race as the beginning of a series of contests between the legislators of different countries, all calculated to bring the leading men of Europe into personal social intercourse. "There's no telling what the motor-car may not do," as the Irishman said when he rose from the ditch and saw his vehicle waiting for him about a hundred yards off.

### Motor-Cars on Hire.

IN addition to the regular motor-car services which have been established in many populous localities there are several places where people can enjoy the novelty of being able to take short trips by motor. At Clevedon Mr. Stephens has introduced a motor-car for short trips in and about the town. It is of 3 h.p. and of his own design. At Gravesend Mr. Baxter of the Aerolyte Cycle Co., Harmer Street, Gravesend, has taken out a licence to work a motor-car on hire, the vehicle selected being a 3-h.p. Benz Ideal, and we understand the company intend shortly to obtain others for the convenience of private parties and local business firms. From Enfield Messrs. Olley & Co. almost daily organize excursions by their motor to places in the Eastern Counties, Cambridge and Yarmouth being particularly favourite towns with the people of Enfield. By going such long distances Messrs. Olley & Co. are doing good work in popularising the motor-car, and we hope the enterprise of Mr. Baxter at Gravesend will be similarly successful.

### Another Exhibition.

RECOGNISING the public interest in automobilism, the Royal Institute of Public Health is adding a motor-car section to the exhibition in connection with its forthcoming congress at Blackpool. We gladly welcome these subsidiary shows at such gatherings as educating the public, but they will prove of little value for really business purposes, as very rarely do they attract the class of people likely to become owners of cars. What is now most urgently wanted is a series of tests and trials systematically conducted in various parts of the country to demonstrate to business people the reliability of motor-vehicles. The trials from the Agricultural Hall through Hertfordshire, the recent important tests at Liverpool, and the suggested run from London to Edinburgh under the auspices of the Automobile Club are

means of proving the commercial character of the motor-car, and the multiplication of such contests properly arranged in every part of the country would give a great impetus to the industry. The public should not be taught to regard the automobile merely as a thing to look at but as a practical means of dealing with road traffic.

#### Motor-Vehicles and Railway Cartage.

MR. J. A. F. ASPINALL, the general manager of the Lancashire and Yorkshire Railway Company, is the first railway manager to practically consider the utility of motor-vehicles in connection with railway cartage work. We understand he intends to give the 6½-ton Thornycroft steam lorry and trailer which won a gold medal at the Liverpool trials a



SIR DAVID SALOMONS ON HIS DE DION TRICYCLE.

Photo by

G. Glenville, Tunbridge Wells.

full test in railway work, and should it prove as successful as other tests that have been made, interesting developments may be expected on other railways as well as the Lancashire and Yorkshire system.

#### Petroleum Spirit.

ACCORDING to the report of Mr. Alfred Spencer, the chief officer of the Public Control Department of the London County Council, the use of petroleum spirit in motor-cars does not appear to have developed to any great extent during the past year. The Council's officers have reported on about a dozen premises where petroleum spirit is kept for this purpose, under the Secretary of State's regulations, but in the absence of any obligation on the part of motor-car owners to notify the local authority when they are keeping petroleum spirit for use on motor-cars, it is difficult to estimate the extent to which petroleum spirit is at present used for this purpose. Any one who has observed the progress of the motor-car industry will smile on reading the statement as to the development in the use of petroleum-spirit in motor-cars. We are glad that the Secretary of State's regulations do not insist on owners of cars being worried into declarations, affidavits, etc., and the taking out of licences, for

there is a great difference between the storage of the spirit in large quantities for sale and the keeping of that required for use in one's own car.

#### Do Ladies Like Motoring?

BETWEEN the *Court Journal* and the *Daily Telegraph* who shall choose? The former declares that "in the few good English watering-places not yet given over to the summer tripper there are plenty of automobiles, and the fair sex has deserted bicycling for this easier means of progress through the country." On the other hand, the *Daily Telegraph* says that "ladies do not seem to take very enthusiastically to motor-cars as a means of getting about in these holiday times." Our own impression is that ladies are quite as much enamoured of motor-vehicles as the sterner sex, and the delights of a run through the country on a motor-car afford ample compensation for the dust, which, according to the *D.T.*, is a great objection on the part of the fair sex. But we do not wish to set our two contemporaries at loggerheads, and gladly recognise they are agreed that "the motor-carriage," to quote the *Court Journal*, "is making as much headway socially, in proportion to price, as the safety bicycle was accomplishing three years ago." This finds confirmation in the *Telegraph's* report of long tours on motor-cars by the Duke of Manchester, the Duke of Leeds, and the Earl of Carnarvon.

#### The Motor-Cabs of Paris.

THE decision of the Compagnie Générale des Voitures à Paris to remove the numbers from their cabs, which will therefore no longer ply for hire at the second class or ordinary *fiacre* rates, has been seized upon by our contemporary, the *Daily News*, as furnishing another proof of the triumph of the horse in the question of cost, and up to a point we must agree with the reasonings of our contemporary. Electricity, which at present is the most expensive method of the more generally used means of mechanical propulsion, undoubtedly costs more than horse-flesh where a limited number of vehicles are employed, but had the Paris Company been able to place upon the streets say fifty cabs, we feel sure that easier terms could have been made with the drivers, and so have enabled the Company to have secured a more satisfactory margin of profit than that hitherto obtained. The dead charges on fifty cabs would be but a very slight increase on those for twenty-five, and the money-earning capacity probably double. But the Company, in common with many other motor companies, was not in a position to work on the most economical basis, and accordingly the price charged the drivers did not enable them to profitably run the vehicle at ordinary fares. While not suggesting that petrol motors are entirely suitable for this class of work, we believe that from a commercial point of view they could be run infinitely more profitably than vehicles propelled by electricity at the present time, and at fares if anything lower than those in force for the second class *fiacres* of Paris.

#### Motor-Cars in Lowestoft.

WE have received from a lady correspondent, who styles herself "Miss Suburban Villa," an eulogistic account of the conveniences and pleasures experienced in motor-caring at Lowestoft. She states that the vehicles of the Lowestoft Motor-Car Co., of which Mr. H. C. Adams is secretary and manager and Mr. O'Driscoll the active agent in the town, supply visitors to the popular resorts of Lowestoft and Yarmouth with a ready means of enjoyment as well as a great convenience, owing to the somewhat scanty service of trains between those points. Further, that the vehicles are kept in the best possible condition, and that their speed with a load of eight persons leaves nothing to be desired. Mr. O'Driscoll, who, as it were, acts as chief traffic agent, is a well-known tradesman in Lowestoft, his establishment at the foot of the bridge leading to the South Shore being known to

everyone visiting Lowestoft. Mr. H. Adams is the son of a late Mayor of Lowestoft, and is also a well-known tradesman, and it appears that the service of cars is run on the same strict business lines that has proved successful in bringing these two gentlemen, together with others associated with them, to the "top of the tree" amongst the traders of Lowestoft. We wish the undertaking every success, which, indeed, appears assured, if the account of our correspondent is to be taken seriously. We understand that this Company is about to become the sole agents of the Motor Manufacturing Company, Ltd., of Holborn Viaduct, E.C., and Coventry, in Lowestoft and Beccles.

#### A New Car.

A NEW light motor-carriage is, we learn, in course of construction at the works of Messrs. James & Browne, engineers, Buckingham Palace Road, London, S.W. The vehicle is being provided with two 2-h.p. petroleum-

spirit motors, with water-jacket and electric ignition. A special feature of the motor is, we understand, the readiness with which the valves and other working parts can be removed. Two speeds are provided by means of chain gear and friction clutches, while a single central chain-drive will connect the counter-shaft with the rear road wheel axle. We hope to give a full description of the new vehicle as soon as it is completed.

#### The Trans-American Automobile Tour.

IT is apparent that the Trans-American trip of Mr. and Mrs. Davis in an automobile is not proving a glowing testimonial to the American vehicle. One of our American contemporaries, in commenting on the

trip, remarks: "Something is wrong with either Mr. Davis or his machine. His journey thus far has been a continuous chapter of mishaps and delays. It is doing the infant industry no good. If Davis can do no better he should be called off, and someone else sent over the route to regain the loss of prestige."

#### A Policeman Actually Mistaken!

WE commend to those provincial magistrates, particularly the "judicial" authorities at Guildford and Newcastle, who are inclined to place implicit faith in the speed-judging eye of the policeman, the report of the case at the West

London Police-court appearing in another column. The Hon. Charles Rolls, one of the most expert motorists in this country, and Mr. Hutton, have appeared before Mr. Rose charged with driving a motor-car at an alleged rate of 14 or 16 miles an hour. Not only did these gentlemen deny the speed, the former asserting that the car he was driving—a Columbia electric car, the property of Mr. Harmsworth—could not attain more than nine miles an hour, but Professor Vernon Boys and Mr. R. E. B. Crompton also gave technical evidence controverting the policeman's "imagination." It will appear strange to the average country magistrate that after such evidence the London magistrate was satisfied that the constable had been mistaken, and dismissed both summonses—although why he should not have allowed costs none but a magistrate can understand. His suggestion that "motor-cars seem to be associated with an optical delusion, as they appear to travel faster than they actually do," should be remembered by magistrates and policemen alike.

#### A "Paralysing" Car.

THE "effects of motor-cars on animal and human nature" is a subject we would suggest to the Royal Society for the Prevention of Cruelty to Animals and that which similarly deals with cruelty to children, as suitable for an

essay in their school competition of 1900. The former society annually invites pupils in elementary schools to write,

with prizes as an incitement, on topics which are calculated to encourage kindness to animals. Now, in the opinion of some people the motor-car is an abomination intended to alarm horses, frighten sheep, irritate cows, and seriously disturb the tranquility of nursemaids with perambulators conveying human freight. All that we know; but according to a resident of the Isle of Wight the automobile is not so dreadful after all, and a particular car owned by Mr. W. P. Bugslocke, of Ryde, has been going at "a pace enough to paralyse children," or, in other words, fix their attention—as was the case of the Ancient Mariner. That motor car should be encouraged, and its spirit-quelling character introduced into other vehicles, for hitherto only the shying, kicking, and running instincts of animals have been excited—or alleged to be excited—by motor-cars. A car that can paralyse children and also be adapted to similarly quieten vicious animals should not be lightly passed by. And we would suggest to the two anti-cruelty societies named the advisability of bringing it prominently before the public, either in the competitions we have mentioned or by some other means.

#### A Comparison of Accidents.

OUR French contemporary, *Le Vélo*, compiles month by month a most interesting and instructive table showing the total number of automobile accidents in France as compared with those resulting from the use of the noble

horse, and this comparison during last month emphasises more than ever the increase of safety which is secured by employing the automobile. The figures are more striking, perhaps, on account of the publicity given to all motor-car misadventures, while those relating to horse-drawn vehicles, if mentioned at all, are dismissed with the briefest of notices and entirely devoid of harrowing details. Here are the figures: Horse accidents in France during July, 848 (resulting in 78 deaths and 770 wounded); automobile accidents in France during July, 31 (resulting in 4 deaths, and 27 wounded). Granted that the horse-drawn vehicle outnumbers the automobile very considerably, still the comparison of figures is truly remarkable.

#### A Long-Distance Run by a Steam Lorry.

WE learn that Messrs. Clarkson and Capel's steam lorry, which left Liverpool on Tuesday afternoon last week with a load of crystal carbonate of soda from the Gaskell, Deacon's Works of the United Alkali Company, reached

London safely on Monday last. Considerable delay was experienced in obtaining water in the country at various points of the route, owing to the drought. The vehicle also stopped some hours at Meriden to take up an additional load of machinery. The car caused some excitement in Birmingham, where, in proceeding down the steep Bull Ring hill, the brakes proved insufficient to control the vehicle, which mounted the pavement and endeavored to make its way into a cycle dealer's shop—this being, however, the only serious incident of the journey. The trip was purely an experiment, as it has never been suggested that a motor-wagon—unless for goods adversely classed by the railway companies—is a commercial means of transit over so great a distance. The route followed was *via* Warrington, Sandbach, Cannock, Birmingham, Coventry, Daventry, Penny Stratford, and St. Albans, which is some forty miles longer than the direct road to London, and therefore makes the journey the longest on record for a laden motor-wagon.

THE Canadian Postmaster-General has decided to give the automobile a test in the work of collecting letters and in carrying mail to and from the general post-office in Toronto to the branches. A sum of money for the purpose has been provided for in the supplementary estimates, and within a short time automobiles will be purchased for use by the Toronto postal authorities.



## THE MORS CARRIAGE.—I.

By VELOX.



THE intention of the present series of articles is to give an exhaustive review of the motor, mechanism, and general details of the now well-known motor-vehicles manufactured by the Société de l'Electricité et Automobiles Mors, 48 Rue du Theatre, Grenelle, France, and vended in this country by the Automobile Association, Ltd., of Prince's

Road, Holland Park Avenue, London, W.

Peculiarly enough, although a large number of these vehicles have been sold in this country, there does not at present exist any general description of the vehicle, its motor

forms of vehicles equipped with the four-cylinder engine of these makers; for whatever the form of the body may be, the mechanical details remain unchanged.

Before proceeding to describe the various parts in detail, it will perhaps be better to briefly pass in review the general arrangement of the mechanism and equipment. The motor has four cylinders placed in pairs at an angle of  $45^\circ$ , each pair forming an angle of that degree with its fellow pair. This arrangement of the cylinders not only materially economises space, but permits the development of such a power in a given space as would be impossible were any other disposition of the cylinders followed. Besides economising room both in height and width, this arrangement permits of easy lubrication, and, indeed, these inclined cylinders possess all the advantages of vertical motors so far as perfection of lubrication is concerned. In engines having cylinders placed horizontally it is generally known that the uniform distribution of the lubricating agent is a matter of very considerable difficulty. By inclination of the cylinders in the Mors motor

1. Quantitative control of gaseous charge to cylinders.

2. Cock controlling spirit supply to carburettor.

3. Admission of air to carburettor.

4. Belt tension.

5. Lever for transferring belts from loose to fast pulleys.

6. Commutator switch.

7. Interruptor switch for cutting out current.

8. Cooler or condenser.

9. Brake lever.

10. Exhaust box.

11. Lever controlling "Devil" or "Sprag"

12. Axis of "Devil" or "Sprag" lever.

13. Pipe for circulating water.

14. Pedal controlling brake and connected to belt-shipping gear.

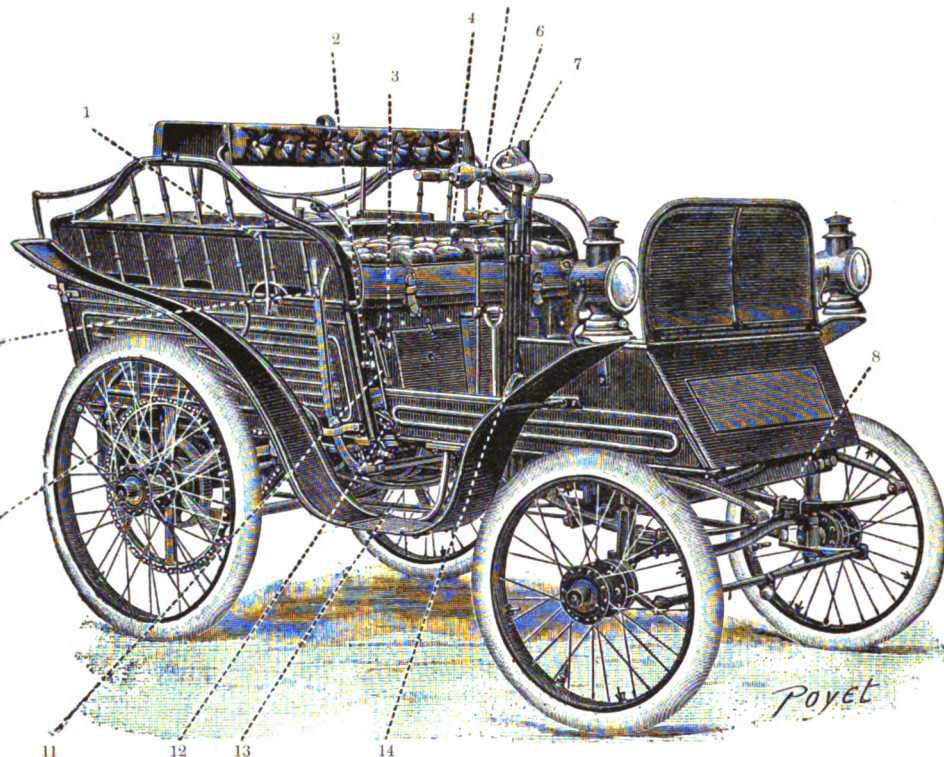


FIG. 1.—THE MORS DOG CART, GENERAL THREE-QUARTER FRONT VIEW, SHOWING DETAILS VISIBLE WHEN VIEWED FROM THIS POSITION.

and mechanism, and it is proposed to fill this void by the present description.

Speaking in general terms, the mechanical details of the Mors carriages are held by "the man in the street" to be particularly complicated and difficult of ready description. This, however, is one of the many popular errors existing in regard to all types of motor-vehicles, and although to the tyro the "complications" may appear excessive, it is hoped that these articles will entirely dispel any such delusion, and at the same time afford users and possible purchasers of the Mors vehicles a ready means of becoming intimately acquainted with the "internal economy" of perhaps one of the many French motor-vehicles imported into this best country.

For the purpose of making these articles more valuable it is proposed to take the most popular form of these vehicles, the 8-h.p. dog-cart, fitted with engines having four cylinders and the customary form of electrical ignition apparatus. The vehicle itself is of a particularly happy form, in that its general contour accommodates itself most readily to its mechanical equipment. It must be understood, however, that the following description applies not to the "dog-cart" only, but to all

this difficulty is obviated. The four cylinders are kept cool by a compound system of heat radiation. The crank ends of the cylinders are cooled by means of radiating discs placed circumferentially around them, whilst the heads of the cylinders—that is to say, the explosion chambers and the parts adjacent thereto—are cooled by means of a constantly circulating stream of water carried in a jacket surrounding the walls of the cylinders.

The ignition of the explosive charges of gaseous vapours is effected by electricity, and it is perhaps owing to the perfection of the system adopted that the Mors vehicles are so generally successful in operation. When the motor is first started the necessary current is taken from a battery of accumulators. When the motor attains its proper speed, however, this source of supply is cut out, and the current is furnished directly by a small dynamo actuated by the motor itself; subsequently any excess of current generated by the dynamo is utilised to re-charge the accumulators used when first starting the engine.

Power is transmitted from the motor shaft through belts to a secondary or intermediate shaft, and from thence to the road wheels through chains by means of sprocket wheels.

The changes of speed and the putting of the motor in and out of gear with the road wheels is carried out on the intermediate shaft. Lubrication is automatically effected by means of a system of chains and spur wheels fixed on the motor shaft, and the circulation of the cooling water and the driving of the dynamo are also controlled by similar means.

The driver of the vehicle has the whole of the controlling mechanism well within his reach. As these various parts are described in detail, the extreme convenience of the arrangement of these items of the control mechanism will be increasingly appreciated. The seating arrangements are such that the driver suffers no interference of vision, although one passenger, or even two if necessary, can be carried on a seat in front of him. In front of the driver is placed a handle bar somewhat similar to that of a bicycle, by means of which the direction of the vehicle is controlled. This handle bar carries two handles, one being horizontal and the other placed vertically at right angles. It is thus possible to steer the carriage with either hand or with both, although it is generally customary to use the left hand for the purpose, the right hand being left free to manipulate other items of the control gear. The vertical handle is placed on the left-hand end of the handle bar, and as the description proceeds it will be appreciated why the left hand is more generally used for steering.

The handle bar is, of course, carried on a steering post, which in its turn is carried in the interior of a vertical hollow pillar. In the centre of the handle bar is carried a commutator switch having a dial on which is engraved, in positions corresponding to notches in its edge, the following: "Stop," "Accu.," "Dyna.," "Ch. 1.," and "Ch. 2." When it is desired to start the motor the switch is turned from "Stop" to "Accu.," and the accumulators at once commence to supply current to the induction coil, and thus the necessary "sparks" are furnished for the explosion of the gaseous charges in the motor cylinders. The first impetus of the motor has, of course, been given by means of the customary starting handle usual with all types of impulse engines.

Before the starting handle is used, however, the driver has of course opened the cocks controlling the admission of air and spirit to the carburettor. These cocks are placed on the right-hand side of the driving-seat at about the height of the calf of the driver's leg when seated. They are thus within easy reach of his hand. Equally, of course, he has opened the quantitative control cock for the admission of the gaseous charges to the cylinders. This is controlled by a small lever working in a rack placed on the outside of the carriage on the right-hand side in such a position that it is reached easily when the right hand is permitted to hang naturally outside the car.

(To be continued.)

A MOVEMENT is on foot to secure the establishment of a motor-car service in the West End of Newcastle-on-Tyne.

L'AUTOMOBILE CLUB DAUPHINOIS is the name of a new society which has just been formed at Grenoble (France), with Dr. Pegoud as first president.

LA SOCIÉTÉ NOUVELLE DES ACCUMULATEURS FULMEN, Clichy (18 Quai de Clichy), France, is the title of a new company which has just been registered with a capital of £22,000.

We learn that Messrs. Heinle & Wegelin, of Oberhausen, Augsburg, Germany, have been awarded a gold medal for their exhibit of motor-tricycles and trailing cars shown at the German Sports Exhibition at present being held at Munich.

THE James Gould Company of Albany, N.Y., has received an order from the Columbia and Electric Vehicle Company of Hartford, Conn., for fifty automobile hansom cabs, to be equipped with the latest electric motors. The manufacturers intend, it is stated, to make these vehicles much lighter than any heretofore devised, partly by means of an improvement in the storage batteries.

## AN INGENIOUS AND VALUABLE APPLIANCE.



SOME time ago we had the pleasure of alluding in general terms to the "Mensor" chronograph and speed recorder, introduced into this country by Mr. Robert S. Roberts, of 100 The Parade, Leamington.

We then stated that from a cursory examination the appliance would appear to be of undoubted value to automobilists, and promised that if possible we would give the apparatus an extended test and report results to our readers. By the courtesy of Mr. Roberts we have now been able to fulfil our promise, and have given this apparatus, through the kindness of a well-known automobilist, an exhaustive and almost daily test over a period of about two months. The appliance was used throughout the whole of the trials of the Automobile Club at Richmond, during the *Motor Car Journal's* Commercial Efficiency Tests at Islington, and on other days in private runs and on tours. It has also been used to test speeds of railway trains, horse-drawn vehicles, motor-tricycles, and even for gaining a knowledge of the speeds of pedestrians, so that these tests have been of a widespread character, and cover various speeds of from four miles per hour of a pedestrian to ninety-six miles per hour on one of the fast expresses of the London and North-Western Railway.

The apparatus is, in fact, an ordinary chronograph stop-watch, with the addition of another dial registering speeds. The speed dial has four scales upon it, each scale being figured in different colours. The scale to be read at any one time is designated by a small scale pointer working synchronously with all other parts of the watch.

By means of this apparatus it is possible to at once determine the rate of speed of any moving body, so long as that body traverses between two points the distance between which is a known quantity and a unit. It matters not whether the distance be versts, leagues, kilometres, miles, yards, metres, or any other known measurement, the apparatus instantaneously and automatically records the number of these traversed in an hour with absolute accuracy and incontrovertible fidelity.

The whole value of the appliance arises from the second or speed dial. The hands of this move synchronously with the centre-seconds, or chronograph hands of the watch dial. The fidelity of the record is therefore indisputable, for it follows that if a body takes 30 secs. to travel a unit of length, the speed of that body is 120 units per hour. In working, the chronograph is started at the instant of the moving body crossing the starting point of the known distance—a milestone, for instance—and it is stopped on passing the terminal point of this distance. Automatically, the time taken to travel the distance is recorded to a fifth of a second, and synchronously in the speed dial the rate of units travelled per hour is also recorded.

In actual practice we have found the appliance equally reliable for all speeds, and although on receipt of the apparatus from Mr. Roberts we found that the watch movement required regulation and adjustment, after this was done the variation of the watch for the two months was found to be considerably under one second. We can heartily commend this ingenious appliance, therefore, to all those who would like to ascertain the speed of travel per hour without having to undertake laborious and troublesome calculations as to time occupied and distance traversed.



"AUTOMOBILETAXAMETERDROSCHKEN" is the name by which the motor-cabs plying for hire in Berlin are known!

THE Tractor-Truck Automobile Co. has just been organised at Camden, N.J., to construct vehicles to be operated by compressed air, electricity, etc. The capital is £500,000.



## THE RENAUX MOTOR-TRICYCLE.

SO much has lately been heard of the Renaux motor-tricycle and the wonderful performances made on it by its designer and builder that a description of the machine, with illustrations, may not be without interest at the present time. The tricycle (Fig. 1) differs from those of the De Dion type in that it is provided with a horizontal motor. It is stated to be capable of working up to 3 h.p. at a normal speed of 1,200 revolutions per minute. It is located between the bottom bracket and the rear axle, its horizontal position being claimed to greatly reduce the amount of vibration experienced in motor-tricycles. There are a number of special features in the motor (Figs. 2 and 3), one of which is that the piston rod is connected by means of a satellite pinion to two toothed wheels which form the differential. Referring to the illustrations (Figs. 2 and 3) it will be seen that the cylinder *C* terminates in a case *B* in which are located two fly-wheels *V V'*, each forming part of the bevel wheels *E E'* of the differential, mounted on the

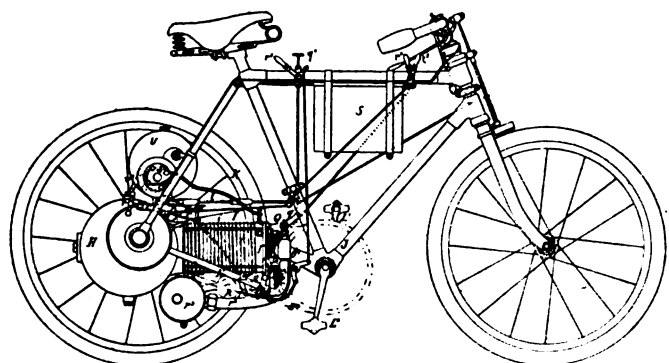
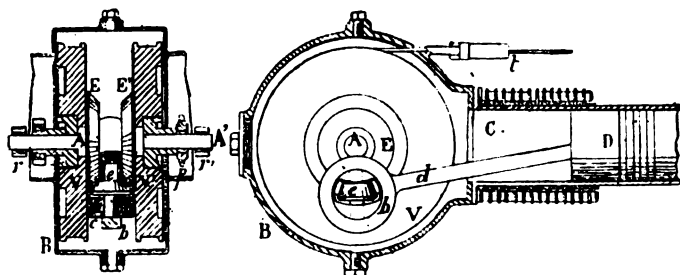


FIG. 1.—THE RENAUX MOTOR-TRICYCLE.



FIGS. 2 AND 3.—PART SECTIONAL VIEWS OF RENAUX MOTOR.

two parts of the motor shaft *A A'*. The head of the connecting rod *d* forms a collar *b* in which can turn a disc, carried by pins, connecting the two fly-wheels *V V'*. The disc enclosed in the collar is provided with a recess in which is mounted a small spindle on which can turn loosely a mitre pinion *e*, which gears with the bevel wheels *E E'*, and thus constitutes with these latter a differential gear. On each of the two parts of the motor shaft is keyed a pinion *r r'* which gears with internal toothed wheels fixed on the tricycle axle. The fly-wheels *V V'* are grooved on their circumference to receive band brakes, actuated by means of the rod *t*. The motor is started in the usual way by the pedals, a clutch mechanism being provided to the bottom-bracket chain wheel, the rear chain wheel being located at *p*. The ignition device and exhaust valve is controlled by a toothed wheel *M* (Fig. 5), which gears with a pinion *m* on the motor shaft. The wheel *M* is provided with two cams, one serving to complete the primary circuit in the induction coil at the requisite moment, and the other to lift the exhaust valve by means of the rod *N* every second revolution of the motor shaft. The sparking device may be advanced or retarded by means of the rod *p*. Fig. 4 gives a section through the combined petrol tank *U*, the lubricating oil tank *V*, and the induction coil *S'*. The carburettor *R* (Fig. 1), which is located near the exhaust box *r*, also possesses novel features. The chain connecting the pedals with

the motor bears slightly on a roller, connected with which, in the carburettor, is a miniature paddle-wheel on which falls the petrol, the latter being instantly vaporised. The quantity of spirit allowed to flow into the carburettor is regulated by the handle *r*; the quantity of explosive mixture allowed to pass to the explosion chamber is controlled by the handle *r'*,

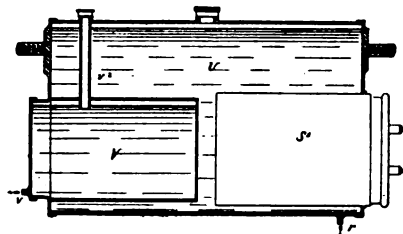


FIG. 4.—THE RENAUX COMBINATION PETROL TANK.

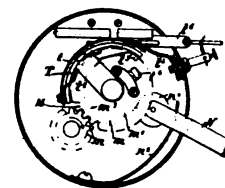


FIG. 5.—THE RENAUX EXHAUST CONTROL GEAR AND TREMBLER.

while the handle *q'* controls the compression cock. Altogether the Renaux motor-tricycle is an interesting machine, and by reason of the smart performances made on it by M. Renaux himself it is likely to soon become very popular. As we have already announced, the English patent rights in it have been acquired by Messrs. Marshall & Co., of Belsize Works, Clayton, Manchester, who are arranging for the manufacture of the Renaux motor-tricycle on a large scale.

## THE PIEPER ELECTRO-PETROLEUM CAR.

ONE of the novelties displayed at the exhibition at the Tuileries in Paris in July was certainly the Pieper car, which is a combination of an oil motor with a dynamo and storage battery. At first glance the idea seems ridiculous, but a careful examination shows that such a car has great advantages.

The oil motor, situated in front, acts directly on the wheels by a two-gear transmission just as an ordinary car, but the dynamo is also connected on the main shaft of the motor, so that it acts like a fly-wheel. The dynamo is connected to a storage battery consisting of a few cells. At a certain speed—say fifteen miles an hour—the electric pressure of the dynamo and that of the battery are exactly balanced, so that no current passes from one to the other. Now, suppose the car is going down hill, the motor, which has no regulator, will run quicker, and if it were not for the dynamo would "race." The dynamo, however, acts as a regulator, and directly develops an electric pressure superior to that of the battery, so that a current flows, charging the batteries. In a word, the excess of power of the motor is not utilised to go quicker down hill, but is transformed into electricity to charge the battery. On a hill the contrary takes place: the motor slows down a little, but the energy stored up in the cells is given back, so that the car goes up hill at the same pace, or very nearly so, as it went down. The consequence is that in all circumstances the oil motor gives out the same power, and therefore works under very economical conditions.

Supposing, for instance, the motor gets out of order, the charge of the battery will be sufficient to run the car a distance of over twenty miles, an advantage that many people will appreciate.

We hope shortly to be able to give a full description of this interesting car, which well deserves the public attention.

D. FARMAN.

A FEATURE of the fourth annual Manchester cycle and motor exhibition, which is to be held at the Royal Botanical Gardens, Old Trafford, is expected to be the display of motor-cars.

## CORRESPONDENCE.

### THE PARIS-OSTEND RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In answer to inquiries recently made, the enclosed letter has been received by the Automobile Club.

Yours faithfully,

The Automobile Club,  
August 10th, 1899.

C. JOHNSON,  
Secretary.

[TRANSLATION.]

Sir,—In reply to your letter of the 3rd inst., I have the honour to inform you that, in accordance with the new regulation concerning the running of automobile carriages in France, every driver should be furnished with a certificate of capability, and his carriage should be of a type approved of by the Office of Mines. The regulation not making provision for any exception, I can only give you the text of the law just as it stands.

Many "chauffeurs" neglect this formality, but they do so at their own risk and peril, and are liable for the contravention of the rules on being detected.

If the "chauffeurs" arrive on the eve of the race, it is certain that they will have no time to conform to the requirements of the regulations; for this, it will be well for them to arrive in Paris at the earliest possible moment.

The Customs duties deposited with the Customs House on the importation of automobile carriages into France are refunded by all the French bureaux. These fees can therefore be refunded on passing the Belgian frontier. As these formalities always take time, and a race under these conditions will be more possible, it is probable that the organizers of the Paris-Ostend race have made provision (as we did in the Paris-Amsterdam race) for removing all difficulties for the passage of vehicles to the frontier. In this way, those taking part will be able after the race to receive back the fees deposited on coming back to the frontier.

It is said, besides, that to simplify matters the finish of the race will be at the frontier, and the journey of 40 kilometres between the frontier and Ostend will be made *en promenade*.

Believe me, etc.,

DE MORLHON,

Secrétaire Automobile Club de France.

Paris, August 8th, 1899.

### ACCUMULATORS FOR ELECTRICAL VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the expressed want of electric motors (particularly for use in the country) which can be charged in a more simple manner than by means of dynamos, I should be glad if any reader can give his personal experience of the Boron-Carbon battery (made at Everton, Liverpool), which the prospectus says can "replace with advantage either dynamos, accumulators, or other electro promoters." I notice that a firm of motor builders at Hull state that the "cells have given every satisfaction." It may be feasible with these to charge sufficient accumulators to obtain some 3 or 4 h.p. It will be to the great advantage of motor builders to simplify the motive power.

Chardstock,

August 14th, 1899.

Yours truly,

COUNTRY RESIDENT.

### MOTOR-CARS AT THE SEASIDE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I wish to point out to your readers, especially the manufacturers, a very great defect which goes a long way to bring motor-cars into disrepute.

It appears from my experience in running the cars for passenger traffic that the vehicles can never be depended on. I book passengers to different points of interest, and then when I have a full list and they are waiting for the cars, I have to go in search of the cars and find there is a something wrong and they cannot run. This naturally causes considerable annoyance. One would not mind if the occurrence was an occasional one, but it has been going on daily now for three months. I should be glad to know if there are cars produced that have not these defects.

The Library, Eastbourne,  
August 14th, 1899.

Yours truly,

THOS. S. GOWLAND.

### A MOTOR COMPETITION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—With reference to the competition of motors which is being organized by *La Locomotion Automobile*, I really do not see exactly what value such tests will have. First, how are the cars to be tested, and how will their comparative value be obtained? As far as consumption of fuel (petrol) goes, naturally the car which has the largest h.p. will consume the most per kilometre, and the most economical will prove to be a light car fitted with a De Dion motor. As for the consumption per h.p. on the brake, I am afraid it will be very much the same for any car, and in that case an ordinary Benz vehicle will be equal to the latest type of Panhard car.

The real desideratum at this early stage of automobilism is the reliability of a car, and the best is certainly that which will go over the greatest number of miles without incidents or repairs, etc. From this point of view I think no better test can be obtained than a long race (as the Tour de France), in which no part of the engine or car could be replaced.

Paris,

August 15th, 1899.

Yours truly,

"CARBURETTOR."

### AN UNNECESSARY INDIGNITY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—"A Gentleman" hits the nail on the head in drawing attention to the unnecessary indignities which are thrust on automobilists and their witnesses who are called upon to pay a visit to the local police-courts. It is not sufficient that motor-car owners may be stopped and "booked" by any policeman who *imagines* that the car is being driven at some remarkable speed, but when they are called upon by a summons to appear before the magistrate the treatment is nothing short of scandalous. Not only is one compelled to wait about, often for hours, among a crowd of most uninviting characters, but even when the case does come on one is compelled to listen to the wonderful tale told by the constable, which, on the face of it, is more often than not simply absurd, but on which the majority of magistrates appear to base more reliance than on the evidence of any number of witnesses on behalf of the defendant.

Fortunately, I have so far escaped the eye of the imaginative policeman, but should it be my lot to be summoned I have fully made up my mind that it will be wiser not to put in an appearance and allow myself to be fined than to waste a day at the police-court—for that is practically what it means—in undesirable surroundings in a, most probably, futile attempt to prove to the magistrate that the policeman was mistaken.

Kingston,

August 14th, 1899.

Yours truly,

A BUSY MOTOR-CYCLIST.

THE SOCIÉTÉ DES VOITURES AUTOMOBILES DECAUVILLE, of Paris, owing to the success of their little voiturettes, are now taking up the manufacture of a somewhat similar type of vehicle, but with accommodation for four persons, and driven by a motor of either 5 or 8 horse-power provided with a water-jacket. The new carriage, which is very elegant in design, has four forward speeds and one backward, and, like the smaller pattern, is driven without belts or chains.

A PAPER by Prof. G. F. Sever and R. A. Fleiss read at a recent meeting of the American Institute of Electrical Engineers gives some interesting information regarding the relative economy of horse and electric delivery wagons. The authors have found that the average delivery wagon covers a distance of about 11,268 miles per year, at a cost of 13.86 cents per mile for a two-horse vehicle. An automobile will cover the same distance for 2.65 cents per mile less, equivalent to 298 dols. 60 c. per year. A further advance is the higher speed of the electric vehicles, enabling the deliveries to be accomplished with greater celerity.

## MOTOR-CARS ON THE CONTINENT.

## Automobiles in Italy.

We understand that it is proposed to establish a regular service of automobiles between Oneglia and Garesio, the route to be followed being *via* Pontedassio, Chiusavecchia, Cesio, Piere-di-Teco, Pornassio-Acquatico, Case di Nava, Ormea and Trappa. The type of vehicle decided upon is an omnibus fitted with a steam motor developing 30 h.p., which should be amply sufficient to negotiate the steep hills encountered *en route*. The load is to be ten passengers and baggage. Doubtless, tourists will largely avail themselves of this means of communication between the various towns, and if the service proves successful others of a similar nature will be forthcoming.

## The Nice Week.

THE programme of the annual automobile fêtes at Nice organized by the Automobile Club of Nice, under the patronage of the Automobile Club of France and the Automobile Club of Marseilles, has just been issued, and it is to be sincerely hoped that English automobilism will be worthily represented at this truly brilliant festival. The official programme in a condensed form is as follows:—First day, Sunday, March 25th: 2.30 p.m., procession of decorated automobiles on the Promenade des Anglais. In the evening there will be held a torchlight procession and a reception at the Automobile Club. Second day, Monday, March 26th: Race, Nice-Marseilles, *via* Cannes, Fréjus, Le Muy, Draguignan, Carcès, Brignolles, Saint Maximin, Tretz and Gardanne. Exhibition of competitors' cars at Marseilles. Third day, Tuesday, March 27th: Race, Marseilles-Nice, *via* Aubagne, Roquevaire, Saint Zacharie, Saint Maximin, Brignolles, Flassaus, Le Luc, Vidauban, Fréjus and Cannes. In this race, Nice-Marseilles and return, there will be four categories: 1, racing cars; 2, touring cars; 3, voiturettes of less than 400 kilos.; 4, motor-cycles. The jury will determine in which series a vehicle can compete, and their decision will be final. The prizes will probably amount to 10,000 francs. Fourth day, Wednesday, March 28th: Obligatory exhibition of the vehicles which have competed in the race Nice-Marseilles-Nice. Fifth day, Thursday, March 29th: Mile race on the Promenade des Anglais. This race is obligatory for all the competitors in the 1st, 3rd and 4th series of the Nice-Marseilles race. Sixth day, Friday, March 30th: Race, Nice-La Turbie. Obligatory for all competitors in the 1st, 3rd and 4th series of the Nice-Marseilles race. In the afternoon there will be held a competition for elegance of design.

## Racing at La Rochelle.

ON Monday last at La Rochelle two events were decided, the one being open to "motor-cycles," the other reserved for "motor-cyclettes." In the former class a noteworthy performance was achieved by Béconnais, who covered the distance of 188 kilometres in 3 hours 13 minutes, averaging 58 kilometres 500 metres per hour. 188 kilometres in 193 minutes is not bad travelling. The other placed riders were: 2, Rigal, 3 h. 58 m.; 3, Bertin, 3 h. 59 m.; 4, Duanip, 4 h. 20 m. The cyclettes were required to travel 128 kilometres only, and the race resulted as follows: 1, John Léonard, 3 h. 11 m.; 2, Maurice Bucquet, 3 h. 37 m.; 3, Louis Cousin, 3 h. 52 m.

## A New Car.

M. PAUL GEORGE, in conjunction with M. J. Lemaitre, is now experimenting with a new car, which is fitted with a special 5-h.p. horizontal motor. The car is of simple construction, and is to be sold at about 5,000 francs (£200).

## Criterium of Voiturettes.

IN September next "*Le Sport Universel Illustré*," which has already organized the "criterium" of electric vehicles, is going to do the same for the voiturettes. Light vehicles for two persons are only admitted in this competition, and no doubt they will be numerous. Unfortunately, up to now this class of vehicle, so much demanded by the public, is very far from perfect. Let us hope the criterium will reveal the "*rara avis*."

## Races at Lorient.

ORGANIZED by M. Teste, there took place at Lorient on Sunday last a most successful day's racing, the principal events being as follows:—Local race—heats of 5,000 metres, final 6,500 metres: Winner, Berthou, 9m. 39s.; second, Teste. International race—heats of 5,000 metres, final 9,750 metres: Winner, Berthou, 13 m. 50 s.; second, Teste. In this event Hughes held a lead of 500 metres after 6,000 metres had been covered, and then met with an accident to his motor, otherwise the victory would assuredly have been his.

## The Barrière Tricycle.

THAT one does not see many of these machines in Paris is accounted for more by the very limited output of the makers than anything else, as those in use appear to give every satisfaction. The other day we had an opportunity of testing the hill-climbing capabilities of this tricycle in the neighbourhood of Champigny, La Varenne, and Boissy St. Léger, and were astonished at the ease and rapidity with which it ascended several very steep grades.

## Le Criterium de l'Est.

UNDER the auspices of "*Le Véloce Club Vityrat*" this race was decided on Sunday, over a course of about 110 kilometres. The winners were—1, Thevenet; 2, Robert; 3, Peron; 4, Lenfant. The first-named covered the distance in 2 h. 25 m. 20 s.

## Prizes in Le Tour de France.

THE distribution of the prizes of "*Le Tour de France*" was made at the offices of *Le Matin* on Thursday last week, and the majority of the competitors were present in person. The distribution was as follows:—Cars: 1, René de Knyff, 6,000 fr.; 2, Girardot, 4,000 fr.; 3, Chasseloup-Laubat, 3,000 fr.; 4, Pinson, 2,000 fr.; 5, De Castelnaud, 1,200 fr.; 6, Heath, 800 fr.; 7, Clément, 700 fr.; 8, Levegh, 700 fr.; 9, Jenatzy, 600 fr. Tricycles: 1, Teste, 2,500 fr.; 2, Tart, 1,000 fr.; 3, De Méaulne, 700 fr.; 4, Degrais, 400 fr.; 5, Bardin, 400 fr.; 6, Béconnais, 300 fr.; 7, Gleize, 300 fr.; 8, Cormier, 200 fr.; 9, Rivierre, 200 fr. Voiturettes: 1, Gabriel, 2,500 fr.; 2, Théry, 900 fr.; 3, Ulmann, 500 fr.

## The Paris-Dieppe Motor-Cycle Race.

THIS event, promoted by the Association Vélocipédique d'Amateurs was run off on Sunday last, eighteen motor cyclists competing. The start was effected at St. Germain at 9 a.m., and exactly 3½ hours later the premier rider (Oury) arrived at Dieppe, his average speed being 42 kilometres per hour. Five minutes later Rodriguez finished, having experienced extremely bad luck. At a level crossing, only 400 metres from the finish, he met with a bad accident, and was compelled to push his machine the remainder of the course, thereby losing first place. The third and fourth men were respectively Cormier and Rolland.

**The Condition of M. Craninckx.**

WE are glad to say that the latest news is of an extremely favourable nature, and that M. Craninckx is now on the high road to recovery. All English automobilists will rejoice equally with those of France and

Belgium that the life of so genuine a sportsman as M. Craninckx has been spared, and will unite with us in wishing him a speedy recovery to complete health.

**More Scotte Road Train Services.**

A NEW Scotte steam road train service has just been inaugurated between Arcis-sur-Aube and Brienne, France. Three trains are in use—two for passengers and one for the transport of goods.

**A New De Dion Steam Omnibus.**

MESSRS. DE DION AND BOUTON, of Puteaux, are having built in Paris a new "body" for a twenty-four seated steam omnibus, entirely constructed of "partinium"—a new aluminium alloy, which is claimed to combine

strength with lightness.

**A New Peugeot Racing Car.**

IT is said that M. Lemaitre is having built a new Peugeot racing car, which will be fitted with a 25-h.p. engine. Certainly this car will take hills!

**Motor-Car Construction in Austria.**

THE *Oesterreichisches Handels Journal* announces that a company is in course of formation in Vienna, to establish works in the neighbourhood of that city for the construction of motor-cars.

## THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.

A MEETING of the council of this Association was held on Tuesday afternoon, under the chairmanship of Mr. Alfred L. Jones, J.P., vice-president. The business included the election of a number of new members, and, on the motion of the Chairman, Dr. H. S. Hele-Shaw, M.Inst.C.E., and Mr. Anthony G. Lyster, M.Inst.C.E. (Engineer-in-Chief of the Mersey Docks and Harbour Board), were elected vice-presidents; and Messrs. William Oulton, J.P. (the Right Hon. the Lord Mayor), and Charles W. Jones, J.P., were elected members of the council. A number of letters from visitors to the recent trials, and also from the competing firms, were read, all of which expressed complete satisfaction with the arrangements and results. Letters of regret for non-attendance at the trials from Lord Derby, president of the association, and his lordship's letter enclosing fifty guineas towards the expenses of the competition, were also read.

It was decided to hold a further series of trials about the beginning of October, 1900, by which time the existing legislative restrictions will probably be considerably relaxed. In this connection it was resolved to request the local Members of Parliament to take steps to secure the introduction of a short Bill to enact the increase of the tare limit from three tons to four, as the effect at present is to increase prime cost very greatly, owing to the use of aluminium or other expensive metals, or to tempt manufacturers to cut down bearing surfaces and factors of safety in construction. This matter was strongly commented upon in the report of the judges for last year's trials, and is still a great drawback to progress in heavy automobilism.

The marked improvement in the vehicles presented this year as compared with those which took part in the 1898 trials appeared to be a subject of general concurrence, the opinion being freely expressed that a highly favourable report will be published about November. It was stated that as a result of the trials a large number of orders had been given



THE HILL-CLIMBING CONTEST AT LIVERPOOL—SNAPSHOT EN ROUTE.

to the manufacturers who competed this year. The Lancashire and Yorkshire Railway Company, who had quite a contingent of representatives at the trials, had taken delivery of Messrs. Thornycroft's vehicle No. 2 (trailer), which carried 6½ tons during the trials and was awarded a gold medal. It is stated that sufficient orders were given to this firm to keep them busy for close upon twelve months.



THE HILL-CLIMBING CONTEST AT LIVERPOOL—SNAPSHOT EN ROUTE.

The Lancashire Steam Motor Company, Leyland, and Bayleys, Limited, London, had also, it was announced, booked a number of orders, chiefly from East Lancashire mill-owners. It was resolved to support the trials of motor-vehicles which are to be organized in connection with the Congress of the Royal Institute of Public Health at Blackpool next month, the arrangements being left in the hands of the honorary secretary, Mr. E. Shrapnell Smith.

AN electric vehicle manufacturing firm in Toronto, Ont., has copied the English example, and has constructed a motor-driven invalid's chair. It is equipped with three storage battery cells weighing 33 lb., and a small motor capable of driving it at a maximum speed of four and a half miles per hour.

## CHARGE DISMISSED.



### HON. C. S. ROLLS IN THE POLICE-COURT.

ON Tuesday last the Hon. C. S. Rolls and Mr. Ernest Hutton, J.P., both members of the Automobile Club, appeared before Mr. Rose, at the West London Police-court, charged with having "on July 26th unlawfully driven in Palace Gate, Kensington, light locomotives—to wit, motor-carriages—at a speed greater than is reasonable and proper, having regard to the traffic on the highway there."

Mr. T. W. Staplee Firth, a member of the Automobile Club, who has already won two automobile cases for members of the Club, appeared for the defendants.

William Beck (Police-Constable 126 F) swore that he was on patrol duty in Palace Gate at the time the two motor-carriages came along; that they were going at a rapid speed; that he held up his hand; that he thought the defendants did not see him do so, and that the carriages stopped farther on in Kensington Gate; that he went after them, and demanded the names and addresses of the drivers.

In reply to the magistrate the police-constable stated that the motor-vehicles were travelling at the rate of fourteen miles per hour; that there was not much vehicular traffic in Palace Gate, but that there were a number of people on the footpath going to and coming from Kensington Gardens. In cross-examination by Mr. Firth he stated that at the time the cars passed him he was standing at a point fifty yards from the turning at which Palace Gate joins the Kensington High Road; that he did not see the cars turn out of the Kensington High Road into Palace Gate; that he had formerly been a carman and that his age was twenty-two. He admitted that he did not know by what motive power the cars were propelled, but that they were proceeding at the rate of about fourteen miles an hour when they passed him. He did not notice any carriages in Palace Gate at the time, nor the presence of a single man, woman, or child on the roadway at the time. He saw Mr. Rolls, who was in the leading carriage, put up his hand. He followed the cars and found them stationary at No. 27 Kensington Gate, W., which was just round the corner. He (the police-constable) had stated that he had "lost" a motor-car the day before, which was being furiously driven in Palace Gate—he had "lost" the car because he could not catch it up. He had no method in judging the speed of a motor car.

Mr. Firth: In fact, you rely upon your imagination?

Police-Constable; Yes.

The Magistrate: Were the cars going faster than the ordinary traffic?

Police-Constable: Yes.

Professor Vernon Boys was then called by Mr. Firth, and stated that he was a Fellow of the Royal Society, late Assistant Professor of Physics at the Science and Art Department, one of the Gas Referees to the Board of Trade, and one of the judges at the recent Automobile Club Show. He knew Palace Gate well, having cycled through it almost daily for some years. One of the cars in question, that driven by Mr. Rolls, was an electric car which could not be driven at a high speed; it had amazing brake power. He had been with Mr. Rolls in the car on the road in question, and had ascertained that the car could be stopped without trouble whilst at its best speed in a space of three or four yards. The steering of the car was absolutely under control, and the control of the car itself was far better than that of a horse-drawn vehicle.

Mr. R. E. B. Crompton said he was an electrical engineer, Past President of the Institute of Electrical Engineers, and a member of the Institute of Mechanical Engineers, and was for nine years in charge of steam traction on highways in India; during five of those years he had been in charge of motor-vehicles running on the Grand Trunk roads of India. It was a part of his business to test speeds. He understood the construction of the car driven by Mr. Rolls, and he found it was so constructed that if a certain speed was exceeded a

retarding action would set in. He had tested the car in Palace Gates, and on a series of runs, during which the car was started at the corner at the rate of four miles an hour and then as soon as possible put on its highest speed. He concluded that at the end of about sixty yards the car could not travel at a speed exceeding nine and a half miles an hour. Mr. Crompton also spoke of the brake tests, which had proved eminently satisfactory. He pointed out also that there were no side turnings from Palace Gate.

Mr. Ernest Hutton, J.P., one of the defendants, stated that he was an electrical engineer. Mr. Rolls was driving a Columbia electric car, and he himself was driving his own 6-h.p. Panhard car. In coming along the Kensington High Road they found portions of the road taken up, with a mixed traffic proceeding in single file, and at this time the cars were not exceeding a pace of about three and a half to four miles an hour. A police officer told them to get along faster. On arriving at the corner of Palace Gate they went round the refuge. While in the Kensington Road their speed did not exceed four miles an hour, and in Palace Gate it did not exceed six and a half or seven miles an hour. Palace Gate was quite clear of vehicular traffic, and there was not a person on the roadway. They called at the house of a friend of Mr. Rolls, 27 Kensington Gate, and whilst there the police-constable came there and demanded their names and addresses. He charged them with furiously driving, and seemed very sceptical as to the correctness of the names and addresses given him by them; his demand was accompanied by rudeness, which they did not expect in a London police-constable.

The Hon. C. S. Rolls stated that he was a member of the Automobile Club of Great Britain and a member of the Automobile Club de France. He had passed the test and held the certificate granted by the French Government entitling him to drive in France. He had driven motor-cars since the Act came into force in November, 1896; had had nine motor-carriages; had never had an accident except a broken axle; and had never caused injury to any man, woman, child, horse, or vehicle. The car he was driving at the time in question was one owned by Mr. Alfred Harmsworth, who had asked him to try it, as he (Mr. Harmsworth) had just received it from abroad and could not make it proceed at a greater speed than about five miles an hour. It was an electric car, and specially built for town traffic; it was incapable of running at a high speed. In the Kensington Road there was a brewer's dray in front of him, and he was not able to drive then at a greater speed than about three and a half miles an hour. In Palace Gate, where there was no traffic at the point—about fifty yards from the corner—where the police-constable was standing, he was not running the car at more than about seven miles an hour. When about to turn the corner at the end of Palace Gates he held up his hand as a signal to any vehicle which might be behind him that he was about to turn the corner and stop.

In reply to the Magistrate, Mr. Rolls stated that the highest speed at which he travelled at any time during the afternoon in question did not exceed nine miles an hour, and that the tests of the vehicle which he had since made showed that the car could not travel at a high speed.

The Magistrate, in summing up the evidence, stated that it was clear that there was, at the time in question, traffic in Palace Gate; that the police-constable sincerely believed that the cars were travelling at fourteen miles an hour; but he (the Magistrate) admitted that it was difficult to judge the speed of a motor-vehicle (accustomed as one is usually to the sight of a horse in front of a vehicle), and that unless the pace of a motor vehicle was measured no accurate judgment could be arrived at. He thought that the police-constable was mistaken, and that the cars were not going at the rate of fourteen miles an hour. It remained for him to consider whether they were travelling at a pace which was dangerous to the public. He thought that the defendants having previously been urged by a police-constable in the Kennington Road to get along faster the defendants might be inclined to get along faster; but in

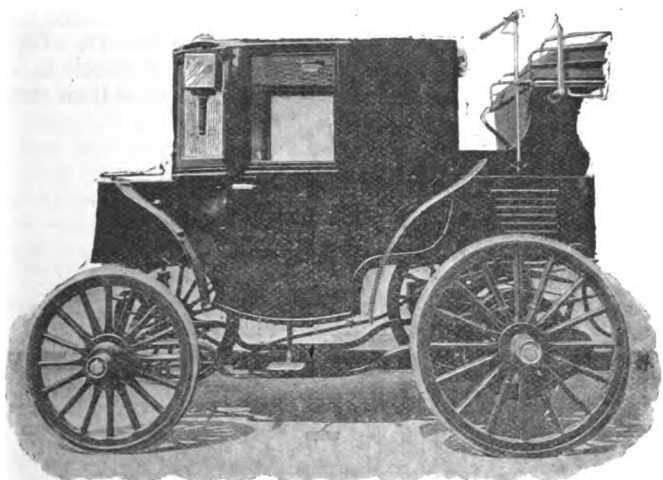


view of the fact that they were about to pay a visit in Kensington Gate, and that they knew they had a turning to take at a corner at the end, he did not think that they would be driving at a high speed. Taking into consideration the technical evidence, he did not consider their speed could have been more than nine miles an hour, although this pace might have seemed faster to the police-constable; and, seeing that there was no traffic then in Palace Gate, he did not consider that they were driving to the danger of the public. He therefore dismissed the case.

Mr. Firth asked for costs, as the defendants had succeeded in establishing their case; but the Bench declined to allow these.

## THE RIKER ELECTRIC DEMI-COACH.

THE Riker Electric Vehicle Co., of Brooklyn, New York, have sent us a photo, which we reproduce herewith, of a new electrical demi-coach they have lately introduced. The vehicle has seating accommodation for four persons, in addition to the driver and an attendant. Two electro-motors, of 2 kilowatt capacity each, are provided, they being geared to the rear wheels. The accumulators have a capacity of a run of 25 miles on level roads. The controller switch is arranged to give three forward speeds and two backward motions, the maximum speed being ten



THE RIKER ELECTRIC DEMI-COACH.

miles per hour. The vehicle, which is handsomely finished, is provided with wood wheels with solid rubber tires; its weight complete is given as about 1 ton 17½ cwt. As will be seen the driver has been placed, as in a hansom, at the back of the vehicle, leaving the view of the passengers entirely unobstructed. Furthermore it is pointed out that in a hansom nothing but the dashboard intervenes as a protection to the passenger. In this Riker demi-coach a large part of the battery is put in the box in front, serving as a very solid bulwark and putting a greater distance between the passenger and any vehicle or person that might chance to collide.

WITH regard to the run which is being organized by the Automobile Club to Folkestone and Dover next month, the arrangements so far made are as follows:—On Saturday, September 16th, there will be a run to Folkestone; on the following day, Sunday, members will cross over to Boulogne, and witness the finish of the Paris-Boulogne race, returning to Folkestone the same day; on Monday, September 18th, there will be a tour from Folkestone through some part of Kent; while on Tuesday members will proceed to Dover for the opening of the motor-car show which is being promoted by the Mayor of that city.

## SCOTTISH NOTES.

### A Carriage Accident.

THE following paragraph from the *Glasgow Herald* of Monday last is of interest from the fact that it was placed under the headline of "A Carriage Accident" in place of "A Motor-Car Accident," a title which from the presence of a motor-carriage many newspaper correspondents would have felt justified in applying to it. The motor-car party referred to was in charge of Mr. J. D. Brimlow, secretary of Stirling's Motor-Carriages, Ltd., of Hamilton, and had been for the past two weeks on tour in the Highlands. On inquiry on Wednesday I was pleased to learn that the injured gentleman, Dr. Edwards, of Glasgow, was rapidly recovering from the effects of the regrettable accident.

On Saturday afternoon, as Miss Hay, Kinloch House, accompanied by a lady friend, was driving in a phaeton on the public road a short distance above Kinloch, a motor-car going in the same direction overtook them at a sharp turn of the road in the wood, where neither party could see the other until close up. The spirited horse driven by Miss Hay became very nervous, and reared and plunged in a dangerous manner. One of the gentlemen in the motor-car came promptly to help Miss Hay, but when trying to control the frightened animal it again reared, and fell upon him. When extricated it was found that the gentleman had received a very severe scalp wound, and was bleeding profusely. The horse was also much cut about the legs. The gentleman who had been hurt was at once conveyed to Kinloch, and every attention was given him until the arrival of Dr. Taylor from Dunkeld, and he had the wound properly dressed.

### The Motor-Car and the Life-Boat.

IN several places in the North on Saturday last demonstrations in aid of the National Life-boat Institution took place. At Girvan in Ayrshire the demonstration was most up to date in having the presence of a motor-car and motor-tricycle, which are as yet novelties in that district. The cars, which belonged to Mr. John Stirling, who is at present residing in Girvan, led the long procession of cycles, etc.

### The Trossachs.

THE invasion of the charming little village of Aberfoyle, the starting point of the Trossachs, the other week by the motor-car was the occasion of considerable excitement among the inhabitants. The horseless wonder was literally "gaped at" with open-mouthed astonishment by old and young alike, the smart manœuvres of the driver also coming in for a fair share of admiration. A motor tour through the Highlands of Scotland in the present fine weather and at this season is particularly delightful, and it is surprising the incredible amount of ground which can, without the sense of hurry, be covered. The roads here are delightfully undulating in a great many places, and a very fair speed can be averaged in some of those beautifully secluded highways and byeways "far from the madding crowd."

### A Good Example.

ALL drivers of horses are not prejudiced against motor-cars. When driving recently in an automobile from Lanark to Carlisle I passed a wagonette and pair of fine bays which showed evident signs of terror and an inclination to bolt on our slowly passing them on the first speed going up a stiff hill. It must be confessed our first speed was a little noisy, and I was not surprised that the animals were alarmed. However, the driver kept his horses well in hand, and after walking alongside us for a while whipped them up and passed us. He turned after going a short distance and made his team meet us face to face this time and pass. After going a little further he turned again and once more overtook us, repeating these manœuvres over and over again

until his horses discovered that we had no intention of harming them, and finally paid not the slightest attention to us. If the sensible action of this driver were followed by others we should hear less about those alarming "motor-car accidents."

#### The Scottish Police.

THE petty spitefulness (one might almost call it) shown by the English police towards autocarists, and the shamefully one-sided treatment they receive from a certain section of the Bench in that enlightened country when up for an alleged but often undefined charge of lawbreaking, is, happily, practically unknown in this part of the country. Whether it is that the Scottish police are more intelligent or more tolerant than their brethren of the South or that Scottish autocarists are more law-abiding is a moot point, but the fact remains that charges of furious driving, failing to stop when signalled to, and all the other "heinous crimes" which "chauffeurs" are supposed to be addicted to, are practically non-existent here.

"BROWN HEATHER."

### THE GREFFE FRICTION CLUTCH.

ALTHOUGH the use of friction clutches in engineering work is by no means a new departure, yet the revival of the horseless-carriage movement would appear, judging from the large number of new devices which have lately come under our notice, to have given an impetus to the devising of new forms of clutches. Among these we may mention that which has been lately brought out by M. E. P. Greffe, of 34 Rue Philippe-de-Girard, Paris, of which we are herewith enabled to publish a brief description and several illustrations, Figs. 1, 2 and 3. The illustrations show the clutch arranged in such a way on the crank shaft of a motor-car as to control by a single lever the putting in and out of gear of two variable speeds, and to disconnect entirely the motor from the power-transmitting mechanism. Referring to Fig. 3, it will be seen that the motor-shaft *C* has keyed on it a disc or pulley *B*, to the periphery of which are attached four shoes *D*. The shoes project beyond the pulley *B* on both sides,

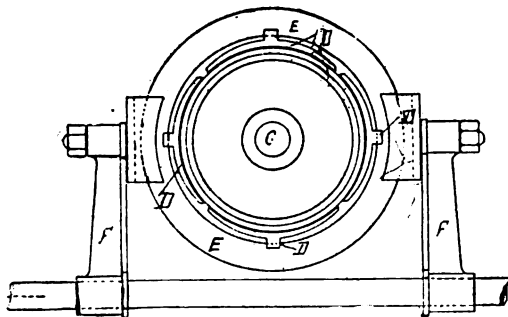


FIG. 1.—END VIEW OF GREFFE FRICTION CLUTCH.

and are so pivotally mounted on it that one side or the other may, under pressure, be moved slightly downwards, the opposite end, of course, rising a corresponding distance. At each side of the disc *B* are two pulleys *A A'*, running loosely on the shaft *C*; the faces of these pulleys, which are directly under the projecting portions of the brake shoes *D*, are covered with leather. It will be noticed that the outer faces of each of the shoes *D* are provided with longitudinal ridges or projections, the upper surfaces of which form two inclined planes. Fixed round the disc *B* and shoes *D* is a thin steel ring *E*, which is free to slide the whole width of the shoes *D* under the action of the levers *F*, which terminate in a pair of forks, between which, but not in contact with the same, is the ring *E*. When this ring is placed in a central position, the disc *B*, the shoes *D*, and the ring will all rotate without transmitting any power to the pulleys *A A'*. By

forcing the lever *F* over to the left the ring *E* is also carried in the same direction, and, meeting the inclined planes of the balanced shoes *D*, the latter are pressed down into contact with the face of the pulley *A*. Similarly, if it is

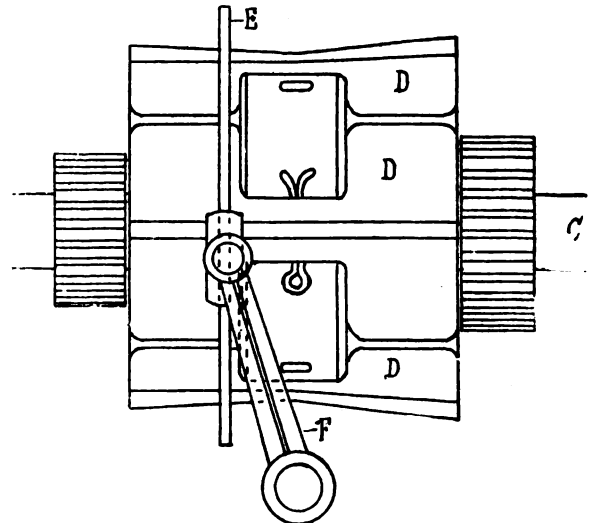


FIG. 2.—ELEVATION OF GREFFE FRICTION CLUTCH.

desired to make connection between the shaft *C* and the pulley *A'*, the ring is, by means of the lever, forced over to the right, the right-hand end of the shoes *D* then being brought into frictional contact with the pulley *A'*. Rigidly connected with the pulleys *A A'* are two spur wheels *G G'* of different diameters, which transmit the power at their respec-

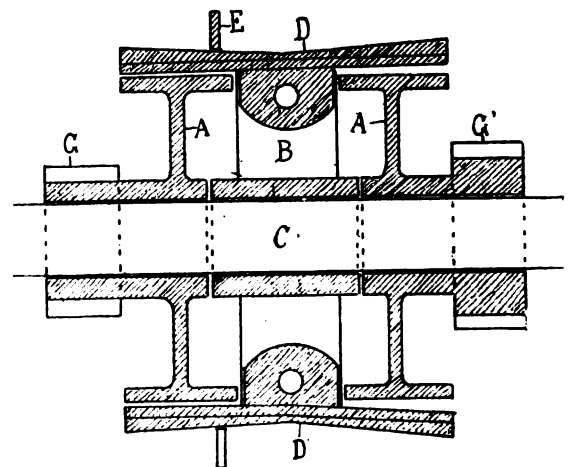


FIG. 3.—SECTION OF GREFFE FRICTION CLUTCH.

tive speeds to corresponding spur wheels on an intermediary shaft. M. Greffe, who informs us that very little pressure is required on the lever *F* to alter the position of the ring, has sent us a diagrammatic circular showing his clutch arranged for use on De Dion motor-tricycles, Bollée voiturettes, and for both belt and spur-wheel driven motor-carriages.

A NEW firm has just been formed at Nancy (Faubourg Saint Georges), France, under the style of Thomas & Co., to deal in motor-cars and motor-tricycles.

WE learn that Mr. E. S. Morley, cycle agent, Diss, Norfolk, is now carrying a stock of motor-car spirit, and is thus enabled to supply the wants of automobilists passing through that district.

THE concern known as La Marque Georges Richard, 13 Rue Theophile-Gauthier, Paris, builders of the Richard motor-cars, is being reorganised, a company having been registered with the title La Société des Etablissements Georges Richard, with a capital of £320,000.

## A LONG DISTANCE RUN BY A STEAM LORRY.



JUST on the point of going to press we have received from the Clarkson & Capel Steam Car Syndicate, Ltd., of Devereil Street, London, S.E., the following interesting account of the journey of their vehicle from Liverpool to London last week:—"The car started from Liverpool by road with a load of three tons on Tuesday afternoon, August 8th. The first day's run was forty-nine miles, *via* Widnes, Warrington, and Sandbach. The second day's run, thirty-one miles, was to Cannoch. On the third day the car passed through Birmingham. There was a congestion of traffic in the vicinity of the Bull Ring, which we are told is a notoriously dangerous turning: the descent is steep and the road surface also slopes inwards towards the curb. At the worst part of the road the driver was requested to stop by an inspector of police for the purpose of traffic regulation, and after an interval was directed to proceed. On releasing the brakes the car moved quickly, so the driver put the brakes on again, and although the wheels were locked and the motion somewhat arrested, the car continued to move both forward and sideways towards the curb; scotches were used but were dragged along, and the car continued to slowly and deliberately glide by the irresistible force of gravity along the smooth setts. When the curb was reached the front wheels slowly mounted and then advanced across the pavement to the plate glass window of a cycle shop. When the car touched the glass it did not break for a perceptible time, and the driver says he could see the glass bend before it finally gave way; then the car stopped and the inspector at once told the driver to remove his hands from the levers in order that he might be satisfied that the brakes were properly applied. This he did, and the police, who were most helpful and even courteous, were convinced that, as one of them said, 'No mortal man could have averted the accident under the circumstances.'

"We give you particulars of the accident because reports have got into the daily papers that the brakes failed to act. This was not the case, and we hope you will assist us in contradicting the statement. Some little damage was done to the car but not sufficient to prevent it proceeding at once. The driver's nerve was rather upset by the accident, so he decided to put up for the night at Mereden, about six miles further on; the day's run being twenty-nine miles.

"After receiving a telegram Mr. Clarkson went down the following day (Friday) and drove the car all Friday night, getting to Fenny Stratford (fifty-one miles) at 8.45 a.m. on Saturday. Here they rested and took in oil. They had experienced much trouble at several places in obtaining water by reason of the drought, getting a few pailfuls at one place and a few at another. This trouble would have been aggravated but for the excellent working of the Clarkson condenser with which the car is fitted, and it may interest your readers to know that less water was used on our car than any other in the recent Liverpool trials.

"After leaving Fenny Stratford we discovered that the damage done to the burner at Birmingham was causing trouble; the protective fire-clay covering on top of the burner had been broken away and, in consequence, the burner-top was exposed directly to the heat and began to perish. However, we tried to get on, and it was not until we arrived at St. Albans that we found the burner-top must be renewed before we could proceed. Accordingly, we put the car up at 'The George' and returned to town by rail. On Monday a man went down with a new top, and as soon as Mr. Clarkson's other engagements permitted he went and drove the car back to town, the final run of twenty-one miles being accomplished in 5½ hours, without incident of any kind.

"The load was delivered in good condition to Messrs. Anderson, Tulloch & Co., who are greatly interested in the run. We are informed by Mr. Shrapnell Smith that this is the longest heavy load run that has ever been made, and it

is gratifying to us to be able to report that the car, which is the first heavy vehicle we have constructed, has stood the journey well. The wheels, which, as is well known, are subject to severe stress, have not given the slightest trouble, the same being true of driving chains and axle bearings. The automatic water-feed to the boiler worked perfectly the whole time; there is a little perceptible wear on the engine brasses, as might naturally be expected, but with the single exception of the renewal of the burner-top, owing to the Birmingham accident, the vehicle completed the trip without a breakdown of any kind."



MESSRS. MAROT, GORDON & Co., 37 Rue Brunel, Paris, motor-car builders, etc., have just increased their capital from £4,400 to £16,000.

ONE of the Dunlop motor-tandems was shipped to Australia last week for use on the Sydney and Melbourne tracks during the coming Australian cycling season.

THE following was copied from the notice-board at the Automobile Club yesterday:—"A companion desired in February next, to travel from Hong Kong to Paris and London; one used to photography preferred."

WE regret to learn that the Automobile Club have unfortunately been obliged to give up for the present season their proposed tour in Scotland. The cause is that it has been found to be too late to secure accommodation at the hotels. It is hoped, however, that the tour will take place next year.

A WRITER in the *Leicester Post* referring to Mr. W. Turner's recent letter, commented upon in our columns last week, considers the thanks of the public are due to him for getting rid of his pony. "The public at large," he adds, "will now be safe from that particularly unmanageable hay-motor." The question is, however, Where is the pony now?

LORD ALWYNE COMPTON, M.P., went to the recent *fête* at Biggleswade from Earl Cowper's residence at Wrest Park, Silsoe, on Mr. Dan Albone's motor-car. Mr. Albone took him back to Silsoe on his car in the evening. Will Lord Compton have to be added to the Parliamentary-Automobile Party?

AMONGST those recently elected to membership of the Automobile Club are the following:—The Marquis of Anglesey, Sir John Carden, Bart., Dr. Allingham, Messrs. Charles Jarrott, Fred Ballard, J. Ernest Hutton, J.P., A. H. Barkworth, F. D. Lyon, E. Fitch Shepard, Henry Mann, John Garroway, Henry Jephson, and Charles Connah.

THE Melbourne Carriage, Motor and Cycle Co., Limited, has been registered, with a capital of £3,000 in £1 shares, to acquire the business carried on at Dudley Road, Wolverhampton, by Frederick W. Summerfield and Herbert A. Beech, and to carry on the business of cab, carriage, motor, and cycle builders, etc.

THE Dobrashian Motor Syndicate, Limited, has been registered with a capital of £2,000 to adopt an agreement with G. S. Dobrashian, to acquire and turn to account any patents and rights, and to manufacture and deal in the articles to which such patents, etc., relate. Registered office, 5, Copthall Buildings, E.C.

THE Committee of the Health Exhibition to be held in Blackpool in September and October next, in connection with the Congress of the Royal Institute of Public Health, have decided to include a display of motor-cars. The Committee of the Automobile Club and the Committee of its Liverpool Branch, the Liverpool Self-Propelled Traffic Association, have promised to assist in every possible way in forming a good automobile section. Before determining whether any trials of motor-vehicles shall take place, the Committee are desirous of knowing how many exhibitors there are likely to be in the section, and the number and nature of the exhibits.

## A CARBONIC ACID MOTOR-CAR.

FOR nearly three years Mr. C. D. P. Gibson, a well-known chemist and mechanical engineer of Jersey City, N.J., has given his attention to the construction of a motor-car propelled by means of carbonic acid, a gas of wonderful expansive power, but beset with difficulties in its practical application to vehicles. Thousands of dollars have been spent in futile attempts to control it, its tendency to freeze in the valves being an insurmountable obstacle to previous inventors in this line.

The vehicle which Mr. Gibson has chosen to first exemplify his system is a stanhope with the usual tubular truss frame and tangent spoke wheels, the front 36 in. and the rear 38 in. in diameter. The customary compensating gear regulates the rear wheels, its location being in the same plane as the driving sprocket. Provision is made for an extra seat if desired. While the general design of the carriage is attractive and all the visible details finished in a thoroughly mechanical manner, interest, states the *Horseless Age*, centres chiefly in the ingenious mechanism concealed in the body of the vehicle, where is located an engine weighing only 32 lb., yet capable of developing 12 h.p.—the lightest engine for its power so far known.

The carbonic acid is stored in commercial cylinders, tested to 6,000 lb. pressure, and each having a capacity of 10 to 12 lb. of acid. They are about 4 ft. in length and 5 in. in diameter. Eight of these are carried in a carriage, four on each side, constituting what Mr. Gibson calls a "battery," the two batteries containing enough acid for a run of eight miles on country roads. The reason for the arrangement in two batteries is to prevent the operator from exceeding the radius of action of the vehicle. When one battery is exhausted it is a sign to return to one's destination, and inasmuch as the second battery contains the same amount of acid as the first, a safe return is assured. This present method of storage, however, is merely the best available at present, and when vehicles are manufactured in quantities it will be superseded by an improved method which Mr. Gibson says will allow a run of thirty miles on one charge.

The acid is conducted through the ordinary commercial valve and a small pipe to the very heart of this system, the Gibson valve, in the engines and the cycle, controlling the flow of the acid under all circumstances, which prevents freezing and is easily manipulated. Particulars of this achievement Mr. Gibson is not prepared to give for the reason above stated, patents having been applied for in all foreign countries.

In the rear of the body are two valves, each controlling a battery, one only being opened at a time. To make due allowance for expansion the cylinders are filled only half full of gas, the rest of the space being left for the air cushion, which serves the same purpose as a dome in a steam boiler.

The ordinary working pressure of the acid is between 2,500 and 2,700 lb., maintained by a gasoline burner under the expander, the flame of which is closely regulated by a diaphragm. If the acid should reach a temperature giving 3,000 lb. pressure the diaphragm automatically moderates the flame and immediately brings the pressure down to the normal. Any higher pressure than 3,000 lb., could not be practically employed, because the wear and tear on the apparatus would destroy the economy. A gallon of gasoline will supply this burner for a week. The engine which handles this great force is surprisingly small and delicate in appearance, although it is in reality as strong and durable as science can make it of such weight and for such duty. It is of the horizontal, reciprocating type and has two cylinders, 1 $\frac{3}{4}$  in. in diameter with 4 in. stroke. A noticeable feature is the absence of noise, the little 5-16 pistons and the valves performing their functions almost as silently as clockwork. At 500 revolutions and 500 lb. pressure the engine develops twelve horse-power, which is sufficient to handle a heavy truck on city

streets. All parts are made of hardened, ground and tempered steel, and are encased from dust. Power is transmitted direct to the rear axle from a nine tooth sprocket wheel of 1 $\frac{1}{2}$  in. pitch on the engine shaft to a thirty-nine tooth sprocket on the rear axle.

One lever performs all the operations of controlling the vehicle with the exception of the band brake on the rear axle, which is brought into play by a pedal, but is seldom used because the engines when shut off automatically brake the carriage. In the manipulation of this lever a right and left motion steers, a rocking motion controls the power, and by raising the handle the engine is reversed and energized by the same rocking motion.

There are no gauges to watch and burden the operator with anxiety. The controlling mechanism is kept free from vibration by means of compensating devices in the frame and in the controlling mechanism itself, so that whatever the relative positions of the wheels the lever is always safe in the hand.

A unique feature of this system is the immense reserve power that is available for bad roads, for hills and emergencies of any kind. In the course of an experimental trip deep sand was traversed with ease, and as conclusive evidence of the power of the engine the vehicle was very slowly run into a barn over an abrupt rise of six inches with the passengers in it, and without any momentum such as is generally required to surmount such an obstacle. Carbonic acid has hitherto been so costly to produce as to make its economical use for power purposes out of the question, but it is now stated that the cost of production has been lowered to 12s. 6d. per ton, rendering it available for this purpose, and a strong syndicate is being organised in New York to develop the Gibson system for road vehicles and street cars.

## EXCESSIVE SPEED OF MOTOR-CARS.

At the Liverpool Police-Court on Tuesday, Maurice Souvestrie was summoned under the Locomotive and Highways Act, 1896, for having on the 5th instant driven a motor-car down Hardman Street at a speed greater than was reasonable and proper having regard to traffic in the street. It was given in evidence that the car was driven at the rate of at least eighteen miles an hour. A fine of 40s. and costs was imposed. The same defendant, whose name appeared on the information as Maurice Gildart, was summoned for having on the 3rd inst. in Greenbank Road driven a motor-car so as to endanger life or limb. In this instance a police-officer said that the speed was from fourteen to fifteen miles per hour, while the driver of a wagonette, who said he would have been run into but for the fact that his horses were walking, estimated the speed at twenty miles per hour. The Bench inflicted a fine of 40s. and costs. Mr. Cripps supported the informations, and defendant was represented by Mr. Watkins, who urged that the defendant ought at the time to have been told that he would be summoned, so that he might have an opportunity of procuring witnesses as to the speed at which the car was being driven.

THE *Calcutta Englishman*, in its last issue to hand, states that the motor-car for the conveyance of mails to the railway station in Colombo, Ceylon, is to arrive shortly, and according to Mr. Pennycuik's report it is to be a Leyland steam car, having a carrying capacity of one ton.

A COMPANY, composed of Chicago and Mexican capitalists, is being formed for the purpose of establishing an automobile service in the City of Mexico. It is understood that an effort will be made by the company to obtain an exclusive concession for the operation of automobiles in that city for a long term of years from the Mexican Government, but it is doubtful if such a privilege will be granted.

At the last meeting of the Buckingham County Council, Councillor H. J. Johnstone called attention to the rate of speed at which motor-cars are at present travelling and the danger to the public as well as the inconvenience to other traffic arising therefrom, and moved, "That in the opinion of this Council the Local Government Board should take measures to secure the registration of motor-cars and their drivers." A long discussion ensued, and in the end the resolution was carried.

## DRIVING A MOTOR-CAR FURIOUSLY.

At Newport, Isle of Wight, the other day, Mr. William Player Bugslocke, of Ryde, was summoned for driving a motor-car furiously through Haylands into Ryde on July 24th. Evidence was given that the defendant was driving at the rate of from eighteen to twenty miles an hour. Numerous complaints were stated to have been received, and one witness said the pace was enough to paralyse children. The Chairman (Lieutenant-General the Hon. G. J. L. Calthorpe) said the Bench had no doubt defendant was driving a great deal faster than he was allowed to do by the Act, and as he was fined £5 in February for a similar offence he would now have to pay a fine of £7 and £1 os. 6d. costs.

## THE LONDON STEAM OMNIBUS COMPANY.

An extraordinary general meeting of the shareholders of the London Steam Omnibus Company, Limited, was held on Thursday last week at the Hotel Cecil, London, W.C., for the purpose of considering and, if approved, of passing resolutions changing the name of the company and altering the articles of association; and also to receive a statement by the directors as to the arrangements made with the vendors for the reduction of the purchase consideration payable to them, and for varying the terms of the licence granted to the Company on August 5th, 1898, such arrangements being part of the plan agreed upon for the settlement of actions commenced against the vendors and others by certain shareholders.

Mr. E. H. Bayley (Chairman of the Company), who presided, said: As explained in the circular that was sent round, this meeting has been called, in the first place, to arrange for the general meetings of shareholders to be held twice a year, instead of only once. We arranged some months ago to call you together to pass the necessary alteration in the articles of association; but the shareholders' actions were commenced, and it was considered advisable to postpone the matter until the litigation was settled. Now that the actions are settled, this meeting has been called, and I shall presently put the proposal to the vote. You are aware of the valuable concessions that have been obtained from the British Motor Company, the vendors of the patent rights. The broad general result is that you are now £20,000 in cash and £140,000 in shares better off than you were six months ago. It is right, as you know, that the negotiations which have produced the satisfactory improvement date back from before the registration of the company. The terms originally asked by the vendors were much more onerous than those ultimately published in the prospectus. Among other conditions demanded was one that this company must purchase all its omnibuses from the vendors, and you will easily understand that this would doubtless have meant paying an excessive price for an inferior article. Another condition was that the vendors' shares, £140,000 in value, should not be deferred shares, but should rank equally with the cash shares. I should here explain that one, if not two, out of the five directors were nominees of the vendors, and, therefore, could not reasonably be expected to oppose their claims, which made it all the more difficult for what I may call the independent directors to fight your battle. Three of us, however—Messrs. Mace, Hall, and myself—were absolutely independent, and we got the two obnoxious conditions, to which I have referred, and others struck out. The prospectus was issued and the capital subscribed, and now that all disputed matters have been pleasantly settled I wish it to be placed on record that we directors have withdrawn nothing and modified nothing that we stated in the prospectus. If it had to be issued again, we should not alter a syllable. After the capital had been subscribed we still continued to press the vendors for concessions, and our efforts were attended with a considerable measure of success. The truth is that Mr. Lawson, who is the leading spirit of the British Motor Company, has a great stake in the success of the motor industry, and especially in this omnibus company. He owns over 200 patents in connection with motors, which will greatly increase in value if this company prospers, and which, on the other hand, will greatly depreciate in value if this company fails. Using this fact as a lever, we continued to press Mr. Lawson for a revision of the purchase price, and before I had the pleasure of making Mr. Hunter's acquaintance Mr. Lawson had given a pledge to me and also to Mr. Mace to give up the £140,000 of shares and some of the cash. When 250 shareholders applied to have their money back and commenced legal proceedings which could only end in throwing the company into liquidation, Mr. Lawson, rather than see the company wrecked, agreed to give up not only the shares, but £20,000 in cash. He has also granted a new licence on better terms than the old one. Mr. Hunter exercised a wise discretion, and took an enlightened view of his clients' interests, when he advised them to drop the actions and accept this compromise rather than throw away their money in law. The litigation has thus been satisfactorily closed. As far as the two gentlemen are concerned who represented the British Motor Company on the board, the agreement provides that Mr. Lawson shall procure their retirement, and I presume that their resignations have been received. As to the three independent or shareholders' directors, I intimated some months ago that, having been unanimously elected chairman of the Daimler Motor Company, I intended to devote my time to making that great undertaking a success, and should take a favourable opportunity of resigning my seat on the board of this company. Mr. Mace and Mr. Hall decided to follow the same course as soon as this litigation was ended and a new board could be arranged for. Although this litigation has stopped the progress of

the company for six months, and delayed the placing of omnibuses on the streets, I have much pleasure in stating that the organization of the company is in perfect working order, and there is no reason why you should not now go full steam ahead. Above all, we have worked out the omnibus itself, which when we started was only a success on paper, into a proved mechanical success. It has been tested practically by running over 1,000 miles on every description of road without a hitch, and at a cost which, under good management, will yield enormous profits as compared with those of the horse-drawn omnibus. We have concluded what both we and Mr. Hunter consider a very valuable contract for the building of eighty omnibuses, and my advice is not to lose a moment in getting them at work in the streets. It would be a good stroke of business to offer the builders, who are the Daimler Motor Company, some inducement to get a considerable number out in advance of the agreed time, so as to be ready for the spring traffic next year. Mr. Straker will have some minor improvements to suggest; but, in the meantime, the motors and the bulk of the machinery should be pressed on with, or you will lose the time when they ought to be at work coining money. It is my firm conviction that, with good management, you ought at this time next year to be receiving a dividend of at least 10 per cent., and that your shares will then be at a high premium. I now beg to move the first resolution, which reads as follows: "That the name of the company be changed to the Motor Traction Company, Limited."

Mr. J. G. Hall (director) seconded the resolution, which was unanimously agreed to.

The Chairman: I have now to propose: "That Article 46 shall be altered by substituting for the word 'once' the word 'twice,' so that the latter part of the article shall read: 'A general meeting shall be held twice in every year (after the company is incorporated), on such day and at such place as may be determined upon by the board.'"

Mr. J. H. Mace (director) seconded, and the resolution was carried unanimously.

Both resolutions were passed without discussion.

On the motion of Colonel Harris a vote of thanks was accorded to the chairman and directors, and, the Chairman having suitably acknowledged the compliment, the proceedings terminated.—*Financial News*.

## MOTOR-CAR TOURS THROUGH THE MIDLANDS.

The Motor Touring Company, during the last holiday week, commenced a series of motor-tours through the most picturesque and historic places of interest in the Midland shires, commencing on Bank Holiday with a run to the old Cathedral City of Lichfield. The car started from Stechford Station, near Birmingham, at 2.30 p.m., the rain in the morning having prevented the advertised run to Stratford-on-Avon. A full equipment of passengers boarded the car, and immediately—under the able supervision of Mr. T. Morrison, manager of the Company—we started at a good pace on our journey, but on arrival at the noted Fox and Goose Inn a stalwart city police officer stopped our career, and informed our pilot that on account of the vehicular traffic occasioned by the Birmingham races being held the same day, the car would have to go a considerable distance out of its way to reach its final destination. Our guide at once obeyed the instructions given, and steered the car in the direction desired, which was along the main road as far as Church Lane, Aston, where we turned off and proceeded on our journey through Aston Manor via Gravelly Hill, Erdington, Wyde Green, and Sutton, reaching Lichfield about 4.15 p.m., after a most enjoyable run. Our return journey was made at 6.15 via Coleshill, Minworth, and Castle Bromwich, arriving home in good time, about 8 p.m., all expressing themselves well pleased with the pleasant outing.

On Tuesday, the 8th inst., we were again invited by the manager to take another and more extended whole-day run to the charming Vale of Evesham. The car started at 11 a.m., piloted again by the manager of the Company, Mr. T. Morrison. The holiday, together with short notice of run announced, no doubt prevented a full complement of passengers; nevertheless a dozen turned up, and our car was soon on its journey, which was a circuitous route by way of Stonebridge Hotel, where we arrived at 11.15 a.m., Kenilworth 12.30 p.m., Warwick 1.17 p.m., Stratford-on-Avon 2.10 p.m., Bidford 3.10 p.m., arriving at Evesham at 4.15 p.m., after an exceedingly stiff climb up the Bostock Hill. The scenery en route embraced the most picturesque and beautiful landscape of the two famed shires of Warwick and Worcester. On arrival at Evesham we put up at the well-known Rose and Crown Commercial and Family Hotel, where an excellent dinner was speedily served. Our party having regaled themselves with the good things provided, we broke up into groups and sauntered round the good old country town until the blow of the horn by our pilot warned us that the time of departure had arrived, and immediately the car was remounted for its return journey, not before, however, a large concourse of townfolk and villagers had assembled to inspect the latest invention in vehicular enterprise. They evidently thought we had taken the town by storm, judging by the look of wonderment expressed on their features and the enthusiastic send-off they gave us on our departure. Promptly at 6 p.m. we started on our return journey via Alcester 6.45 p.m., Grocott Hill 7.40 p.m. (one and a quarter miles long), Moseley 9.17 p.m., arriving at Stechford at 10.15 p.m.

The weather being beautifully fine, and the roads in splendid condition the whole way, the drive proved a very enjoyable outing, the car going in splendid condition and without a single hitch throughout the entire journey, covering a distance close upon 100 miles, a record performance, we believe, yet accomplished by a motor-waggonette of its size.



There can be no doubt that shortly these wagonettes will be commonly seen on the main roads of England. We understand, in fact, already negotiations are being entered into with several English and the best Continental firms to place on our main roads the latest improved form of motor-cars. Birmingham being in the centre of most beautiful landscape scenery, there should be a great opening for the motor-car, especially should it prove a boon to the working classes, to whom a cheap and rapid means of transit to the popular rural resorts must be of incalculable value.—*The Birmingham Telegram*.

### A MOTOR PATENT UPHELD.

IN the Court of Appeal last week before the Master of the Rolls, Sir Francis Jeune, and Lord Justice Romer, judgment was given in the case of the British Motor Syndicate, Limited, *v.* Andrews & Co., Limited. This was an appeal against a decision of Mr. Justice Kekewich. The plaintiffs, as the registered proprietors of letters patent (No. 5,479 of 1890) granted to Frederick William Lanchester for "improvements in gas motor engines," brought the action to restrain the defendants from infringing the patent. Lord Justice Romer, who read the judgment of the Court, said the defendant's engine was an improved Korting, but it was started according to Lanchester's invention, and therefore was an infringement. It followed that the plaintiffs were entitled to succeed on this appeal, and there must be an injunction restraining the defendants from further infringing the plaintiff's patent with an inquiry as to damages. Plaintiffs would have their costs, both of the appeal and of the Court below.

### SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**NIPPLES FOR MOTOR-CAR WHEELS.**—All gauges, lowest prices, prompt deliveries.—John Child Meredith, Hampton Street and Summer Lane, Birmingham.

**STEAM CAR FOR SALE.**—Powerful and simple; to carry four to six passengers; covered-in, solid rubber tires; £250.—W. H. Brown, Engineer, Devizes.

**TRICYCLE FOR SALE** at a low figure. Practically new and latest pattern; genuine De Dion throughout; with all accessories; can be seen in London.—Box 72, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**WORKS FOR SALE.**—Modern plant. Promoters note: Purchase in cash or shares.—"Engineer," 58 Waterlow Road South, Wolverhampton.

**ELECTRICAL ENGINEER** seeks Situation. Thoroughly experienced in motor-cars.—Apply Box 83, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

**WANTED.**—Benz or Decauville Car; in good condition, and cheap.—Full particulars to Guest, Ockbrook, Derby.

**DAIMLER MOTOR-WAGONETTE**, 5½ h.p., grand carriage, in perfect condition, new tires, re-painted and upholstered, to carry four or six, free trials to buyers.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**MOTOR-WAGONETTE** by Daimler, 5½ h.p., to carry eight passengers besides driver, geared low for hill climbing, suitable for seaside resort, in grand condition, almost new, free trials to buyers; price £275.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**THREE MOTOR DELIVERY VANS.**—Could be made into wagonettes; in good condition; to be sold at ridiculously low price to make room for new carriages.—Can be seen at Frank F. Wellington's, 36 St. George's Square, Regent's Park, N.W.

**BENZ INTERNATIONAL SOCIABLE CARRIAGE**, to carry three, beautifully upholstered, very powerful, with all latest improvements; price £125.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**GENUINE DE DION QUADRICYCLE**, interchangeable to Tricycle, very little used, exceptional bargain, in grand running order, price £65; De Dion Tricycle, 1½ h.p., fitted with front attachment if required, in grand order, price £45; De Dion Tricycle, 1½ h.p., really fine machine, good goer, price £35; De Dion Tricycle, 1 h.p., splendid running machine, price £30; Two Bollées in grand working order, to be sold cheap; also two Werner Bicycles, £20 each.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

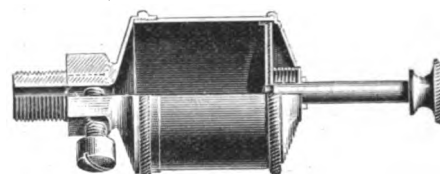
**PANHARD MOTOR**, 6 h.p., all latest improvements, complete for running, with fly-wheel, burners, pressure tank, starting gear, governing gear and carburettor; first-class condition; price £55.—Napier, Vine Street, York Road, Lambeth, London.

### Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**PLATINUM.**—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797. 24

**MOTORS ON HIRE.**—Daimlers, Panhards, Benz, New Beestons, etc., in good order, by day, week, or month.—The Yorkshire Motor-Car Co., Ltd., Bradford.



**BENZ**  
GREASE CUPS,  
3/6

THE SOUTHERN MOTOR-CAR CO., 59 BRIXTON ROAD, LONDON, S.W.

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.



### The Automobile Club's Autumn Tour.

THE secretary of the Automobile Club has kindly furnished us with a copy of the programme of the forthcoming autumn tour. On Saturday, September 16th, there will be a run to Folkestone. The distance is 77½ miles, the route decided on being *via* Maidstone. On the following day, Sunday, members will cross over to Boulogne, and witness the finish of the Paris-Boulogne race, returning to Folkestone the same day; on Monday, September 18th, there will be a day tour from Folkestone to Canterbury, Minster, Sandwich, and back to Folkestone. On Tuesday, September 19th, members will proceed to Dover for the opening of the motor-car show which is being promoted by the Mayor of that city, returning to Folkestone the same evening. The return journey to London will be made on Wednesday, the 20th. As usual, arrangements are being made for the provision of seats in a club vehicle for members who do not own motor-vehicles. If the present fine weather should hold out, the tour should, like its predecessors, prove both interesting and enjoyable.

### An Example for Horse Owners.

THE note, "A Good Example," from our Scottish correspondent last week is worthy of more than passing notice, for it is rarely that one comes across the owner of a horse or horses who is determined to make his animals accustomed to automobiles. We know that in writing this note we shall draw upon us the ire of some of our contemporaries who devote themselves to horses, but we venture to suggest that a large proportion of the accidents ascribed to the motor-vehicle are due to the stupidity of drivers who habitually drive with loose reins, so that quick control of their horses is impossible. We believe that if a frightened horse is properly checked and pacified before he is terror-stricken and unmanageable, a runaway can very often be averted. But when the reins are hanging limp over the dashboard the horse gets the start and is soon beyond control. The driver of a horse is assuming a moral and legal responsibility when he brings an animal upon the highway, where all have equal rights with himself, and the time has arrived when this responsibility should be recognised, and drivers held accountable for the animals they guide. The drivers of motor-vehicles are, and will for some time at least be, under strict surveillance, and justice demands that drivers of horses be treated in the same manner.

### The Latest "Endurance" Car.

MESSRS. MULLINER, the well-known carriage builders of 28 Brook Street, Bond Street, W., who have established quite a reputation for carriage building work for motor-cars, have just completed the body of a new Endurance motor-car for Mr. J. Burns, of 44 Berners Street, W., and on Monday last we had an opportunity of inspecting the vehicle. It takes the form of a three-seated dog-cart, and is

generally of a most attractive design. The body is painted in black and light olive green, picked out in maroon and fine-lined yellow. The car is fitted with cycle-type wheels, shod with pneumatic tires, while the front of the vehicle is adapted to receive a large touring basket. The battery and induction coil in connection with the electrical ignition are carried in a box on the floor in front of the driver. The cushions are of the spring type, of which Mr. Burns is making a speciality, and from our brief trial appear to be very comfortable. Another feature of the car is that by simply removing four bolts the body can be instantly detached from the frame, carrying the motor and transmission gear. Altogether the vehicle is of taking appearance, and, in view of the finish Messrs. Mulliner have given to it, whoever becomes its owner will have a car of which they may justly be proud.

### Ladies and Motor-Tricycles.

HAPPENING again during the week to call on Messrs. Mulliner, the well-known carriage-builders of Brook Street, W., we were shown a convertible motor-quadracycle rejoicing in the name of "Wildfire," which the firm are at present engaged in re-enamelling. On enquiry we find that the machine, which is a Peugeot fitted with De Dion motor, has just been sold by the Motor-Car Co., of Shaftesbury Avenue, W.C., to Mrs. G. H. de Bathe (Mrs. Langtry) for the use of that lady and her husband.

### Carriage Builders and Motor-Cars.

THE *Carriage Builders' Journal* has published a special motor-car issue, devoted to a description of the vehicles shown at our recent Exhibition at the Agricultural Hall. In commenting on the subject of automobilism our contemporary remarks: "We cannot shirk the motor-car even if we are inclined to do so. It is with us, and we cannot get away from it. We may try to argue it away, but it will not budge, and all we have to do is to make the best of it. As Galileo said, '*E pur si muove*'—it moves, and we have to reckon with it. We may prefer the horse and the horse-drawn vehicle, but the world is taking to the motor-car, and as wise men we must recognise and adapt ourselves to the new condition of things. As we remarked last month, the motor-car has come and has come to stay, consequently carriage builders have no resource but to make up their minds to understand it and do their best with it."

### An "Accident" or a "Miracle."

"AT the very moment of writing" (another attack on motor-cars), says the editor of the *Stable and Kennel*, "we have to record a great commotion near our offices, in the Strand, caused by a motor delivery wagon suddenly dashing out of Wych Street into the midst of the traffic. It has startled all the horses in the neighbourhood, and it will be little short of a miracle if some awful accident does not happen." We have scanned the daily papers to learn whether the "awful accident" happened or whether the "miracle"

occurred. We have also examined two or three 'bus drivers whose vocation led them by the *Stable and Kennel* on that fateful morning, but, up to the time of writing, we have not been able to ascertain whether the awful accident predicted followed the startling of the horses or the miracle occurred after the great commotion. Anxious for information we shall be glad to hear what our friend whose offices are in the Strand has to report. Meanwhile he will be glad to know that the wood pavement of Shoe Lane in front of our *sanctum sanctorum* has materially lessened the clatter and noise produced by the horse-drawn vehicles that persist in passing from Holborn to Ludgate Circus.

#### Ladies and Motoring.

WITH reference to our comment last week on ladies and motoring the accompanying photograph will be regarded as conclusive evidence so far as Mrs. Bazalgette is concerned. The illustration shows the lady on her Benz Ideal, on which she travels many miles nearly every day. At first she had some little difficulty in turning the fly-wheel to start



MRS. BAZALGETTE ON HER BENZ IDEAL CAR.

the motor, but that she has overcome, and now drives herself in a very expert fashion. The car goes beautifully, and the other day she went from her home in Portman Square, W., to Southsea, leaving the former place at 9 a.m. and arriving at her destination at 5 p.m. Mrs. Kennard, the novelist, is also a lady motorist, who would probably be prepared to controvert the *Daily Telegraph's* assertion that the motor-car is not for the fair sex.

#### The Late Mr. Epstein.

WE regret to learn of the death at Broadstairs of Mr. L. Epstein, who was well known amongst electrical engineers as an inventor of an improved Planté storage accumulator. Mr. Epstein was an Austrian by birth, and received his technical education in Austria and in Germany. He was for several years director of one of Messrs. Siemens and Halske's branch works—that devoted to electrical accumulators. Here he evolved his battery, and, patenting it, he came to London to establish its claims for commercial use. He also devoted much attention to the design of motor-vehicles, his arrangement having not only accumulators, but the engines for charging them.

#### Lend a Hand!

ONE result of the accident to Mr. Rush's car on Monday last, referred to in other columns of the present issue, is that he has not a very good opinion of at least two fellow automobilists. After his car had overturned, and with his friend still underneath, two gentlemen went by in a motor-car, and, although signalled to for assistance, could not, as Mr. Rush puts it, "find it convenient to lend a hand." Our experience has so far been that automobilists are only too willing to render assistance to fellow motorists in distress, and we prefer to believe that the experience of Mr. Rush is the exception which proves the rule of the good feeling which prevails in the automobile world.

#### Omnibuses in London.

THE fact that the London General Omnibus Company can declare a dividend of 8 per cent. and secure to the shareholders a further bonus of 2½ per cent. will probably cause the directors to philosophise in the spirit of "let well alone." Besides, they have 16,000 horses, and to try experiments in the way of motor-traction on their own account would cost money. Add to this the fact that the chairman of the Company, Mr. John Pound, has had an unsatisfactory ride on a motor-'bus from Deal to St. Margaret's Bay, and the public may be certain that the L.G.O.C. is not likely to give much impetus to automobilism. It will not lead, but will not object to follow, and the directors "are carefully watching the question of mechanical traction." Meanwhile other people are doing what they can to develop mechanically-drawn 'buses, and some of these will shortly be seen in the streets of the Metropolis. At present we have seen the motor-car at its best as a fair weather car; but as the winter approaches attention will have to be given to the 'bus-like form suitable for winter work.

#### The Motor-Car for Strolling Players.

MANY times have we advocated the use of motor-vehicles and motor-tricycles in connection with the conveyance of goods and journeys of commercial travellers. The use of these cars should also extend in the theatrical profession, not only for the transport of the requirements of theatricals but also the conveyance of the players themselves. Not only would our actors and actresses thus become independent of the railway companies when on tour but they would also, at the end of each week's work, find the trip on their motor-vehicle have a reviving influence on their health and spirits. Already the idea is being developed in this direction by the Modern Marvel Co., Ltd. (Edinburgh), of which Mr. T. J. West is the general manager. This gentleman is about to commence an eight months tour with his cinematograph, travelling in a 5½-h.p. Daimler wagonette. Journeying from town to town, and conveying his own apparatus and staff, Mr. West will thus emulate the old strolling players and demonstrate the achievements of his motor-car in many towns and villages throughout Great Britain.

#### A Stand for Motor-Cycles.

THE Ailsa Craig Machine Co., of East Putney, S.W., are bringing out an improved stand for motor-tricycles. Many forms of stands are already in use to enable the rear wheels of a machine of this kind to be held off the ground so that the motor may be adjusted and experimentally run in the store shed, but the task of lifting the rear axle on to the supports has not been a light one. The new Ailsa Craig stand gets over the difficulty in a simple and effective way. It consists practically of two small lifting jacks combined with a support; the device is simply placed below the axle and operated in the usual way, the rear part

of the machine being lifted and held clear of the ground. We understand that the new stand has already met with the approval of several motor-cycle firms.

**Some Silly American Ideas.**

A GOOD many novel—we regret we cannot say practical—ideas have lately been brought forward by American inventors in the way of motor-car construction. Not long ago one of our transatlantic contemporaries published an illustration of a motor-car to the front of which was affixed a full-sized model of the fore-half of a horse, the claim of the inventor being that horses would be less likely to shy at such a car than at the ordinary horseless vehicle! The same contemporary now briefly refers to another novelty which has lately been patented by an American genius. It consists of a three-wheel tractor fitted with a petroleum-spirit motor. This is intended to take the place of the horse in ordinary vehicles—that is to say, any form of horse-drawn car can be attached to it. Not only so, but unlike other tractors no accommodation is provided on it for the driver. On the other hand, he is supposed to sit in the front of the trailing vehicle and control all the movements of the tractor—starting and stopping the motor, the variable speed gear, and the steering—by means of an ordinary pair of reins! We have carefully read the specification, but can find no mention of the driver's whip to urge on the motor should it prove obstinate!

**2½-h.p. English Motors for Tricycles.**

THE example set by Messrs. De Dion, Bouton & Co. in adopting a 2½-h.p. motor in place of the 1½-h.p. hitherto employed is being followed by makers of similar engines in this country. Although only a few weeks have elapsed since the introduction of the new motor by the French firm was made known in England, the Motor Manufacturing Co., Ltd., of 47 Holborn Viaduct, E.C., and Coventry, are already making a 2½-h.p. motor, while the Beeston Motor Co., Ltd., of Coventry, announce that, when desired, they will fit their tricycles with motors of the increased power. By the way, while on the subject of motor-tricycles, we note the *Scottish Field* falls into a slight error in stating that the Motor Manufacturing Company are offering a De Dion British-made tricycle at £24. If this were so we imagine the Coventry Company would soon have its hands very full of work. Of course it is only the De Dion motor that is offered at this price, not a complete motor-tricycle.

**Motor-Cars and Cycle Makers in Germany.**

JUST as in this country, some of the German cycle companies are turning their attention to the construction of motor-cars and motor-cycles. According to a consular report lately to hand, German cycle manufacturers consider that motor-vehicles are open to improvement and capable of being produced at lower prices, and it is with the object of participating in this new branch that the cycle companies are adding the manufacture of motor-cycles and cars to their existing business.

**A Stanley Steam Car in England.**

A STANLEY steam car has just reached this country from America. It has been brought over by Mr. H. N. Searles, of the Locomobile Co., of Newton, Mass., and yesterday, at Messrs. Mulliner's carriage depot in Brook Street, London, W., we had our first sight of this wonderful production. The car is of the ordinary four-wheel American buggy type, with seating accommodation for two persons. The road wheels are of the suspension type, shod with pneumatic tires, the total weight of the carriage being less than 400 lb. The boiler is fired by means of a petrol burner, automatically controlled. The carriage has, it is

stated, climbed an incline of 36 per cent., and will go up a gradient of 14 per cent. on a country road at a speed of fifteen miles an hour, while on the level it will travel at thirty to forty miles an hour. There is stated to be practically no vibration, no offensive odour, and no noise, except that in climbing hills there is a slight puffing sound. A supply of fuel can be carried for a run of 100 miles, while water is only needed about every forty miles. For further details of the Stanley car we would refer our readers to the description published in our issue of May 9th last. In addition to Mr. Searles, we understand that Mr. A. L. Barber, the President of the Locomobile Co., is now in this country.

**The Persecution of Automobillists and Motor-Car Drivers.**

WE are glad to note that the Automobile Club is taking steps to bring to the knowledge of horse-drawn vehicle drivers the real state of the law with regard to the stoppage of motor-cars on the roads. At the present time there are many who appear to imagine that a driver of a horse can hold up his hand at any time and so cause a motor-car to be brought to a standstill. The Automobile Club has, however, just issued a circular in which the provisions of the regulation of the Local Government Board are clearly set forth. The regulations provide that "Every person driving or in charge of a light locomotive when used on any highway shall (a) on the request of any police-constable (b) or of any person having charge of a restive horse, or of any such constable or person putting up his hand as a signal for that purpose, cause the light locomotive to stop and to remain stationary so long as may be reasonably necessary." In the circular above referred to the Committee counsel drivers of motor-vehicles to show every possible consideration to those in charge of restive horses, and the Committee do not recommend for one moment that drivers of automobile vehicles should disregard any signals which may not fall within the letter of the regulation when there is good cause for such signals, but in view of the fact that this regulation is being used as a means of annoyance to automobilists, it is pointed out that—  
1. No person has a right to require a motor-vehicle to be stopped except (a) a police-constable, and (b) a person in charge of a restive horse. It is clear that a passenger in a horse-drawn vehicles who is not driving has not charge of the horse; therefore (a) a police-constable and (b) the driver of a restive horse are the only persons who can require a motor-vehicle to be stopped. 2. Further, the driver of a horse has not the right to require a motor-vehicle to be stopped unless the horse be restive. The Committee of the Club are ready to supply copies of this circular to members so that they may carry a few of the same with them, ready to present to drivers of horses who give signals to stop without sufficient cause. Of course it remains to be proved whether the circular will result in diminishing the annoyance to which automobilists are subjected in this respect, but that the Committee mean to do all in their power to abate it is indicated by their invitation to members to submit to them any cases of attempts to unfairly or harshly interpret the regulation.

ACCORDING to the daily papers a somewhat serious motor-car accident occurred at Hatfield Peveril, near Witham, on Monday last. Capt. Giles and a friend were journeying from London to Yarmouth in a motor-car, and when opposite the Duke of Wellington Inn a dog ran under the car. Either this had some effect on the steering arrangements or the gentleman in charge suddenly altered its course—the point does not appear to be very clear. At any rate the car overturned, and the occupants were beneath it. Mr. Jones, the landlord of the inn, at once ran to render assistance, and other help was speedily at hand, and the car was lifted. Since the above reached us, we have received a letter, published on another page, from Mr. Rush, of the London Autocar Co., Ltd., giving the true facts of the accident.

## A Large Daimler Motor-Omnibus.



ONE of the latest productions of the Daimler Motor Co., Ltd., of Shaftesbury Avenue, W.C., and Coventry, is a 14-seated covered omnibus, of which we are able to give an illustration herewith. The car is provided with a 4-cylinder motor capable of working up to 12 b.h.p.; it is arranged in front as usual; in fact, the whole arrangement of the motor and transmission is, generally speaking, similar to that of the standard type of Daimler car. It may be mentioned, however, that the rear axle is cranked, enabling the "well" to be dropped between the frame, so bringing the bottom of the 'bus close to the ground. The variable speed-gear is arranged to give four speeds, ranging from  $3\frac{1}{2}$  to 14 miles per hour. Three powerful and independent brakes are provided, while it will be noticed that the steering is controlled by a vertical hand wheel. The road wheels are fitted with solid rubber tires. The interior of the 'bus is handsomely upholstered in cloth and imitation morocco leather.

LA SOCIÉTÉ DES AUTOMOBILES ET MOTOCYCLES AURORA is the style of a new company which has just been formed at 79 Boulevard Haussmann, Paris, with a capital of £6,000.

THE United Motor Industries, of 3 Rue Meyerbeer, Paris, of which Mr. H. O. Duncan is managing director, have sent us a copy of their new illustrated catalogue for the 1899-1900 season. We may say at once that it is the most comprehensive list of the kind we have so far seen; some extent of its magnitude may be gauged from the fact that it extends to no less than 148 pages. To motor-cycles and trailing-cars eighteen pages are devoted, followed by six in which the Bollée voiturette is dealt with. The next nine pages are concerned with voiturettes and light cars, including one or two new types. Two long sections follow, one devoted to motors, component parts, and accessories of every kind for motor-cycles, and one dealing with similar parts for Panhard-Levassor and other well-known cars. In fact, it is difficult to find an article that is not dealt with in the catalogue, a production which should be in the hands of all interested in automobilism.

### THE AUTOMOBILE CLUB.

THE following is a copy of a circular which has just been issued by the Committee of the Automobile Club setting forth the various matters which are at present receiving attention, and also the arrangements which have so far been made with regard to the coming winter season:—

#### PROGRAMME.

The Committee have now under consideration the following matters. Special committees will meet and press forward with these matters as soon as the summer vacation is terminated:—

1. Recommendations to the Local Government Board as to amendments in the Regulations of the Board affecting Light Locomotives on Highways.
  2. The formation of a Society for protection against vexatious prosecutions and vexatious actions at law.
  3. The organization of a Race for touring and racing carriages in France next spring.
  4. The organization of the Second Automobile Club Show, to be held from or about March 24th to April 7th next.
  5. The framing of Rules affecting Automobile Racing.
- NOTE.—At the last meeting between the Racing Rules Committee of the Club and the representatives of the National Cyclists' Union highly satisfactory advance was made towards a settlement of this matter.
6. The representation of British manufacturers at the Paris\* Exhibition of 1900 and at other Exhibitions.
  7. Arrangements for the accommodation of Members of the Club who may be visiting the Paris Exhibition of 1900. It is proposed to rent a small villa near Paris.
  8. The compilation of an accurate list of Motor-spirit Stores, Repairing Firms, etc.
  9. The compilation of a small Pocket Book giving useful information of a non-technical nature.

\* The Automobile Club of Great Britain has, at the request of the Royal Commission for the British Section of the Paris Exhibition of 1900, agreed to co-operate and act as the Advisory Body in respect of the British Automobile Section.



10. Arrangements whereby manufacturers or Members may, at any time, submit motor-vehicles to trial, and obtain a Club certificate as to their capabilities.

11. The formation of Branches of the Club in Scotland, in Ireland, and the provinces.

### NOTICE TO MEMBERS.

#### MEMBERSHIP.

Members of the Club are requested, in order to place the Club in a position to carry out the important work which it has before it, to do their best to obtain new Members for the Club. The subscription of Members elected on and after October 1st next will cover the period ending December 31st, 1900. Members are particularly requested to impress upon all to whom the Club may be mentioned that it is in no way concerned with any automobile firm or company or business undertaking; but that it is an entirely independent body, having for its object only the general advancement of automobilism.

The Automobile Club of Great Britain is recognised as the representative in this country of the Automobile Club de France, the Automobile Club de Belgique, the Automobile Club de Suisse, and the Automobile Club in Vienna (the Österreichischer Automobile Club); and Members of the Club have, under certain restrictions, the right of temporary admission to the Automobile Clubs respectively in Paris, Brussels, Geneva, and Vienna.

#### SHEEN HOUSE CLUB.

The Committee of this Club have agreed that Members of the Automobile Club shall be Members of the Sheen House Club at the reduced subscription which is allowed to officers of the Army, Navy, and Reserve Forces, viz., £3 3s. instead of £5 5s. At present there is no entrance fee, but it is proposed to institute an entrance fee on and from January 1st next.

#### PETROL STORES AND RELIABLE REPAIRING SHOPS.

A revised list of Petrol and Motor-spirit Stores and Repairing Shops is now being prepared by the Club Committee for the use of Members.

Members are invited to send to the Secretary all the information they can as to—

- (1) The price charged for petrol and motor-spirit by the various agents with whom they may be acquainted; and
- (2) The names and addresses of firms or individuals who may be relied on to carry out motor repairs efficiently.

#### WINTER SEASON 1899-1900.

The usual ANNUAL DINNER (in celebration of the completion of the third year since the Light Locomotives Act came into force) of the Club will take place in London on Tuesday, November 19th.

HOUSE DINNERS will be held at the Club on the second Wednesday in every month, viz. :—

Wednesday, December 13th, 1899.

Wednesday, January 10th, 1900.

Wednesday, February 14th, 1900.

Wednesday, March 14th, 1900.

PAPERS will be read and discussions will take place on these evenings.

AN automobile race took place at Belmont Driving Park, Philadelphia, on July 28th. There were three entries—a Winton hydrocarbon vehicle, a vehicle of the General Automobile Company, and a Waverly electrical car made by the Indiana Bicycle Company. The Indiana Waverly vehicle punctured one of its tires on the road to the track, and although it completed the two-mile course, did so not with any hope of winning, but rather to fill the class. The Winton led from the start, and passed under the wire at the end of the second mile about ten feet ahead of the General Co.'s vehicle. The time reported by the judge was 7 m. 38½ s.

## CORRESPONDENCE.

### AN UNNECESSARY INDIGNITY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to the indignity gentlemen are put to in police-courts because a police-constable wants a day off duty, I should like to speak of an experience of mine. My *fiancé* and myself were riding a tandem cycle *up a rise* when a mounted constable took it into his head that we were exceeding a reasonable pace. Whether we were or not is nothing to do with the present, suffice it to say that, according to the evidence (*sic*) the patrol must have galloped at the rate of thirty-five to forty miles per hour to have overtaken us in the distance that he did! An invitation to Stratford was the result (after much rudeness and incredulousness at a police-station). Ten o'clock was the time of the appointment, and we were compelled to wait till 12.30 in a most reeking atmosphere of "drunks and disorderlies," etc.

There is one satisfaction, and that is that with a motor the driver *only* has responsibility, so that it is not necessary for ladies to get into this position.

Have we not enough influence amongst the ranks of automobilists and cyclists to get this abominable style of managing things altered? I think if you were to use your columns to bring this disgrace to the notice of your readers, and induce your contemporaries to do the same, something might come of it.

Hackney, August 19th, 1899.

Yours faithfully,  
"DISSATISFIED."

### A MOTOR-CAR ACCIDENT IN ESSEX.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—You will doubtless have by this time heard that "a serious motor-car accident" took place near Witham, in Essex, last Monday. The real facts of the case are these: I started for a 700-mile tour round the East Coast on Monday, and after a good run as far as Chelmsford, on passing through the little village of Hatfield Peveril a big sheep-dog ran out from the side of the road, getting badly mixed up in our front steering-wheels. This immediately threw us round in the road, and, as luck would have it, at this particular spot the crown of the road was very steep, causing the car to turn right over, the wheels being where the hood usually is, my old friend Mr. Giles, of King's Lynn, being underneath the car. I was, happily, thrown out away from the car and only badly bruised and shaken. My friend was eventually rescued from his awkward predicament by the landlord of the village public-house and a few willing volunteers. The car, I am happy to say, was not in the slightest damaged with the exception of the iron armrails and hood, and it would have been quite possible to have continued our journey. We preferred, however, to wait and have these little defects seen to. This certainly speaks volumes for the good work and material that Messrs. Marshall put into their carriages, as I am convinced that very few cars would have stood the strain.

I should take it as a very great favour if you would kindly point out in your Journal that there should be at the present time a certain amount of sympathy among motor men, as during the time that the car was in its most unnatural position, and my friend Mr. Giles underneath, two motor men came by on a Daimler car. They were signalled to for assistance, but these gentlemen could not find it convenient, I suppose, to lend a hand to rescue a fellow motor man from a most perilous situation.

182 Gray's Inn Road, W.C.,  
August 22nd, 1899.

Yours very truly,  
CHAS. H. E. RUSH.

A COMPANY has just been formed in Paris (135 Rue de la Convention), with a capital of £40,000, to be known as La Société Générale des Voitures Automobiles.

## MOTOR-CARS ON THE CONTINENT.

### "La Locomotion Automobile" Motor Competition.

In previous issues we have given general details of the scheme of our French contemporary, *La Locomotion Automobile*, to assist owners of motor-cars in the matter of ascertaining the horse-power of their engines, and we now append the premier list of engagements, from which it will be noted that already a large variety of types are represented:—

|                             |    |    |                                     |    |         |
|-----------------------------|----|----|-------------------------------------|----|---------|
| 1. M. le Baron de Zuylen    | .. | 1  | Panhard Duc                         | .. | 6 h.p.  |
| 2. Do.                      | .. | 1  | Panhard Spider Paris-Amsterdam type | .. | 8 h.p.  |
| 3. Do.                      | .. | 1  | Mors Duc                            | .. | 6 h.p.  |
| 4. Do.                      | .. | 1  | Gautier-Wehrle phaeton              | .. | 8 h.p.  |
| 5. Do.                      | .. | 1  | Diétrich Spider                     | .. | 9 h.p.  |
| 6. Do.                      | .. | 1  | Panhard 8-seated brake              | .. | 12 h.p. |
| 7. Do.                      | .. | 1  | Serpollet                           | .. | 12 h.p. |
| 8. Do.                      | .. | 10 | various carriages on order          | .. | —       |
| 9. M. Lorilleux             | .. | 1  | Diétrich (Amédée Bollée)            | .. | 9½ h.p. |
| 10. M. Klaus                | .. | 1  | Klaus motor-car                     | .. | —       |
| 11. M. de Crozalo           | .. | 1  | Gobron-Brillie car                  | .. | 8 h.p.  |
| 12. M. A. Dumas             | .. | 1  | Dumas motor                         | .. | 6 h.p.  |
| 13. M. C. Ferrand           | .. | 1  | Rochet-Schneider car (model 1898)   | .. | —       |
| 14. Société des Voiturettes | .. | 1  | voiturette                          | .. | 3 h.p.  |
| 15. Do.                     | .. | 1  | do.                                 | .. | 4 h.p.  |
| 16. MM. Amiot and Péneau    | .. | 1  | car                                 | .. | 6 h.p.  |
| 17. M. Augé                 | .. | 1  | Cyclope motor                       | .. | 3½ h.p. |
| 18. M. R. Vuillemot         | .. | 1  | Ducroiset car                       | .. | 6 h.p.  |

### Automobile Meet at Brescia.

A GRAND meet of automobiles has been arranged for September 8th to 11th, at Brescia, and judging from the attractiveness of the programme the reunion should be very successful. The first two days will be devoted to an exhibition of automobiles, while on the 10th and 11th proximo races have been arranged for all classes of vehicles. The course fixed for the 11th is one of 220 kilometres, the greatest distance of any race in Italy. The route is Brescia, Cremona, Mantone, Verona, Brescia, and we understand that the roads throughout are excellent.

### Béconnais at Lons-le-Saunier.

BÉCONNAIS and his motor-tricycle still maintain their form, and at present appear to be all-conquering. Last week we chronicled the remarkable performance at La Rochelle, when 188 kil. were covered in 193 m., and since then this well-known "chauffeur" has scored another victory. This time it was at Lons-le-Saunier, in a motor-cycle race organized by the Automobile Club du Jura, and the win was achieved with the comfortable margin of 1 h. 16 m. in hand. Béconnais covered the distance of 256 kil. in 289 m. 25 s. (4 h. 49 m. 25 s.). The second and third men were Cormier and Castoldi respectively. At the same meeting two other courses were decided, and resulted as follows:—Voitures (distance 256 kil.): 1st, Petit, 5 h. 9 s.; 2nd, Kœchlin, 5 h. 32 m. 4 s.; 3rd, Rigoulot, 5 h. 42 m. 24 s. Voiturettes (distance 126 kil.): 1st, David Amédée, 3 h. 39 m. 31 s.; 2nd, Martin, 3 h. 43 m. 42 s.; 3rd, Chesney, 4 h. 40 m. 16 s.

### A New Amusement.

ALL automobilists and cyclists have met, times without number, the urchin who delights in throwing his cap under the wheels, but a French "gamin" has enlarged upon this dangerous practice, and with serious consequences. Seeing the approach of an automobile containing Edmond Beer and a mechanic, this small boy deposited on the road several large stones, so arranged that the car could not avoid striking them. The result was the upsetting of the carriage, without, however, the occupants receiving any very grave injuries. This incident occurred at Deauville on Monday last, previous to which the boy's brother had been arrested for a similar offence.

### An Exhibition at Ostend.

ON the day following the termination of the Paris-Ostend race, that is to say, Saturday, September 2nd, there will be held in the Kursaal of Ostend an exhibition of all the placed automobiles. We are pleased to note that by a further change in the itinerary the amount of *parcours* to be negotiated in the race has been reduced by twelve kilometres.

### M. G. A. Rives.

ON the recommendation of the Minister of Commerce and Industry, M. Gustave Rives, member of the Automobile Club de France, and director-general of the two Exhibitions of Automobiles, has been nominated a Chevalier of the Légion d'Honneur, and the French automobile world has rejoiced accordingly. An architect by profession, M. Rives has carried out many important works. Among those in Paris may be cited the establishments of the Crédit Lyonnais, Dufayel, and last but not least the extensive alterations and additions to the Automobile Club's hotel in the Place de la Concorde. But it is M. Rives' splendid work in connection with the Tuileries Exhibitions that appeals most to the automobile world at large. The labour entailed in creating and organizing such an exhibition as that of 1898 was immense, and in 1899, when, in the ordinary course of events, the work would have been materially simplified, the action of the Government in closing the Club a week or two previous to the opening of the show complicated matters tremendously. That these complications were successfully overcome was witnessed by the production of a magnificent exhibition, the administration of which was complete in every detail.

### Motor-Cars in Greece.

*La France Automobile* announces that the Hellenic Government has passed the first reading of a Bill providing for the establishment of automobile services in various parts of Greece, and that a thirty years concession in respect of the same has already been granted to M. Moraitinis, of Athens.

### Daimler Motors in Austria.

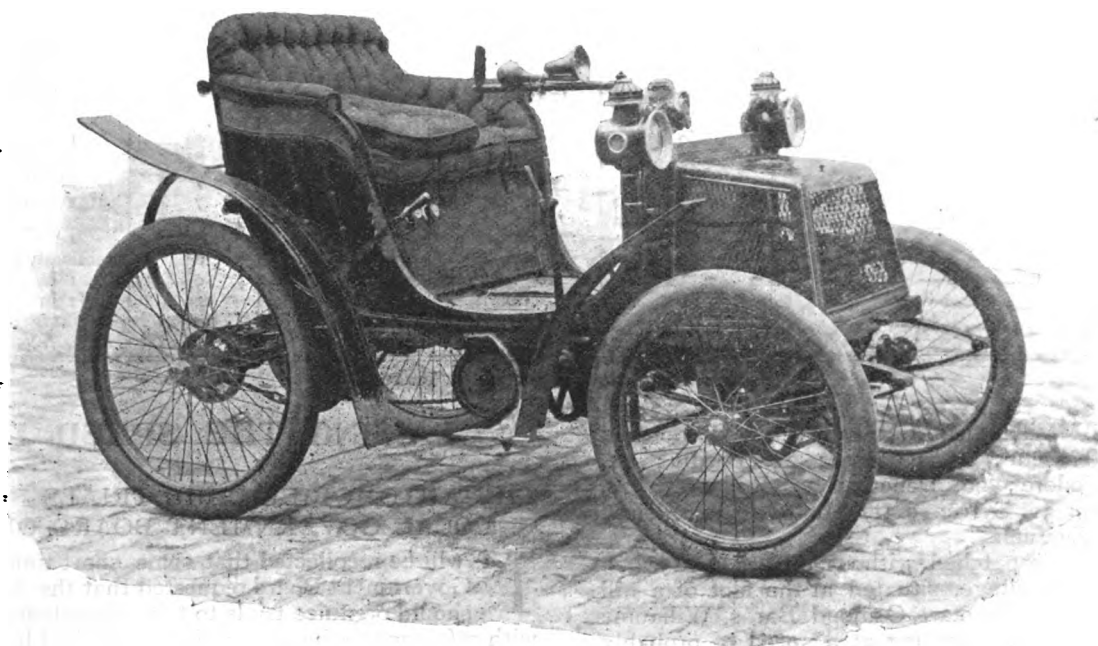
THE OESTERREICHISCHE DAIMLER MOTEREN GESELLSCHAFT (Bierenz, Fischer & Co.) is the title of a company which has just been formed in Vienna to construct Daimler motors and motor-vehicles in Austria.

MESSRS. POUGNAUD & BROTHIER is the name of a new concern which has just been formed at Villefagnan, France, with a capital of £4,800, to manufacture motors, carburettors, and automobiles.

ACCORDING to the British Vice-Consul at Trapani (Sicily), a company will undertake the transport of passengers from Trapani to Alcamo Station, making a direct track which will have the effect of rendering the journey from Trapani to Palermo much shorter than it is at present. The cars have been purchased in Paris.

THE city authorities of Buffalo, N.Y., have made a contract with the National Motor Transit Company for the operation of automobile-vehicles in the city parks. The city gives the Company a one-year franchise for the nominal sum of one dollar. The Company may charge five cents for a single trip. The Company assumes all liability from accidents arising from frightened horses. The carriages must not be run at a greater speed than eight miles per hour, and their design must be approved by the park authorities. The Company will first try petrol carriages, but may change to electric vehicles later on.

## The Déchamps Petroleum-Spirit Motor-Voiturette.



WE are enabled this week to give an illustration of a neat two-seated motor-voiturette which has lately been introduced in Belgium by the Société Anonyme des Ateliers H. P. Déchamps, of 31 Rue Frère-Orban, Brussels. The car is provided with a two-cylinder vertical petroleum-spirit motor. It is located in the front portion of the car under a perforated bonnet, and is described as being capable of developing up to  $4\frac{1}{2}$  h.p.; the ignition is electrical, the carburettor of the Longuemare type, while the cooling of the cylinders is effected by means of radial discs assisted by a small high-speed fan driven off the motor-shaft. Three forward speeds—10, 20 and 30 kilometres per hour—as also a backward motion are provided. The transmission of the power of the motor to the rear road-wheel axle is effected entirely by gear wheels, no chains or belts being employed. The car is provided with wheels of the suspension type fitted with Michelin pneumatic tires, and its weight complete is given as 300 kilogrammes, or not quite 6 cwt. In a letter to us the makers state that a vehicle of this type took part in the recent Brussels-Spa race, and that it was the only car which got through without a breakdown.

A NEW firm has just been formed at Levallois-Perret (Rue du Bois), France, under the style of Messrs. Lamaudière et Labre, to construct a new type of motor-bicycle devised by M. Labre,

PASSING along Great Eastern Street, London, E.C., the other day, we noticed that Messrs. Casswell & Co., Ltd., cycle factors, are just now displaying a motor-tricycle fitted with a De Dion motor constructed by the Eadie Mfg. Co., Ltd., of Redditch.

A NEW petroleum-spirit motor for horseless vehicles has just been introduced by the St. Louis Gasoline Motor Company, 822 Clark Avenue, St. Louis, Mo. The points aimed at by the makers have been simplicity of construction, durability, a combination of small weight and great power, the enclosure of all working parts, and the class of workmanship. The motor, which is of the horizontal type, is of 2 h.p.; it weighs only 89 lb., and occupies a space of but 24 by 11 inches.

## THE PARIS-LILLE RACE.

(From Our Own Correspondent.)

ALTHOUGH the elimination of the carriage category in this race had the natural effect of materially reducing the public interest in the *course*, still, such was the number and quality of the competing motor-cyclists that a crowd of fair proportions assembled to witness the start at Chatou on Sunday morning last. For once in a way the time of departure had been fixed at a reasonable hour, that is to say at 10.30, hence we enthusiasts were spared the painful necessity of rising at an unearthly hour in the morning, a proceeding usually imperative if one wishes to see the initial stage of an automobile race in France. The road from Paris to the pleasant little suburb of Chatou leads through Neuilly, Courbevoie, and Nanterre, and consists almost throughout of *pavés*, the horrors of which, from an automobile or cycling point of view, baffle description. It was therefore with a feeling of thankfulness that I descended from my bicycle at the *contrôle* fixed on the Saint-Germain road and proceeded to watch the arrival of the competitors, the majority of whom were unmistakably glad to dismount from their racers after the fearful run out from Paris. In some respects the few minutes preceding the start is, I think, the most interesting feature of a race. It is then that one has an opportunity of examining the machines, the motors, and the hundred and one small parts and accessories carried by the competitors to meet all eventualities. It is of interest to note the different demeanours of the participants themselves: the feverish anxiety of some, the cool deliberation of others; the rapid adjustments and trials made at the last moment and the bustle and excitement of getting into line for the start. At Chatou all the actual starters had put in an appearance by 10 o'clock. They numbered twenty-five, but at the moment of departure Gasté discovered, to his dismay, that his machine would not move, although the motor would run gaily. A journey of 258 kilometres under these conditions would probably have been wearisome, so Gasté wisely abandoned the attempt. The other participants were:—1, Oury; 3, Rigal; 4, Tart; 5, Baras; 7, Bertin;

| Maker and Description of Vehicle.            | Weight without load, but including fuel, water, etc. |      |      |     | Weight of Load.        |      |      |     | Total Weight. |      |      |     | While travelling at a speed of miles per hour. | On a gradient of    | The vehicle stopped in yards. |
|--|--|------|------|-----|------------------------|------|------|-----|---------------|------|------|-----|--|---------------------|-------------------------------|
|  | tns.   | cwt. | qrs. | lb. | tns.                   | cwt. | qrs. | lb. | tns.          | cwt. | qrs. | lb. |  |                     |                               |
| Clarkson & Capel's steam lorry .. .. .       | 3  | 9    | 1    | 20  | 2                      | 0    | 0    | 0   | 5             | 9    | 1    | 20  | 8  | 1 in 9½             | 8                             |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | do.           |      |      |     | 8½   | 1 in 9½             | 8½                            |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | do.           |      |      |     | 9½   | 1 in 10½            | 6½                            |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | do.           |      |      |     | 8½   | practically flat    | 4½                            |
| Motor Traction Co.'s petrol omnibus .. .. .  | 3  | 6    | 0    | 0   | (2 person-)            |      |      |     | —             |      |      |     | 7½   | 1 in 9½             | 9½                            |
| Do. .. .. .                                  |  |      |      |     | (about)                |      |      |     |               |      |      |     |  |                     |                               |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | (9 persons)   |      |      |     | 0½   | 1 in 10½            | 11                            |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | (9 persons)   |      |      |     | 8½   | practically level   | 9                             |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | (9 persons)   |      |      |     | 7  | practically flat    | 6                             |
| Thornycroft steam lorry .. .. .              | 2  | 18   | 0    | 0   | 3                      | 0    | 0    | 0   | 6             | 10   | 0    | 0   | 7  | 1 in 9½             | 15½                           |
| Do. .. .. .                                  |  |      |      |     | (without fuel & water) |      |      |     | do.           |      |      |     | 7½   | 1 in 9½             | 9½                            |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | do.           |      |      |     | 6½   | practically on flat | 4                             |
| Daimler Co.'s petrol post office van .. .. . | 2  | 7    | 2    | 12  | 1                      | 10   | 0    | 0   | 3             | 17   | 2    | 12  | 9½   | 1 in 9½             | 12½                           |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | do.           |      |      |     | 12½  | 1 in 9½             | 16½                           |
| Do. .. .. .                                  |  |      |      |     | do.                    |      |      |     | do.           |      |      |     | 10   | practically on flat | 6½                            |

\* Driver was slow in getting on brakes.

11, Merville; 12, Willaume; 14, Lille; 15, Lepoutre; 17, Caron; 20, Vasseur; 21, Rivière; 23, Bardin; 24, Osmont; 25, Théodore; 26, Deneux; 27, Roquette; 28, Caillois; 29, Degré; 30, Sylvere; 31, Adolphe; 32, Gleize; 34, Tampier; 35, Zenfuehi.

They were duly despatched without mishap, and when passing my point of vantage, situated at the foot of a hill some 2 kilometres from the start, Osmont, Baras, Willaume and Rigal lead the way, travelling at a speed of probably 60 kilometres per hour. Lepoutre was almost immediately placed *hors de combat*, as he ran into a cart, and at Beauvais (76 kilometres) Rivière also abandoned. At Breteuil (105 kilometres) Bertin, mounted on a machine fitted with two Aster motors, retired; the time of the leader (Baras) at this point being 115 minutes. Throughout Baras was never headed, and eventually reached Lille at 3.45, where he covered the required five laps on the track, and finished at 3 h. 48 m. 35 s. having completed the journey of 258 kilometres in 5 h. 18 m. 35 s. Meeting with an accident at Arras he terminated the course on a borrowed machine, and on this ground Osmont, the second man, has lodged a protest, which on the face of it, will probably be upheld. The other competitors arrived as follows:—3rd, Tart in 5 h. 31 m. 13 s.; 4th, Gleize in 5 h. 33 m. 22 s.; 5th, Willaume in 5 h. 35 m. 2 s.; 6th, Caillois in 5 h. 38 m. 28 s.; 7th, Rigal in 5 h. 40 m. 15 s.; 8th, Bardin in 6 h. 2 s.; 9th, Tampier in 6 h. 1 m. 13 s.; 10th, Sylvere in 6 h. 10 m. 47 s.; 11th, Roquette in 6 h. 17 m. 17 s.; 12th, Merville in 6 h. 46 m. 25 s.; 13th, Vasseur in 7 h. 6 m. 33 s.; 14th, Lille in 7 h. 17 m. 35 s. Many of the competitors had experienced trouble in some form or other, but no serious accidents occurred.

Following the race, there was decided on Monday afternoon on the Lille track a *course* styled the Championship of the World. The heats were of 5,000 metres, and the final of 10,000 metres. The placings in the final were as follows: 1, Osmont; 2, Rigal; 3, Sylvere Accou; 4, Vasseur; the time of the winner being 11 m. 52½ s. The race throughout was of the most exciting nature, and aroused the spectators to a great pitch of enthusiasm.

MOTOR-VEHICLES are being used on several "shoots" in Scotland this year. Mr. Roger Wallace, Q.C., is using his motor in Inverness.

THE *Umpire*, of Manchester, *apropos* of the case against the Hon. Charles Rolls, re-assures nervous pedestrians as to the character of the motor-car. "It means no harm," says our contemporary, "and it wouldn't dream of doing any; it does not revel in death and destruction, and it would no more wilfully run over a human being than it would intentionally crush a worm."

## RAISING THE SPEED LIMIT.

### THE AUTOMOBILE CLUB TRIALS BEFORE THE LOCAL GOVERNMENT BOARD OFFICIALS.

IT will be recollected that some short time ago the Local Government Board requested that the Automobile Club should organize trials to take place before their officials with reference to the application which had been made to the Board that the limits of speeds for vehicles weighing 30 cwt. and upwards should be raised. The object of the trials was to ascertain by accurate experiment the stopping-powers of heavy motor-vehicles. The Club invited a number of firms to supply vehicles for the purposes of these trials. The companies who went to the trouble and expense of supplying vehicles for the occasion are to be heartily congratulated on the public spirit they have thereby shown.

At the trials—which were held on Friday last, the 18th inst.—the first arrival at the Star and Garter Hotel, Richmond, was the Clarkson & Capel lorry, which had a load on board of 2 tons of granite, kindly supplied by the Surveyor to the Borough of Richmond; the second arrival was the omnibus of the Motor Traction Co., Ltd. (late London Steam Omnibus Co., Ltd.); and this was followed by the Thornycroft steam lorry, carrying a load of 3 tons, and a Daimler post office van with a load of 30 cwt.

The Local Government Board was represented at the trials by its Chief Engineering Inspector (Major-General C. Phipps Carey, R.E.), the Deputy Chief Inspector (Colonel J. O. Hasted, R.E.), Second Deputy Chief Inspector (Mr. Rienzi Walton), and one of the Inspectors (Mr. Willcocks). The trials were carried out under the superintendence of the Secretary of the Automobile Club, assisted by Mr. Julius Harvey (who acted as starter), Mr. Thomas Clarkson (who acted as timekeeper), and Mr. Foster Pedley (who held a second watch). Mr. Straker, the engineer to the Motor Traction Co., Ltd., accompanied the petrol omnibus.

The trials consisted of stopping the vehicles while running down Petersham Hill at Richmond at an unexpected signal, the speed of the vehicle before stoppage as well as the distance covered in stopping being both carefully measured. Similar tests were carried out on the flat. The results of the tests are given in the table above.

THE *Irish Cyclist* states that the Waterford motor-car was to have been hired by some well-known sportsmen from Kilkenny for a run to Tramore Races last week, but some hitch occurred and the vehicle was not availed of. It is reported that a well-known car owner in the district is going to invest in one for the purpose of excursions. If he does it will create a great stir there.

## MIDLAND MOTOR NOTES.

By "HERCULES."

### A Midland Motoring Centre.

STONEBRIDGE, the Ripley of the Midlands, is the calling place for thousands of cyclists, and this summer one can hardly pay a visit without finding motors in evidence. There are vehicles of all descriptions, and the motor-tricycle always attracts attention. The speed cyclists who endeavour to "hang on" are not slow to appreciate the speed of these tricycles. Breakdowns are not met with frequently, although the roads around Coventry are practically the testing ground for motors. Unfortunately the police in this district swoop down upon motorists who are experimenting with cars to test their speed capabilities, and however careful the drivers are to select a quiet course the police are ever ready to do their duty. But the magistrates are not vindictive, and small fines are the rule. Furious driving, however, in Coventry's congested streets meets with more severe sentences, as it should. J. W. Stocks was summoned to appear before the County Bench at Coventry the other day. He sent a representative, and the Bench allowed the case to be heard in his absence. Stocks admitted to a speed of eighteen miles per hour while travelling to London, and a fine of 10s. and costs was not excessive under the circumstances. On the Continent motor manufacturers are afforded facilities for testing vehicles on the road. In fact, in the recent race from Bordeaux to Paris a large number of policemen were employed to keep the roads clear. How English manufacturers would enjoy such privileges!

### The Care of Motor-Vehicles.

It is not too much to say that in nine cases out of ten failures are due to carelessness in driving or want of proper supervision. A few weeks ago the writer was out with a friend on a motor-car, and a few miles from Coventry we had a stoppage. An examination of the engine revealed the fact that there was practically no oil with which to run it, and the bearings had become so hot that some oil had to be borrowed from a friendly cyclist's lamp. I am afraid our imprecations upon the individual who had neglected to provide the oil before we started had but little effect. This case is only cited to show that breakdowns are not always due to defective workmanship. During the past two years great improvements have been made in the construction of engines with a view to making everything as simple as possible to the non-practical person.

### More Experimental Work in the Midlands.

Now that trade with most of the Coventry and Birmingham cycle firms is slackening off, managers are turning their attention to motor-car manufacture. Many leading firms have purchased new and second-hand motors or the purpose of becoming acquainted with their mechanism, and those in authority are of opinion that this is the very best way of gaining experience.

### The Motor Manufacturing Co.'s Employees' Outing.

THE Motor Manufacturing Co.'s employes held their annual outing on Saturday last at Stratford-on-Avon. The journey was made *via* Kenilworth and Warwick in brakes. In the unavoidable absence of the manager, Mr. Geo. Iden, dinner was presided over by Mr. Thomas, who made a very sensible speech, and urged the workmen to study their own interests by first looking after the interests of the Company, and by devoting all their energies to turn out the very best of work possible. By such means they would further advance their qualification to be first in the motor industry. The afternoon was given over to outdoor amusements, and the return journey was much enjoyed.

### The "Allard" Motor-Tricycles and Cars.

LAST week W. Williamson, of the Allard Cycle Co., Ltd., Coventry, rode a motor-tricycle from Coventry to London in just over four hours. He rode right through without a hitch and without stopping, lubricating the parts while in the saddle. This firm has received quite a number of orders for motors and tricycles, and are completing two small cars, one to carry two passengers and the other four. We have been promised a trip in one of them, and will report our experiences in a subsequent issue.

### The Endurance Motor-Car.

MR. HALLETT, of the Motor Endurance Co., Ltd., took a car to London the other day from Coventry in about 7½ hours, a very fair performance for the ninety-two miles. This Company have just increased their capital, and expect shortly to extend their works so as to enable them to meet the increased demand for their motors.

### A Great Yarmouth Visitor.

THE other day I came across Mr. Crampton, of Great Yarmouth, a member of the Automobile Club. Mr. Crampton had ridden on his motor-tricycle to Coventry on business, as is his custom, and he states that everywhere he goes he witnesses the development of the motor industry. Mr. Crampton, who travels great distances on his tricycle, was one of the first to start motoring in Suffolk. At the present time there are four or five Daimler cars in Great Yarmouth doing a thriving business in passenger traffic.

### Another Birmingham Concern Takes Up Motors.

I LEARN from Mr. E. Gascoine, who is now with Messrs. Alldays & Onions, Birmingham, that this firm has several new motor-cars in course of construction. Arrangements are, I understand, also in hand whereby this concern will shortly be able to undertake repairs to any type of motor-vehicles, a staff of experienced men in this class of work having been obtained.

### A Motor-Tricycle Accident.

MR. G. W. HANDS, managing director of the Bard Cycle Co., Ltd., Birmingham, while out touring on his motor-tricycle in the neighbourhood of Bristol, met with rather a nasty accident, but on enquiry I find he is progressing satisfactorily and hopes to be out again in a few days.

### An Impromptu Shower Bath.

AN amusing incident occurred in one of the Coventry streets the other day. A motor driver was laying on his back in the roadway repairing a car when a water-cart passed and the motorist had an impromptu shower bath. It was no doubt more refreshing than pleasant even in this hot weather, and for a few minutes the language was plain and free between the driver and the water-cart man.

ON Saturday last a fire at Guinness' Brewery, Dublin, extended to the motor-car house and considerably damaged three cars.

MR. DAN ALBONE, of Biggleswade, Beds, has sent us a copy of his new cycle catalogue, in which prominence is also given to ball-bearing hubs and axles for horse-drawn and motor-vehicles. It is well-known that Mr. Albone has for some time been devoting attention to motor-vehicles, and he now announces that he is prepared to make and supply complete motor-cars.



## MOTOR-CAR AND CYCLE RACES IN FRANCE.

—B—

### THE REGULATIONS OF THE COMMISSION SPORTIVE OF THE AUTOMOBILE CLUB OF FRANCE.

**M**OTOR-CAR races, which up to now have been submitted to no strict regulations except that of not hurting anybody and arriving first, if possible without making use of the train (!), will next year be ruled by the following regulations.

Hitherto everything has gone on all right, and nobody grumbled. All the races took place without causing any injury, and nobody dreamt of complaining. But now this is over, and general regulations will be made to apply to particular cases. Every time any one is not satisfied with his fate the consequences will be recriminations, law suits, etc., etc. But the work is achieved—the Commission Sportive of the Automobile Club has drawn up a series of regulations which has been declared valid for the year of grace 1900 over the whole of France.

As it will no doubt be of interest to some English "chauffeurs" to know exactly the laws laid down by the Commission Sportive relating to motor-car races in France, I append a short but complete enumeration of the rules.

*Introduction.*—1. The Automobile Club of France is the only association regulating motor-car and cycle races in France.

2. The following regulations are made with the idea that it is the machine and the driver who must go over the whole course without disjunction:—

*General Rules.*—No. 1. Every one entering a competition is supposed to know the present regulations.

*General Dispositions.*—No. 2. All races or records (motors) are ruled in France by the regulations of the A.C.F.

No. 3. All races in which these rules are not followed will be interdicted, and those who participate in such races disqualified.

*Publication of Programmes.*—No. 4. The programmes of the races must be (1) sent to the Commission Sportive, and (2) published in the press at least five days beforehand for track races, and a fortnight beforehand for road races.

No. 5. The programmes must contain: 1. The full enumeration of the prizes. 2. The distances. 4. The date of the closing for entries. 5. The amount of the guarantee (*forfaits*) if such is stipulated. 6. The full itinerary of the race.

No. 6. No modifications can be made to the programme.

No. 7. A copy of the programme must be given to every competitor inscribed.

*Classification of the Races.*—No. 8. The races must be free or reserved. The races reserved are those which only apply to a class of races stipulated by the organizers.

*Categories.*—No. 9. The different classes of vehicles recognised by the A.C.F. are (1) motor-cycles, etc., not weighing more than 250 kil.; and (2) vehicles weighing over 250 kil., and carrying two persons side by side of a minimum weight of 70 kil. each.

No. 10. The Commission Sportive is the only judging body as regards questions of classification.

*Entries and Guarantees.*—No. 11. The organizers have to fix the entry fees, and may make them returnable or not.

No. 12. Any guarantee must be stipulated in the programme.

No. 14. Entries must be made in writing, within the time fixed, or by telegram followed by a letter of the same date.

No. 16. Any false declaration made by the competitor may render him ineligible for the race.

No. 17. Any person running under a pseudonym must have it accepted by the Commission Sportive.

No. 18. The pseudonym can only be changed if a sum of 20 francs accompanies the demand.

*Commissaires or Judges.*—No. 19. Every race must be directed by three commissaires chosen by the organizers, and whose names must be communicated and accepted by the Commission Sportive.

No. 20. The execution of the programme and also of the present regulations are in the hands of the commissaires, who shall also give decisions in case of any dispute.

No. 21. The commissaires can prevent any competitor from participating in the race if they consider his car dangerous or the driver inexperienced.

No. 22. The commissaires can inflict penalties up to 200 francs, and disqualify for a maximum period of one month.

No. 23. The commissaires must refer to the Commission Sportive if they consider the penalty should be higher than the above-mentioned sum.

No. 24. The starter is chosen by the commissaires and is the only judge as to the validity of the start.

No. 26. The competitors are to be started in the order of entry, unless the programme makes other stipulations.

*Arrival Judging.*—No. 28. The arrivals must be judged by a single person, who, however, may ask for the assistance of others. The judge must be accepted by the commissaires of the race.

No. 30. In case two competitors arrive together it shall be proclaimed a dead heat, the first two prizes being divided between them.

No. 34. It is sufficient for one competitor to start in a race for him to have a right to the first prize.

*Curves and Turnings.*—Special marshals have to be located at turnings to see that no competitor acts in such a way as to prevent the other from passing, or to cause him any accident.

*Track Races.*—The regulations are more or less the same as those which apply to motor-tricycles.

*On the Road.*—No. 39. Any competitor who in a race crosses another one, or gets too close to him, and prevents him going on, is considered as disqualified unless he is obliged to do so on account of a third vehicle. The fact of the obstruction being involuntary is in no way considered as a sufficient excuse.

No. 49. In road races the approach of vehicles must be announced by means of horns.

No. 50. During the night vehicles must have at least one white and one green light at the front, and a red light at the back.

*Regulations of Records.*—These regulations are more or less the same as in other sports, consequently they do not call for any lengthy reference.

*Validity of the Present Regulations.*—The above regulations are obligatory, and will come into force on January 1st, 1900.

Vive la Liberté!

D. FARMAN.

THE English Automobile and Motor Co. is the name of a company which has just been formed in Chicago to manufacture and sell rotary engines and automobiles, etc. The capital is £1,000,000!

WE learn that Mr. H. Mulliner, of the well-known carriage-building firm of Brook Street, W., has taken up an agency for the Bleriot acetylene carriage lamps. These lamps, which it will be remembered were displayed at the recent exhibition at the Agricultural Hall, are used by all the leading automobilists in France.

ACCORDING to a telegraphic despatch, Mr. Alexander Winton, the builder of the Winton motor-carriage, left Cleveland on the 16th inst. for New York in one of his vehicles. At Chicago he was to receive a message from General Anderson, Military Commander of the Lakes District, to be delivered to General Merritt at New York. Mr. Winton expected to cover the distance, 1,100 miles, in six days, and hopes to demonstrate the utility of the automobile for carrying messages in time of war. Mr. Winton is using a very heavy carriage, built specially for the trip.

## SOME USEFUL ACCESSORIES.



THE proper lubrication of the motor and the various parts of a motor-carriage is a most important point, and one which, if neglected, is most likely to spoil the pleasures of motoring, if, indeed, not to lead to more serious results. It is therefore satisfactory to find that the needs of automobilists in this connection are now being catered for by several concerns, among which are Messrs. Stern Brothers, of 57 Gracechurch Street, London, E.C. This is an old established firm of oil, grease and lubricator manufacturers which is now vending quite a number of lubricants suitable for motor-car users. One speciality is the "Fram" motor lubricant. This is specially prepared for motor-car axles and differential gears; it is particularly heavy and economical, exceptional lubricating and cooling properties being claimed for it. The "Sternoline" lubricant, which is adapted for bearings, is a semi-solid paste, free from acid and impurities, non-corrosive, and capable of being stored for years without deterioration. It possesses a high melting point, and lubricates in its ordinary condition without becoming molten. The "Sternoline" elastic paste for gear wheels and chains is stated to be used by most of the leading French motor companies, as well as by several English motor-car builders. It is intended to be applied every two or three months, and forms a covering on the gear wheels and chains which reduces the wear and tear and noise to a minimum, and keeps these parts efficiently lubricated and free from dust. It is also claimed to be economical in use. For automobilists using belt-driven cars Messrs. Stern supply what they term their belting brick. The belts are occasionally rubbed with these bricks, which weigh 2 lb. each, and are so kept soft and pliable while slip is prevented. The "Sternoline" motor-bearing and cylinder oil is another lubricant to the production of which the closest attention has been given. It is stated to possess an exceedingly high flash-point, free from all impurities, and is particularly recommended for both cylinders and engine bearings. An efficient rust-preventive paste and a stainless motor-car and cycle oil, the latter being a colourless oil of heavy body, are also included in the list of this firm's productions. In addition to lubricants Messrs. Stern are also supplying lubricators suitable for use on motor-cars. Four types are made, the "Sternoline Stauffer," dustproof screw, spring pressure automatic, and feed drop lubricators, the latter for liquid oil. The three first-named are constructed to hold sufficient semi-solid lubricant for several weeks' use, according to size and the number of hours run. The screw-down types require an occasional turn of the screw from time to time, so as to force the lubricant into the bearing, but the automatic lubricator requires no attention except for the purpose of refilling. The improved "Sternoline" screw lubricator is the type particularly recommended for motor-car use. It is quite dustproof, and the feed is obtained by turning the screw once or twice a day.

"MOTOISTS" is the latest term adopted for those who make use of motor-cars and cycles. It is the invention of a Midland newspaper.

THE Detroit Automobile Co. has been formed at Detroit, Mich., to manufacture and sell automobile vehicles, etc. The capital is £30,000.

It is announced that a company known as the Thames Valley Motor-Car Company is being formed for the purpose of running a service of Daimler motor-brakes between Richmond and Hampton Court, *via* Twickenham and Bushey Park.

It is reported that Baillie Lyon, of Aberdeen, has ordered a motor-omnibus to convey the people to and from the Bathing Station in the northern city. The omnibus in question is similar to that shown at the recent Exhibition at the Agricultural Hall by Messrs. Bayley, Ltd.; it is constructed to carry twelve persons inside and fourteen outside.

## SCOTTISH NOTES.



### "The Twelfth."

THE whirr-r-r of the startled grouse and the bang of the sportman's gun have taken the place of the peaceful quietness which a few days ago reigned supreme in the Highlands of Scotland. The Twelfth has come and gone, and a scorching day it was! Indeed, unless in the early hours of the morning before the sun shone forth with burning intensity, shooting partook more of the nature of a weariness to the flesh than sport. "But what has all this to do with motor-cars?" I can imagine I hear my Editor growl. Well, I have just seen a very substantial and business-like motor-car fresh from the Hamilton factory on its way to Strathpeffer, and on making enquiry I found it was intended to be utilised for shooting purposes. The vehicle, which has a Daimler motor, is built on Stanhope lines, only there is no entrance from behind. Both seats face the front, and admission to the back one is gained by lifting up a half of the front seat. It is extremely roomy and could accommodate a shooting party of five along with dogs and guns with comfort. The wheels were yellow, and the body natural varnished walnut, and altogether the car looked decidedly smart and serviceable.

### Nobility and Motor-Cars.

HIS Grace the Duke of Hamilton, who is expected at the Palace of the same name this week, is another nobleman who is interested in a quiet way in motor-cars. Last year he drove by the new method of locomotion up to Grouse Lodge, his shooting box in Avondale, on several occasions, and was delighted with the comfort and rapidity of the various automobiles which took him there. I expect a few more trials of the horseless carriage on the occasion of his present visit will result in his becoming the owner of one of these useful machines.

### More Advantages.

As a matter of fact, the advantages of a motor over a horse for work at a shooting lodge are great. Often a drive of several miles to convey sportsmen, guns, dogs, and luncheon baskets has to be made, and when the *locale* of the "shoot" has been reached the horse or pony has to be taken often a considerable distance to be stabled at a farmhouse. With the vehicle one has no need to trouble about stable accommodation or even the weather. The car can be pulled up at the side of the road nearest the moor to be shot over, and left standing there all day without requiring any attention. The moral is obvious: it is only a question of time, and, despite the sneers of anti-motorists, we shall one day hear the hum of the merry motor as it rapidly conveys a load of "sports" to their destination. Regarding the Strathpeffer car before referred to, another gentleman says that if it proves satisfactory he and several friends will immediately go in for similar vehicles.

### The Limit of Speed.

TALKING about speed on the highways, the chief constable of one of the largest counties in Scotland said recently to an autocarist of his acquaintance that he did not see why motor-cars should not be driven from twenty to thirty miles an hour in the open country, so long as one could see a clear run a long way ahead and slowed down when approaching other machines or in going through towns and villages. From what I know there is no one fonder of a good smart "spin" than the self same representative of law and order. I have seen him myself being driven a good sixteen miles an hour on a delightfully undulating country road, disturbed by little or no traffic, not a

hundred miles from his own head-quarters. He recognises the admirable control a competent driver has over his machine, which makes it infinitely more easy to handle than a horse-driven trap, and he is sufficiently broad-minded to admit that such is his own opinion, although it is not the law's.

#### More Wise Horse Drivers.

WHILE motoring through Crossford recently I was much struck with the plucky behaviour of a silver-haired old dame, who could not have seen less than seventy summers. She was driving a little market cart, to which was harnessed a fairly fiery-looking young pony. We slowed down on approaching, but the pony turned completely round and looked as though he meditated a "bolt." The old lady pulled it up sharply, and gave it a smart cut with the whip to show she would stand no nonsense. One of our party by this time had run to the pony's head and helped to bring it round. The plucky driver set it going again, and we thought it had got over its nervousness, but on approaching our by this time perfectly "dead" motor (we had stopped the engine) it again wheeled sharply round, nearly upsetting the light vehicle it was pulling. The old dame's spirit was up by this time, and with a "Na, na, I'm no gown to be beat with the powny, he'll have to pass lots o' thae things some day" she argued out the point with her stubborn steed till in the end she conquered, and made him walk closely past the monster who had inspired him with so much alarm. It is pleasant to record an instance of this sort, for as a general rule a meeting of this kind is usually attended with a more or less voluble flow of lurid and picturesque language.

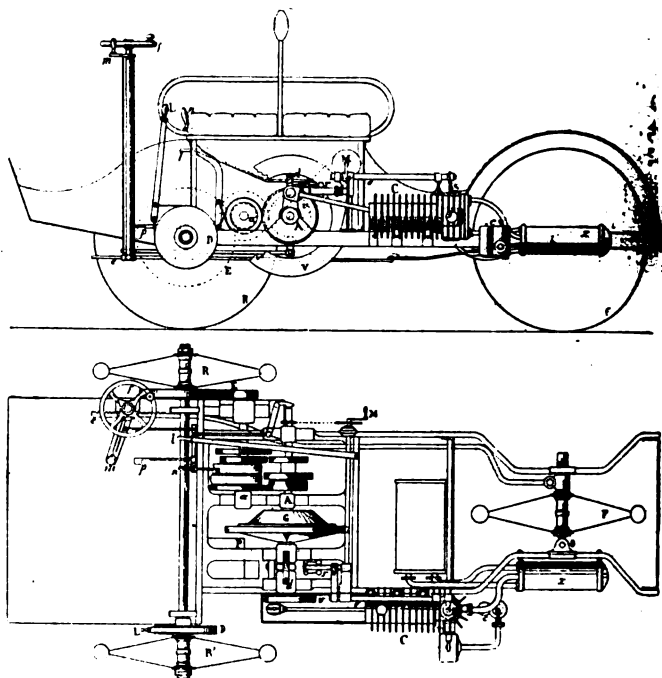
"BROWN HEATHER."

### THE PY MOTOR-VOITURETTE.



A NEW motor-voiturette, which at first sight appears to resemble the well-known Bollée, but which on closer inspection differs considerably therefrom, has lately been put on the market in France by the Compagnie des Automobiles du Sud-Ouest, of which M. André Py, the designer of the vehicle, is the manager. As will be seen from the illustrations (Figs. 1 and 2) the vehicle has three wheels, and has seating accommodation for two riders back to back. The motor *C* is of the single cylinder horizontal petroleum-spirit type, provided with radial discs for cooling purposes, and tube or electric ignition. It is capable of working up to  $3\frac{3}{4}$  h.p. It is located on the left-hand side of the frame, with the explosion chamber at the rear. The exhaust valve *S* is controlled by a small longitudinal shaft *o*, actuated by worming gearing *d* from the motor-shaft *A*. A centrifugal governor *r* is mounted on the shaft *o*, and prevents the exhaust valve being opened when the speed of the motor becomes excessive. The silencer is located at *x*. Three forward speeds—8, 18 $\frac{1}{2}$ , and 29 kilometres per hour—and one backward motion are provided, these being obtained by a series of gear-wheels on the motor-shaft *A* and the counter-shaft *a*. The handle *m* controls the forward speeds and the lever *l* the backward motion. A friction clutch *G* is arranged in conjunction with the fly-wheel *V*, so that the motor can be instantly thrown out from the transmission gear. Contrary to the Bollée, the Py voiturette is front driven and rear steered, the power of the motor being transferred to the front road wheels *RR'* through the counter-shaft *o* and the gear wheels *E*, a differential gear being provided on the opposite side at *D*. A handle is provided at *M* for putting the motor in operation. Steering is effected by the hand wheel *f* connected by the rack and pinion gear *e* with the rear wheel *F*, the latter being mounted in a special way. A lever *L*

controls a band brake on the differential gear, while a foot pedal *p* actuates two band brakes on the intermediary shaft *a*. All the transmission gear is arranged under the seats, where is also located the petrol storage tank, which has a capacity of 12 litres. The vehicle is 9 ft. long and 4 ft. 8 in. in width, while the seats are only 4 ft. above the ground. The centre of



FIGS. 1 AND 2.—ELEVATION AND PLAN OF PY VOITURETTE.

gravity is thus very low, and renders the vehicle exceedingly stable. The wheels are of the cycle type with pneumatic tires. The mudguard over the rear wheel is arranged to act as a luggage carrier, so that the vehicle may be used for touring purposes. It is claimed that the car can mount gradients of 10 and 12 per cent. even with a load of 6 cwt.

THE *Automobile* is the title of a new American illustrated monthly magazine to be devoted to the interests of horseless traction which it is proposed to bring out in October next by the United States Industrial Publishing Company of New York. It will be edited by Mr. Sylvester Baxter and Mr. E. E. Schwarzkoff.

MR. J. BURNS, of 44 Berners Street, London, W., sends us particulars of a novel form of spring cushion and seat he is introducing into this country suitable for use in motor-cars, as also in railway carriages, omnibuses, and vehicles of all kinds. The seats are constructed of a set of tempered steel blades arranged transversely, and having at their extremity a special bend, and hinged upon two parallel rods. Round copper shields suppress, it is claimed, the noise which would otherwise be produced by the rubbing of steel on steel. The blades are joined at the centre by a longitudinal band upon which they are clamped. In order to compensate for the too great flexibility of the blades in the middle, and to obtain a uniform elasticity, this band rests upon oval springs. By this arrangement the weight is transmitted by the blades, partly by their flexibility and partly in rotation round the rods, which reduces the work of the steel. The apparatus is contained in a light wooden frame, on which are screwed the hinges and the band springs. This frame enables the covering, which can be of any desired material, always to retain the same shape. This system has been devised to avoid the inconvenience attending metallic springs, and to replace horse-hair cushions. The apparatus is described as being simple, unbreakable, non-rusting, and as not showing—even after a long wear—any traces of malformation. Furthermore, the seat is very light, and, on account of the construction with the inside cavity, it is hygienic and cool.

# THE GENERAL PUBLIC AND MOTOR-VEHICLES.\*

THERE is a large opportunity to study the one-sided mental characteristics of both horses and drivers in connection with the motor-vehicles. Many amusing instances occur daily, and some very interesting reading could be had if they were collected and classified.

It is commonly supposed that the noise of the new vehicle is what scares horses, but it is very easily proven that such is not the case. Both horses and drivers recognise that it is a new thing, and their astonishment sometimes amounts to fright. For example, when coasting hills it is our practice to stop

the motor and control the vehicle by clutches or brake, or both, so that there is no puffing nor noise of gearing, and the carriage is practically as quiet as a bicycle. It is also our practice to go slow, keeping the vehicle in perfect control, and with the ability to stop it at any point on the hill; yet under these circumstances horses get as badly frightened sometimes as when the motor is running, proving conclusively that it is not the noise that scares the horse. Neither is it the shape of the vehicle, for some of our vehicles cannot be told at a glance from horse vehicles.

It is the simple fact that a vehicle without a horse is a strange, and to the horse an unaccountable, thing. Many instances could be cited to show that the same feeling exists among people, particularly children, and while most people have no fears, some instances of adults getting badly scared could be cited.

The most common feeling, however, is complete astonishment and an utter forgetfulness of everything excepting the sight in front of them. This accounts for a driver sitting still in his vehicle with loose lines, while the horse does a can-can, to the danger of all concerned. Many times we have vainly shouted to the driver to look out for his horse, while he, in open-mouthed wonder, failed to see anything but our vehicle.

It is a common remark also that motor-vehicles are noisy, although people immediately ask us why we do not put on a bell lest we run over somebody, and further ask us how we came down the street without their hearing us, both of which remarks show very plainly the absence of noise and also show that peculiar condition of a man's mind which, because a motor-vehicle is in question, presupposes noise.

It is pleasant to note, however, that these new and adverse conditions are now changing. The public are rapidly waking up to the advantages of the mechanical motor over the horse, and encouragement rather than opposition is becoming the order of the day.

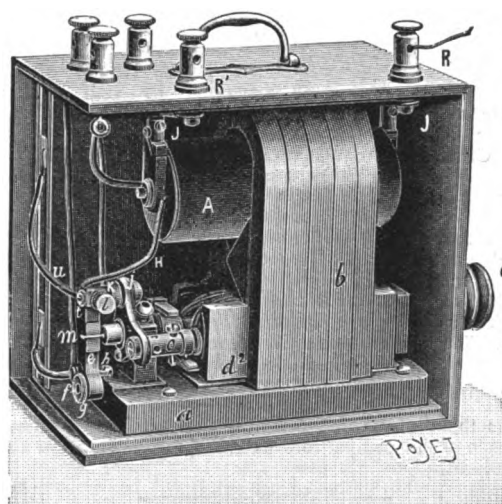
Another phase of the mind is shown by people's views as to what the motor-vehicle ought to be, having nothing except their own imaginations to guide them. They are more or less disappointed with every vehicle shown. It is either too heavy or too light, too high or too low, too long or too short, too fast or too slow, or some other reason is assigned for their not liking it, simply and solely because they in their inexperience have set up an imaginary and impossible model. They forget that the horse has many objectionable features, and are surprised to find that the motor-vehicle has any, although they are aware that nothing in this world is perfect.

In a recent letter a doctor, who is a cycle rider and a man of sound sense, objects because the vehicle offered him appeared so little for the money, when as a matter of fact the light weight and neat appearance are strong evidences in the vehicle's favour. The same man rides a bicycle weighing less than 25 lb. and without brakes or mud guard because of its general good features, when he could have had a great deal

more for his money by buying one made ten years ago, weighing 50 lb., having 30-in. or 32-in. wheels, mud guards, brake, coasters, etc.—double the quantity for less money. This looks like inconsistency, but the man is honest and trying to be consistent. The fault is in the mental condition in which his inexperience finds him, and it is because of such peculiar ideas that all or part of the buyers need more education along this line.

## HOUPIED'S MAGNETO-ELECTRIC IGNITION DEVICE FOR PETROLEUM-SPIRIT MOTORS.

ME. HOUPIED, of 16 Rue Royer Collard, Paris, has recently brought out a new magnetic ignition device for petroleum-spirit motors, which obviates the use of primary or secondary batteries. A view of the apparatus is given herewith, from which it will be seen that it comprises a magneto-electric machine, driven off the motor itself by a small band working on the grooved pulley *c*. In circuit with the magneto-electric machine is an interrupter, worked by a cam on the shaft of the small generator. Owing to the action of this cam contact is continually being broken, this rupture in the primary circuit to the induction coil giving a regular continuous succession of good sparks in the secondary circuit. Referring to the illustration, *b* is the permanent magnet and *d*<sup>2</sup> the stationary armature within which rotates a soft iron envelope. The two principal organs are the cam *m* on the end of the generator shaft and the interrupter *e*, the latter forming part of circuit of the primary current. Each time the cam acts on the interrupter a



rupture is caused in the primary circuit between the generator and the induction coil *A*, carried by the supports *J*. A feature of this coil is that it has no trembler. The connection between the interrupter and the wire *H* to the induction coil is made at *t* by means of a platinum point. From the coil the secondary circuit wires are connected to the terminals *R R*<sup>1</sup>, from which the wires run to the explosion chamber, where the sparking takes place. The putting in operation of the device is claimed to be very easy, a few turns of the motor fly-wheel being all that is necessary. It can also be so arranged as to provide the necessary electric spark for two or more cylinders and the current for a small incandescent lamp. The power required to run the new ignition device is very small, and in view of the certainty of its action and the small space it occupies, we are informed that, although it has only been on the market a short time, it has already met with a large adoption by motor-car builders and owners in France. As will be seen, the whole of the device is contained in a dust-proof box.

\* By Chas. E. Duryea, in *The Horseless Age*.

## MOTOR-CYCLE RACING IN MANCHESTER.

ON Saturday afternoon last a charity tournament took place on the ground of the Manchester Athletic Club at Fallowfield, the proceeds of the tournament being handed over to the Manchester Royal Infirmary and the Salford Royal Hospital. A very attractive programme was arranged, and every effort made to ensure success. There were in all twenty-three events, in which were included several new features. Cycle racing was prominent, of course; but there were also motor-cycle races, motor exhibitions, volunteer physical drill competitions and volunteer cycle races, a brass band contest, and tugs-of-war. During the afternoon C. G. Wridgway, the world's motor-cycle record-holder, made an attempt to break the ten miles motor record. He accomplished the distance in 18 m. 45 s., the previous record being 22 m. 11 s. Half the distance he covered in 9 m. 30½ s. Mr. J. A. Bennett rode a Phébus-Aster motor-cycle an exhibition mile, and C. G. Wridgway and D. H. Simpson engaged in a two-mile motor-cycle race. Wridgway won easily, the time being 4 m. 37 s.

The following are the results:—Two miles motor-cycle handicap: There were five entries, but only two competed, these being C. G. Wridgway, who rode a "Phébus" 2½ h.p. tricycle, and started from scratch, and D. H. Simpson, who rode a "Peugeot" of 1½ h.p. Simpson had a start of 400 yards, but Wridgway, going at a great speed, caught up to him in the third lap, and won easily by at least three-quarters of a lap. Time, 4 min. 37 sec. In the one-mile motor-cycle handicap Simpson and Wridgway were again the only competitors. Simpson had 200 yards start, but Wridgway easily got in front and won by a lap. Time, 2 m. 3 s.

## MOTOR-RACING AT BIRMINGHAM.

UNDER the auspices of the Birmingham branch of the Motor-Car Club and *Sport and Play*, a very interesting motor-cycle race meeting was held on the Aston track on Wednesday evening, in the presence of a large number of influential men interested in the motor and cycle industries, including Messrs. Harvey DuCros, jun., A. DuCros, C. Sangster (Ariel Cycle Co.), A. Eadie, R. W. Smith, C. R. Garrard, — Marples, R. F. Hall, Roland Hill, jun., W. A. Clay (Beeston Motor Co., Ltd.), A. Thomas (Motor Manufacturing Co., Ltd.), etc., etc. The weather was everything that could be desired, and in the final of the five-mile race S. F. Edge got within 10 s. of world's record. The results were as follows:—One mile motor-tricycle handicap: Heat 1—1, S. F. Edge (De Dion), scratch; 2, W. Munn (Ariel), 150 yards. Time 1 m. 53½ s.; won easily. Heat 2—1, C. Jarrott (De Dion), scratch; 2, C. Garrard (Ariel), 20 yards. Time 2 m. 14½ s.; won easily. Heat 3—1, C. G. Wridgway (Phébus Aster), scratch; 2, Bruno (Motor Manufacturing Co.), scratch. Time 2 m. 2½ s.; won by half a lap. Heat 4—1, W. Dunn (Ariel), 200 yards; 2, R. Hill (Beeston), scratch. Time 1 m. 52½ s. Final—1, S. F. Edge, scratch; 2, C. Jarrott, scratch; 3, C. G. Wridgway, scratch; 4, W. Dunn, 200 yards; 5, C. Garrard, 20 yards. Time 1 m. 51½ s.; won by inches only. Five miles motor-tricycle handicap: Heat 1—1, W. Dunn, 1,050 yards; 2, S. F. Edge, scratch; 3, J. W. Stocks, scratch. Time 8 m. 36 s. Heat 2—1, C. Jarrott, scratch; 2, C. G. Wridgway, scratch. Time 8 m. 57 s. Final—1, S. F. Edge, scratch; 2, C. Jarrott, scratch; 3, W. Dunn, 1,050 yards; 4, W. Stocks, scratch. Time 8 m. 32½ s. (ten seconds outside world's record). Edge won by a few inches—a very exciting finish. Ten miles motor-tricycle scratch race; 1, C. Jarrott; 2, S. F. Edge; 3, J. W. Stocks; 4, W. Dunn. Time 17 m. 22 s. Wridgway retired early from the race owing to a disconnected wire. Edge made the pace until half a lap from home and looked a certain winner, but his tire deflated just before entering the straight.

This was the first meeting of its kind ever held in Birmingham, and the terrific pace of the competitors caused quite a sensation amongst the spectators present.

## TO YARMOUTH BY MOTOR-CAR.

MESSRS. OLLEY & Co.'s 5-h.p. motor-car did a very successful trip to Yarmouth and back last week. With Mr. Olley as driver, a select party left Enfield at 6 o'clock on Tuesday morning, the 15th instant, and reached Chelmsford before stopping for breakfast. Thence they journeyed to Ipswich and Lowestoft, encountering some execrably loose roads *en route* and a heavy thunderstorm into the bargain. Consequently Yarmouth was not reached until late at night. Wednesday was spent in sightseeing, and, incidentally, the party discovered that the local police object to anything over four miles an hour for the dreaded motor! The return journey was commenced at 6 o'clock on Thursday morning. At Ipswich, Colchester, and Chelmsford, halts accounted for four hours; and thence the journey was completed *via* Ongar and Epping, arriving home, after a delightful ride, at 8 p.m.

## A SCORCHING MOTOR TRICYCLIST.

AT Ashford last week, Ernest Sinclair, of Kennington Road, London, was fined £2 and costs (£1 3s. 6d.), for driving a motor-tricycle in the High Street, Ashford, at a rate variously estimated by witnesses at from fourteen to twenty miles an hour. The defendant said they could not judge the speed, and that the capacity of the machine was only twelve miles. Notice of appeal was given.

## AN ASSAULT CASE AT DOVER.

MURRAY WATERER was summoned at Dover last week by W. Claringbould, conductor to the St. Margaret's motor-bus, for assaulting him on July 28th, at St. Margaret's. Troward Spanton was summoned by Edward Akhurst for using obscene language, and for disorderly conduct. There were cross summonses against Akhurst and Claringbould for using obscene language.

Mr. J. Harris Stone, instructed by Messrs Stilwell & Harby, appeared for the Motor-Bus Company employes, and Mr. A. Gill, instructed by Mr. A. E. Aldington, appeared for Messrs. Spanton and Waterer.

Mr. Stone, in opening for the prosecution, said the charges were the outcome of an attempt to stop the introduction of automobiles. The defendant had obstructed on several occasions, and the case was taken to protect the public from such things, which were a danger to efficient driving.

Mr. Gill objected to this statement as not referring to the case.

William Claringbould, licensed conductor, in the employ of the East Kent Motor 'Bus Co., of 57 High Street, said on Friday, July 28th, they arrived in the 'bus at St. Margaret's at 8.14 p.m. At the shed he noticed Waterer and Spanton driving furiously in a cart following the motor-car. He got off the car and went inside the car shed. When there he heard a commotion outside, so he went out, and heard Waterer say to Akhurst that he was like the stinking little secretary, getting 18s. a week. Then Spanton, who was swearing, said to Akhurst, "Come out in the meadow and have ten rounds for £5." Akhurst did not then answer. Witness said nothing. There was a crowd of people there then. Mr. Bettridge then came and one of the prisoners took him by the arm and shook him. Waterer then came to witness, and, striking him on the left side with his right hand, said, "This saucy little — was on behind." The blow made witness's lip bleed. He had not said a word to either of the defendants then. He had seen them before, but only knew Mr. Spanton. Before Waterer struck witness he told Akhurst to come away when Spanton was challenging him. Waterer, when in the cart, backed the cart into the 'bus, though he had the road to get by in. They stopped there a quarter of an hour, though the road was free, as the 'bus was inside the private ground of the shed. Both defendants were the worse for drink.

Cross-examined: He did not know that the defendant Waterer bore any ill-will. Akhurst did not use bad language. When Akhurst answered the challenge he was standing his ground, and said, "You hit me!" When getting the car into the shed, the road being narrow, they sometimes had to back more than once, but not so much as seven times. The car shed was on the Old Norman Road. They always waited till the road was clear, and never had any complaints. On this occasion the horse was restive and sweating. There was plenty of room to pass. When pulled up the horse began to rear, and a stout man came out and held it. He was in the shed at the beginning of the row. He did not hear Mr. Spanton call out "Move, and let me pass." Akhurst did not in witness's hearing say he could "— well wait." When he came out of the shed he did not hear the driver say he had been stopped before. He believed Waterer and Spanton stopped there a quarter of an hour simply to have an argument. He did not hear Mr. Bettridge say "It's no use talking to you, you're the worse for drink." The first he saw of Mr. Bettridge was when he was walking away. He never heard Akhurst use any bad language, nor did he go up to Mr. Waterer and say "You're the — who lost his watch at Folkestone." He never said anything at all to Mr. Waterer, nor did he say anything when struck.

By Mr. Stone: There was no reason why they should not have driven past.

Edward Akhurst, of Southampton, instructor in automobile driving, said he had had experience all over England. On July 28th he was with the 'bus, instructing the driver. When they got to St. Margaret's he saw the trap with Waterer in it alone, and holding the reins up high so as to show the horse was not afraid of the car. Afterwards he saw them following the 'bus at a good pace. As they on the 'bus turned the corner into the road to the shed one of them called out "Hi! Hi! where are you going with that — thing?" At the 'bus shed witness saw it backed into the shed; this was done in two minutes, but the defendants would not drive on. Then Mr. Bettridge asked them to go by, and said, "I don't want any more conversation with you, I am not drunk." They then got down and shook Mr. Bettridge, who ran away. Witness was there then, and Spanton said "Take your — 'bus away; you are like your stinking little secretary, getting 18s. a week." He kept repeating the same words. I told him to go back to the "Red Lion." He then said, "Do you know who I am? I am a County Councillor." He got in the cart again and flicked the whip on my face and challenged me to fight ten rounds for £5. Waterer then went up to the boy and struck him in the face; he tried to do it again, but some of the convalescents from Morley House held him back. A crowd was there and cried "Shame!" Both men were the worse for drink.

Cross-examined: There were generally people to see the 'bus back in. This was not because there was any difficulty, but because of the novelty. The only thing witness said was "Don't call me a —." It was a fact they had to back the car because of the narrowness of the road. The shed was just at the corner. Sometimes they had to go by the gate more than once to do this. The horse was not rearing, and he saw it all the time. A man held the horse, but that was because the men got out of the trap. When defendants caught the car up neither called out "Let me pass," and witness did not tell them to "— well wait." Witness heard what occurred between defendants and Bettridge; what he had said before was correct. He heard both defendants also brawling out "Go and fetch a doctor." Witness did not hear Claringbould say anything about the



watch at Folkestone races. Witness was close by, and would have heard. Asked as to some people who saw the row, witness said there were several witness called who were nowhere near.

Mr. Gill said he would call them in to be identified.

Henry George Curling was called, and witness said he could say on oath that he was not there during the row, as witness saw him come out of the public-house when he was going for the police.

Alfred Nilus Dowle, formerly at the South Foreland lighthouse, and now of Ramsgate, one of Marconi's wireless telegraphists, said that between the Red Lion public house and Drews' public-house he saw the defendants, between 7.30 and 8, driving down the High Street at a furious pace, and he and his family had to get out of the way. Afterwards he saw them drive back the same way, and later he saw them again driving towards the 'bus shed shortly after the bus had passed. The road at the corner was clear. Later he met Mr. Bettridge running, and the first thing he heard was Spanton saying, "We have frightened your secretary and we'll frighten you." The driver of the car was making several attempts to back in. The horse was then plunging about and was held by one of the crowd. He heard Spanton use bad language and challenge and threaten Akhurst, who replied to the threats, "Oh, will you?" He saw Waterer strike Claringbould, who was at the door of the shed. Witness then went up to protect the boy. The defendants were the worse for drink. There was no room to pass, but in two minutes there was. He did not see Waterer held back by anybody after he struck the boy. He heard the boy after being struck say, "I know you, you are the man who lost your watch at Folkestone races." This was all he said.

Henry Shoulders, a coastguardsman stationed at St. Margaret's, said he heard Spanton use bad language and challenge Akhurst. He saw Waterer assault the boy, but neither the boy nor driver used bad language. The car was partly across the road when he got there.

George Stephen Vaughan, a carpenter from St. Margaret's, corroborated as to the assault by Waterer on the boy. Several people then took the boy's part.

William Thomas Gillings corroborated as to the alleged furious driving. When the 'bus got to the shed he saw both Waterer and Spanton shake Mr. Bettridge. He heard Spanton use the bad language and challenge Akhurst, and also saw the assault by Waterer. He did not hear a word of provocation.

Police-Constable Saunders said he saw blood on the boy's face.

John Jackson Bettridge said he was secretary and manager of the Motor-Bus Co. On July 28th he met the 'bus at the "Red Lion," and rode to the door of the car shed, where he jumped down to open the door. Witness saw the defendants in a cart behind, so he ordered the car to back in as quickly as possible. The car stopped half in the shed, and then Mr. Waterer jumped down. Witness told him there was plenty of room to pass. He argued with witness, who then said, "I am not intoxicated if you are." Spanton then got down and stated that if he said they were drunk let a doctor be fetched. To smooth matters over witness apologised, and said all he wanted was for them to pass. He went away after apologising, as he thought if he did so no trouble would be caused.

Cross-examined: When the cart caught them up first they could have passed, but when they stopped he at once gave orders to back the car into the shed so as to let them pass. They did not back right into the shed, but on to the company's ground in front, which is 14 ft. 6 in. by 50 ft. The length of the 'bus is 19 ft. 6 in.

Recalled: No complaints had been received as to stoppages of traffic when entering the shed. The drivers' general instructions were to be most civil.

This concluded the evidence for the prosecution.

Mr. Gill then addressed the Bench, and dealt mainly with the imputation of drunkenness on his client, which he considered had not been sustained, and was absolutely without foundation. It was suggested that they were lying in wait for the 'bus, but this was a pure figment of imagination.

Murray Waterer said he was a farmer at St. Margaret's. He drove over to Deal on July 28th with Mr. Spanton. The horse, his own, was a spirited animal, and very difficult to drive. They got back to St. Margaret's about 8, and when driving to his farm were stopped by the 'bus. There was no room to pass and he shouted to them. Akhurst called out, "You must — well wait." He got down and told Mr. Bettridge there was no room. He said they were drunk, but afterwards begged witness's pardon and walked away. Akhurst said to witness, "You are a pair of drunken —." The car was then about six feet on to the road. Then commenced a "general swearing," but he denied swearing. The boy came up and said "You are the beautiful — that lost your watch at Folkestone races." Witness pushed him aside, but did not strike him. Witness was farming land for the Earl of Mexborough.

Toward Spanton, Whitfield, denied being drunk or that he was trying to pick a quarrel with the motor-bus people. He corroborated Mr. Waterer's evidence. In consequence of the obstruction and annoyance, he swore at the driver after the latter had sworn. He admitted offering to give the driver a good hiding.

James Williams, coachman at Mill Bottom, St. Margaret's-at-Cliffe, corroborated as to obstruction by the car. Both sides swore at one another. He did not see Mr. Waterer assault the boy. Both Mr. Spanton and Mr. Waterer were sober.

By Mr. Store: His father was bailiff to Mr. Waterer.

Henry George Curling, jun., said Mr. Spanton and Mr. Waterer were in the same condition as in court. He heard swearing on both sides at the car shed. The boy cheeked Waterer, who then pushed him away.

James Williams, bailiff to Mr. Waterer, said at 8.30 they were all right—quite sober.

The Bench, after retiring to consider the case, decided that the charge of assault against Waterer was proved, and fined him 10s. and £3 16s. 6d. costs. In reference to the other charges, the evidence was extremely conflicting, and not a single witness had not either contradicted himself or someone else. These charges on each side would therefore be dismissed. The Bench were of opinion that this case should have been settled out of Court.

Mr. Stone said that his side had not been approached.

The Chairman: Then my remarks may convey the reproach that no approach should have been made.—*Dover Express*.

## THE SPEED OF MOTOR-CARS.

WILLIAM DOWNIE, a motor-car driver, living in Sunnybank Place, was charged before Bailie Pollard in Edinburgh City Police-Court last week with driving a motor-car in a furious and reckless manner in Regent Road and London Road on the 22nd ult. He pleaded not guilty. Robert Sutherland, a constable, said that when on duty in Regent Road he observed the motor-car, which was one of the Edinburgh Autocar Company's, travelling between Edinburgh and Portobello, coming from Edinburgh at a very furious rate—about twelve or fifteen miles per hour. Being Saturday night the streets were very crowded at the time. He had cautioned accused once or twice about the rate of speed he drove at. Cross-examined: Witness admitted that he did not charge the accused until thirty-five minutes later, when he was coming down from Edinburgh again, but explained that he could not stop him at the time, being some little distance away. David Blair, another constable, and Finlay Sutherland, a tramway inspector, corroborated. For the defence, Mr. John Love, the manager of the Autocar Company, said their drivers received instructions not to go more than third speed, which was eight miles per hour. It was impossible for the car to go more than ten miles per hour, as it was only geared to that. Cross-examined by the prosecutor, witness admitted that in the hands of a novice, going down hill, it might go faster. If it did go more than ten miles per hour, however, it would shake the engine to pieces within fifty yards, and was therefore highly dangerous. Bailie Pollard pointed out that the car had gone to Portobello, returned to the Post Office, and was on its way back, a distance of at least six miles within thirty-five minutes without allowing for stoppages. Accused in his evidence said he had his brakes on going down the incline, and it was impossible under the circumstances to go more than eight miles an hour. Notwithstanding this Bailie Pollard chose to take the evidence of the policemen, and imposed a penalty of £2 with the option of seven days' imprisonment on the driver of the motor.

## AN IRREPRESSIBLE MOTOR-CAR "SCORCHER."

THREE summonses were heard at the Liverpool Police-Court on Thursday last week against a French boy, named Maurice Gildart, for having, on the 11th inst., driven his motor-cycle at three different periods of the day, at three separate points in the neighbourhood of Sefton Park, in such a manner as to endanger the life and limb of the public. The same defendant has been repeatedly before the court for similar offences and only two days before was fined 40s. and costs on each of two informations for reckless riding. The first case heard on this occasion referred to a "terribly excessive" rate of speed in Mossley Hill Drive on the morning of the 11th inst.; the second offence was committed shortly after noon on the same day in Aigburth Drive, where it was stated he was travelling at a "terrific pace," going very much faster than an electric tramcar; and the third case of serious "scorching" occurred about 11 o'clock on the same night in Lark Lane, where there was a considerable number of pedestrians. Mr. Watkins, who again appeared for the defendant, said his client did not come to court because, being French, he did not understand English. Mr. Watkins acknowledged that it was useless to attempt to justify or explain away the action of the boy, who had been previously fined five times for a similar offence, the penalties, of course, having to be paid by his employers. He (the defendant) was a skilful rider, but in view of the circumstances his employers had been compelled to take away the motor-cycle from him and lock it up, so as to avoid any repetition of the offence. The Bench imposed a penalty of 40s. and costs in each of the three cases—a total of £6 4s. 6d.

## MOTOR-CAR DRIVER FINED AT LOWESTOFT.

At Lowestoft Police-Court on Thursday last week Wm. R. Youngs, motor-car driver, Lowestoft, was summoned for driving a motor-car contrary to the Act in Cliff Road, Lowestoft, on August 11th. Defendant pleaded not guilty. P.-c. Chas. Read deposed to defendant travelling at twelve or thirteen miles per miles, causing his wheels to skid on to a jingle wheel. Defendant straightened his motor, and dashed away at the same speed. Witness had also received complaints about the defendant's rapid driving on the previous day. Henry Kenn and Arthur Boulron, jingle drivers, corroborated. Defendant said he drove his car very carefully; he had regard to the safety of his passengers and also of his car, which cost him £400. The extreme speed of his car was twelve miles per hour, and it was impossible to turn a corner at that speed, as was alleged by the witnesses. He denied having run into a horse. The Bench having retired for some time, the Mayor said the Bench did not want to be hard on motor-cars, or to show any apparent prejudice against them. They proposed to take a lenient view of the case, as it was the first prosecution, and imposed a fine of 10s 6d., or seven days.

## SALES, WANTS, Etc.

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BACK NUMBERS "MOTOR-CAR JOURNAL."—Numbers 1 and 4 are out of print. Of other back numbers we have but a few left. Those desirous of completing their files should make immediate application for missing copies. Usual price, 1d.; post free 1½d., or through any news-agent.—Cordingley & Co., Proprietors, 39-40 Shoe Lane, E.C.

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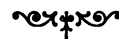
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To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

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[No. 26.]

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## COMMENTS.

### Motor-Cars in the Isle of Man.

The first of a number of motor-cars which are intended to run in conformity with a recent Act of the Manx Legislature to various towns and pleasure resorts in the Isle of Man arrived at Douglas on Wednesday last week. It is handsomely constructed, of *chars-a-banc* type, is on the Daimler-Panhard principle, and carries eight passengers and a driver. The same day the car, which ran smoothly and satisfactorily, was taken to Peel, a distance of ten miles, in just over an hour, doing the return journey five minutes under the hour. The newcomer was eyed with curiosity by a tremendous crowd at Peel, and met with an enthusiastic reception. The car has been built by the Motor Manufacturing Co., Ltd., of Holborn Viaduct, E.C., and Coventry, to the order of the Manx Cycle and Motor Co., Ltd., Douglas.

### The Trans-American Automobile Tour.

We have already referred to the trip of Mr. and Mrs. Davis in a motor-car from New York to San Francisco and to the poor results so far achieved. The latest accounts to hand show that the tour is still proving a dismal failure. Thus, the *Horseless Age* remarks: "The adventurous couple who are endeavouring to make 'San Francisco or bust' in a motor-carriage have apparently taken the latter alternative. At the rate at which they are travelling they could not reach San Francisco in less than five months from the date of setting out, and at the rate at which they are 'busting' they would have an entirely different carriage if they ever reached the Pacific Coast. If the unfortunate experiences of this couple shall do anything to discourage similar enterprises in the future their troubles will not have been wholly in vain. An immediate termination of the journey would be welcomed by the motor-vehicle industry of the United States."

### The Function of the Horse.

OUR good friend the *Electrical Review* has joined the prophets of melancholy things, and while recognising that "the motor-vehicle industry is now fairly established, and that very soon considerable numbers of vehicles will be seen at work," is, nevertheless, rather doleful, for "we also anticipate a considerable crop of very serious accidents. Without a horse in front to push a person out of the way these heavy motor-vehicles have their leading wheels well thrust out in front and absolutely devoid of safeguards of any sort." We did not know that the function of the horse between shafts was to push people out of its way as well as to draw the vehicle. Apparently, therefore, when a man, woman, or child is knocked down by a horse it must be accounted to the animal for playfulness, and merely indicate a desire to remove obstacles. Really we are surprised that the *Electrical Review* has not developed the idea and suggested that a rod resembling the barber's pole should be attached in front of motor-vehicles, with others hung out sideways, to clear a passage for the vehicle. Our contemporary has nothing against the motor-car as such, but it is sorely afraid

that without a horse to push people out of the way accidents will happen. Well, so thought the Editor of the *Stable and Kennel* when he saw a motor-car near his street; but, up to now, no damage has been reported in the locality.

### "Rely on the Police."

REALLY we are sorry to have to expostulate with the Editor of the *Stable* again, for after his recent kindlier tone we had thought he had begun to realise it was no use declaiming against the inevitable. And yet in his last week's issue the dear good man actually suggests that the declaration of a policeman to the effect that the pace of a motor-car endangered the public should be sufficient to secure conviction. This seems a laborious way of getting over the difficulty. Why not make it a criminal act to mount a motor-car? A penalty of six months imprisonment for such an offence should satisfy even so persistent an enemy as the Editor who discourses of the stable. When he wants a little relief from such monotony he should try a trip on a motor-car. The fresh air would revive his spirits.

### Horses and Tramcars.

THOSE who are afraid that the "noble horse" will not often be seen in the streets of London in the early days of the coming century may take comfort in the fact that the motor-car is not likely to entirely supersede the horse in Metropolitan thoroughfares till after the year 1999, so that the matter can hardly be regarded as coming within the view of current events. Despite the great advance lately made by electric traction, some 40,000 horses still find employment in hauling tramways, thus demonstrating how slowly changes are effected. Even the Glasgow Corporation tramways, which are largely operated by electricity, still find work for 4,267 quadrupeds.

### Junior Engineers and Motor-Cars.

ONE of the pleasantest trips enjoyed by the Institution of Junior Engineers during their recent summer meeting at Portsmouth was that to the works of the Liquid Fuel Engineering Co. at East Cowes. Under the guidance of Mr. Tousey, the party was shown over the establishment, which employs about 200 workmen and has a capacity for the construction of thirty "Lifu" steam wagons and twenty launches annually, among the orders now in hand being four steam omnibuses for Toulon. After the inspection of works, some of the Junior Engineers were driven to Whippingham in "Lifu" motor-cars, while others saw a demonstration of the working of the Company's steam launches.

### Motor-Cars on Teeside.

TYNESIDE having proved kindly to the motor-car services that have been provided, the Tees-side district is now to be similarly favoured and orders have been placed with the Daimler Motor Company, Limited, for eight cars with a seating accommodation of ten passengers each. The proposed services are from Stockton and Middlesbrough

to various suburbs, and it is contemplated to develop the scheme until Thornaby, Redcar, Saltburn, Darlington and the Hartlepoons are similarly served. Show rooms and repairing shops will be established at Middlesbrough and Redcar, and the plans of the North York and South Durham Motor-Car and Bungalow Syndicate, Limited, also include the letting of vehicles to tradesmen by the day, as well as catering for the public. Mr. D. Anderson, of Collingwood Street, Newcastle-on-Tyne, is at the head of the undertaking, Mr. J. L. Gribbin, a Middlesbrough solicitor, being also interested in the venture.

**A Chester Journalist behind the Times.**

"THE Duke of Westminster is long-suffering, but will he tolerate the motor-carriage?" Such is the momentous question propounded by the highly decorous *Chester Chronicle* last week.

It appears a member of the editorial staff was walking in the Duke's park and "met a motor-carriage with two men on the box and three or four ladies inside." The men were driving cautiously; they continually sounded the horn and "were everything that could be desired." So that there was nothing to say against the drivers, "but the motor-carriage was such an unusual object that horses would not face it." In fact, one horse was so alarmed that he "would have run into the wood but for the trees." What he would have done in the wood had the trees not been there we leave this Chester scribe to picture; but we are glad the trees stopped his course in that direction. Evidently our journalistic brother does not know that the Duke of Westminster attended the Motor-Car Exhibition at the Agricultural Hall and ordered a motor-car, which will undoubtedly be seen in the park at Chester, thus testifying to the encouragement of automobilism by a gentleman who is famous as a lover of horses. We agree with the *Chester Chronicle* that new regulations may be necessary in the ducal grounds, but would suggest that they should apply to the driving of horses by competent drivers and the education of



AN EARLY STEAM TRACTOR.—MR. LOFTUS PERKINS' VEHICLE, BUILT ABOUT 1870.

such animals (the horses we mean) to look without alarm on the Duke's motor-car and not to attempt to run into other people's woods. Again we must express pleasure that the trees prevented that rude horse entering the wood.

**Motor-Cars and the Boscombe Carnival.**

MOTOR-CARS were very much *en evidence* at the Boscombe carnival, which took place on Wednesday last week, no less than four decorated automobile vehicles taking part in the procession. Prominent among them

was the electrically-propelled bath chair, fitted with a Britannia motor and Sherrin accumulators driven by Master

Douglas Armstrong, the electrical engineer-in-charge, a young gentleman of only eight summers, with Miss Eileen Armstrong, aged six, as a passenger. This was the same chair—in fact, the identical juvenile driver—which attracted so much attention at the recent Exhibition at the Agricultural Hall, Islington. The Armstrong electric parcels carrier, fitted with Britannia motor and Crowds accumulators, was also on view in the trade tableaux class. The exhibition of these vehicles was due to Mr. Jas. Shepherd, of 15 Somerset Place, Boscombe, who we may mention has secured the agency for the same in that district. Another vehicle in the procession which attracted considerable attention was the Peugeot car owned and driven by Mr. A. W. Armstrong, of



MR. ARMSTRONG'S DECORATED PEUGEOT CAR AT THE BOSCOMBE CARNIVAL.

Hampstead, N.W. The carriage was decorated to represent "Harvest," and gained first prize for best decorated motor-cars. The decorations consisted of bunches of white and black grapes, mulberries, apples, pears, tomatoes, backed up with sheaves of corn, with poppies and marguerites intermixed, and bulrushes at the corners. For the best trade tableaux there were eight entries, the first prize being secured by Mr. C. Cowell, of the Avon Cycle Works, Boscombe, Bournemouth, who, as "King Cyclos," drove a decorated Benz car, he having four mounted cyclists on each side of his vehicle as attendants.

**Motoring and Marrying.**

MISS ELLA HEPWORTH DIXON—we must beg the lady's pardon if she is Mrs.—is a friend of the motor-car and a contributor to the *Lady's Pictorial*. In her study of the automobile she has discovered that "people in a motor-car always look more amused than people in a carriage drawn by a horse," and that although "timid elderly ladies and stout Justices of the Peace will be chary of taking up the new mode of locomotion," the motor-car has come to stay—or, she should have said, it has come to go. But in addition to these reflections Miss Dixon has studied the sociological and the matrimonial aspect of automobilism, and has come to the conclusion that "rural society will become vastly enlarged and broader-minded" as it takes to the motor-car. But that is not all: it may arrest the degenerate tendency of the species which is said to be going on, and thus prove itself one of the great influences of the modern world. In a remote part of Kent Miss Dixon has discovered that "the village folk intermarry to an alarming extent. It is only when the country-side is provided with electric omnibuses,

# The Gobron and Brillié "Silent" Motor-Car.

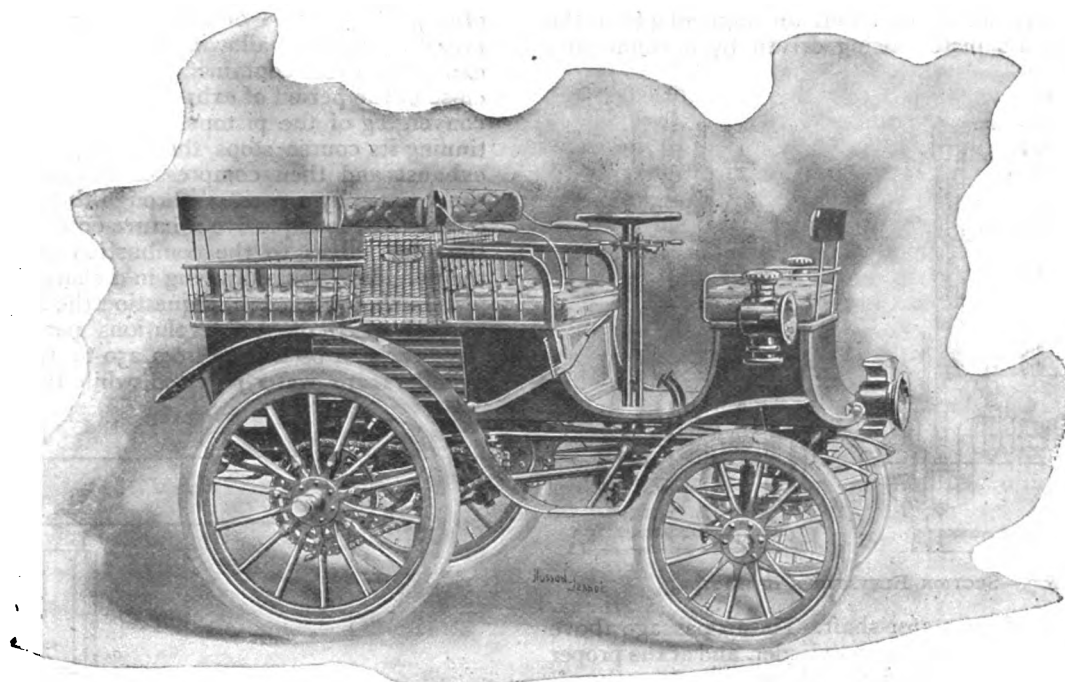


FIG. 1.—GENERAL VIEW OF WAGONETTE.

and intercourse is easy and frequent with other villages and towns that Hodge will discover that it is better for himself and for the race to espouse a maiden in a distant parish than his cousin and next-door neighbour." The electric omnibus will therefore be the vehicle for Cupid in the future, and the country lanes will lose their attractions for rural swains and maidens. But if all the lads are to go by motor-car to neighbouring villages, what is to become of the maidens sitting all forlorn awaiting the tooting of the automobile horn or the coming of the electric cab? But seriously, we fancy Hodge will keep at his plough and pursue his courting in his own way. If he sees a charming lass living a few hundred yards away he is more likely to make love to her than to spend his money in motoring to the next village and probably faring worse. Really, Miss Ella Hepworth Dixon is too enthusiastic on the subject of motoring and marrying.

## The British Association at Dover.

MOTOR-CARS should be prominent at the meeting of the British Association at Dover which commences on the 13th inst. Already we have recorded the proposed visit of the Automobile Club, and have chronicled the motor-car exhibition which will be held. Now we are able to announce, on the authority of the *Times*, that in the section devoted to mechanical engineering Mr. Thornycroft, of Chiswick, will read a paper on steam motor-vehicles. Every such discussion, as is certain to be evoked, should be welcomed by all interested in the progress of the "new industry"—a phrase rapidly becoming out of date.

M. CHARLES CRANINCKX, the well-known Belgian "chauffeur," who was terribly injured in a motor-car accident in July, is now rapidly recovering.

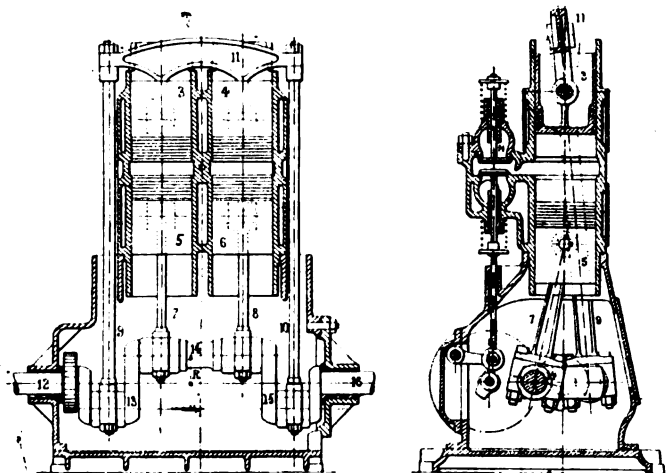
THE West London carnival was successfully held on Thursday last week in the grounds of the Godolphin Schools, Hammersmith. In the procession many well-known cyclists took part, Mr. F. G. Lewin, as "Dreyfus," mounted on a motor-tricycle, cutting a good figure.

THERE are many features of interest in the new motor-vehicle (Fig. 1) built by the Société des Moteurs Gobron and Brillié, of 17 Rue Philippe de Grand, Paris, and lately introduced into this country by the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, London, W. In our report of the Richmond Show we gave a brief description of the five-seated wagonette of this type there exhibited, which we are able to supplement with some further particulars and also illustrations of the motor and certain of the other details.

To deal first with the motor. This, as will be seen from Figs. 2 and 3, is of quite a new type, the object being to reduce vibration by arranging the parts in such a way as to secure absolute balance. In the motor, which is the design of M. E. Brillié, it will be noticed that there are two cylinders with two pistons in each (3, 4, 5 and 6, Figs. 2 and 3). The cylinders each work on what is known as the four cycle system and are connected together in such a manner as to obtain a working stroke for every revolution. The main features consist of the general arrangement of the pistons and connecting-rods so as to prevent disturbances by the inertia of the parts when the engine is in motion, and in an arrangement of pump whereby the burnt gases are cleared out and air supplied for mixing with and pulverising the oil when a liquid hydrocarbon is employed. The cylinders of each pair are in line with each other, the pistons of each pair moving in opposite directions. The pistons of the lower cylinders 5 and 6 of each pair drive the shaft direct by means of connecting-rods working on a crank 14 on the shaft and the pistons of the other two cylinders 3 and 4 drive the shaft indirectly by means of a swivelling cross-head 11 connected to the two pistons and having its ends connected by links or pitmen to two cranks 13 and 15 set at 180° to the preceding ones. The radius or throw of the crank 14 to which the lower pistons are connected is greater than that of the cranks 13 and 15 to compensate for the extra weight presented by the indirect connection of the pistons with the shaft. The inlets 11 for the combustible mixture to, and for the exhaust of the burnt gases from, the cylinders, are situated between the cylinders of each pair. The inlet valves communicate with

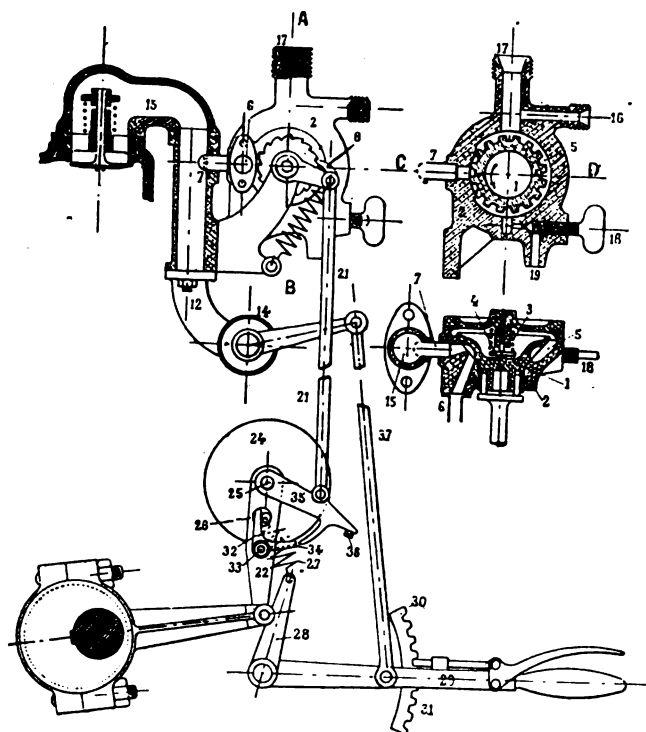


a chamber in which opens a valve for the inlet of air, a passage conveying the gas or oil and a passage opening into an air pump also leading into this same chamber. All the valves are operated by cams mounted on counter-shafts which rotate so as to operate the valves at the requisite times. An air pump cylinder is set at or about an angle of  $45^\circ$  to the working cylinders, its piston being driven by a connecting



FIGS. 2 & 3.—SECTION ELEVATIONS OF MOTOR.

rod from the crank of the motor-shaft. The air passage above referred to opens into the air pump cylinder, and at the proper time is closed by the piston of the air pump. Into the air pump cylinder also opens an orifice which at a given moment can be placed in communication with the interior of the cylinder by a passage formed in the piston of the air pump.



FIGS. 4, 5 & 6.—SECTIONAL VIEWS OF CARBURETTING DEVICE.

The cylinder is also provided with an inlet or supply valve for air, the orifice being connected with a pipe leading to a petroleum pulverizer for supplying air to and pulverizing the charge. As the motor-shaft rotates the lower pistons 5 and 6 are moved in the opposite direction to the upper pistons 3 and 4, and as the latter have a higher speed than the former by reason of the difference in the throw of the cranks, the strains due to inertia from the upper pistons and links or

pitmen are therefore compensated for. The piston of the air pump draws in at every revolution a certain quantity of air while at the same time a valve shuts off communication with the atmosphere. At this moment exhaust takes place in one or the other cylinder (while there is compression in the other). The valve of the cylinder which is exhausting is raised by its cam allowing a free passage for the air which expels the gases contained between the two pistons. At the close of the period of exhaust, that is to say at the end of the converging of the pistons, the piston of the air cylinder continuing its course stops the passage of air to clear out the exhaust and then compresses the air which at the proper time passes by a passage through the piston to mix with the oil so that the explosive mixture enters the chamber between the inlet valves to the combustion chambers just as one of the cylinders starts drawing in a charge.

In the wagonette in question the motor is of 6 h.p., at a normal speed of 700 revolutions per minute. The latter, however, can be varied from 250 to 1,000 revolutions. The cylinders are water-jacketed, while the ignition is electrical.

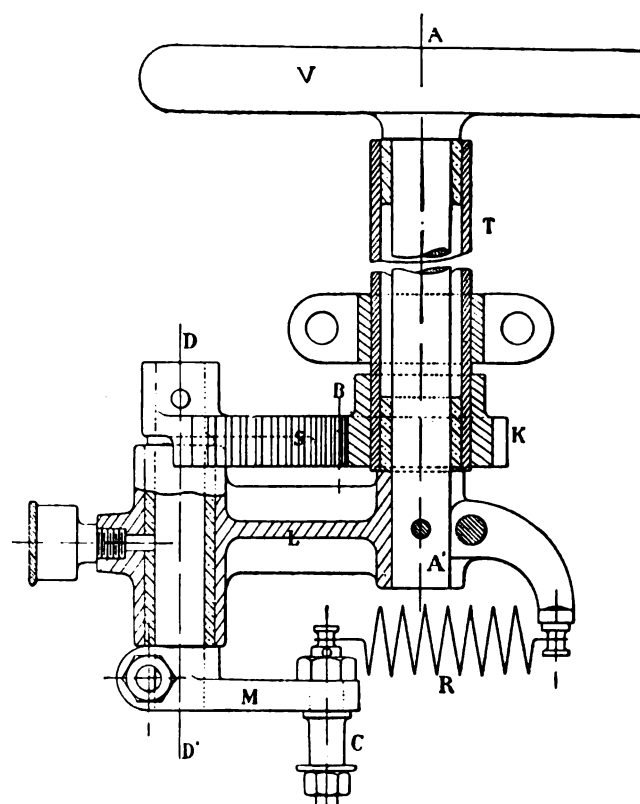


FIG. 7.—DETAILS OF STEERING GEAR.

Only one induction coil is employed, the spark being obtained alternately in each cylinder by means of an automatic commutator arranged in the secondary circuit. The water tank has a capacity of about four gallons, the heated water being passed through a condensing coil in front by means of a small plunger pump ere it returns to the tank.

In place of the ordinary form of carburettor, Messrs. Gobron & Brillié employ what they term a mechanically-operated volumetrical distributor, which measures exactly and automatically the volume of petrol required for each explosion, the mixture of the same with air taking place in the suction pipe. The details of the apparatus are shown in Figs. 4, 5, and 6 (Fig. 5 being a section through the line A B and Fig. 6 a section at C D). The distributor proper consists of a conical plug, which has formed on its outside face a series of equi-distant grooves. This plug turns and is held by a spring 3, in a seating 2 in communication with the petrol storage tank. A circular space formed in the seating 2 permits the petrol to pass freely into the grooves in the plug. At 6 and 7 converge two

pipes, the one 6 being the air inlet, the other 7 leading to the inlet valves of the cylinders. Externally the plug 1 is actuated by a small shaft carrying a ratchet wheel having the same number of teeth as there are grooves in the plug. The ratchet wheel is operated by the pawl 8; a governor acting on the lever 21 controls this pawl, the latter being so arranged that it can be prevented from operating the ratchet wheel and consequently the plug 1. The rotation of the latter being in the direction of the arrow, it will be seen that at the moment that one of the grooves of the plug 1, full of petrol, comes in front of the inlets to the pipes 6 and 7 the aspiration stroke of the motor will draw in a charge of air along the pipe 6, which air passing into the pipe 7 will draw with it the petrol in the groove of the plug. The petrol is pulverised by means of a screen in the pipe 7, and is afterwards mixed with fresh air entering by the pipe 12. The amount of air allowed to pass through the pipe 12 is regulated at 14 in such a way that at the moment of exhaust a reduction takes place in the pressure in the chamber 15, so as to give rise to a sufficient in-draught of air by the pipes 6 and 7. The petrol from the storage tank passes into the distributor by the pipe 16. At 17 a small chimney is provided which permits any globules of air in the distributor to escape.

The governor controlling the lever 21 comprises a lever 22 (Fig. 4), which receives its oscillating motion from a cam or eccentric on the motor-shaft 23. A weight 24 loosely

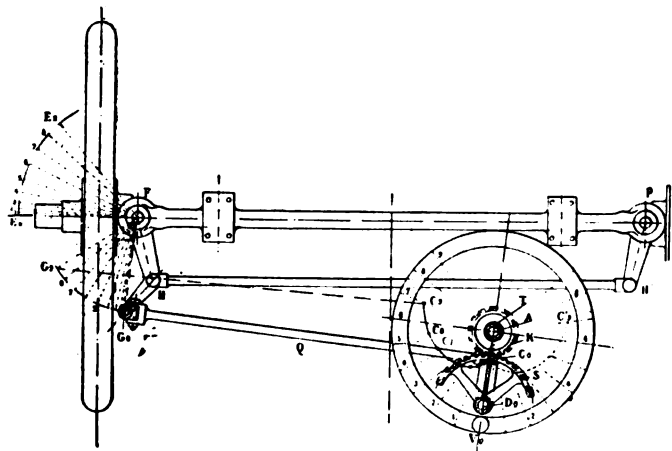


FIG. 8.—DETAILS OF STEERING GEAR.

mounted on the shaft 25 of the lever 22 is moved during the oscillation of the lever, by a projection 26 which extends through a hole in the lever 22. The weight 24 is held by a spring 27, of which the tension may be varied by means of the hand lever 29, placed within easy reach of the driver. On the lever 22 is a tappet 32, pivoted at 33; it is controlled by a small spring, which tends to keep the upper part of the tappets in contact with the projection 26. The other end of the tappet 34 is arranged so that it can push the point of a lever 35, pivoted at 25, the movement of which controls the rod 21. So long as the spring 27 maintains the contact between the projection 26 of the lever 22, the oscillation of the latter is transmitted integrally to all the organs of the governor, and at each revolution the rod 21 is lifted, allowing a charge of spirit to pass into the pipe 7. Should the speed tend to rise above the normal, the effort of inertia of the weight 24 will increase, and by means of the projection 26 the tappet 32 will move on its axis so that its end 34 will clear, and so not lift, the lever 35, consequently cutting off the supply of petrol. The tension on the spring and the speed of the motor can be varied as desired by placing the lever 29 in one or other of the notches in the sector 31, the motor being brought to a standstill by placing the lever in the extreme notch 30. It is claimed for the device that it ensures a constant supply of petrol for each impulse, and that it gives a regular mixture independent of atmospheric conditions and of the driver.

Another feature of the car is to be found in the steering gear, which is arranged to give a variable multiplication of the ratio of movement between the steering hand-wheel and the front road wheels. This device, by means of which not only can turns, it is claimed, be made with but little movement of the hand wheel, but on straight roads the hand wheel can be left free without any deviation of the front wheels taking place, is shown in Figs. 7 and 8. The hand wheel *V* is rigidly fixed to the upper end of the vertical shaft *A A'*, within the hollow standard *T*; to the end of the latter is fixed a small pinion *K*. The lower end of the vertical shaft *A A'* carries an arm or lever *L*, terminating in a hollow piece which serves as a bearing for the shaft *D D* parallel to *A A'*; to the upper end of *D* is fixed a toothed sector *S*, which gears with the pinion *K*. To the lower end of the shaft *D* is connected a crank arm *M*, controlling the steering lever on the piece *C*. The spring *R* serves to tend to maintain in the same vertical plane the three shafts *A C D*. If a movement of rotation is given to the hand wheel *V* the shaft *D* will move in a circle round *A*. The sector *S* gearing with the fixed pinion *K*, all parts in rigid connection with *S*, and in particular the piece *C* of the crank *M*, will be given an epicycloidal motion. A diagram of the relative displacement of the front road wheels to that of the hand wheel is given in Fig. 8. As the hand wheel is turned to the right or left the point *C* will describe one of the curves *C<sub>0</sub> C<sub>1</sub> C<sub>2</sub> C<sub>3</sub>*. In fact, as the hand wheel is turned to the successive positions 1, 2, 3 to 9, the point *C* will occupy successively the corresponding positions *C<sub>0</sub> C<sub>1</sub> C<sub>2</sub> to C<sub>8</sub> C<sub>9</sub>*, the space between which progressively increases; thus for an equal displacement of the hand wheel, either to the left or right, the angle of deviation of the road wheels becomes the greater the more they are turned from the straight.

The body of the car is quite distinct from and is supported by indiarubber springs on the frame which carries the motor and transmission gear. The frame is of a special design, and built up of steel tubing, well stayed. Three forward speeds (ranging up to twenty miles per hour) and one backward motion are provided. The transmission is effected by gear wheels, there being two intermediary shafts, a friction clutch being arranged on the first one, the connection between the second intermediary shaft and the rear road wheel being effected by chain gearing. In the car under notice the motor is located centrally, but Messrs. Gobron & Brillié are also building cars with the motor at the front or rear as desired. All the control levers are arranged within easy reach of the driver, the speed-varying handles being mounted on a short vertical shaft parallel to the steering standard. There are two foot pedals, one of which controls the friction clutch between the motor and transmission gear, while the other actuates a cord brake on the differential shaft. A hand brake acting on the tires is also provided. As will be seen from the foregoing description the car presents many novel features, and if the claims as to the absence of vibration can be substantiated in practice it is one which should meet with a large adoption at the hands of automobilists.

At the last meeting of the Lowestoft Town Council, a letter was received from Mr. W. R. Youngs, of the Lowestoft Motor-car Company, Limited, asking the Council to appoint stands for their motor-cars. On the recommendation of the Sanitary Committee, it was resolved that for the present the stand should be fixed to the west of the Royal Hotel, near the Royal Plain.

THE visit of Messrs. Barnum and Bailey's show to Newcastle-on-Tyne was the means of giving a large number of country persons an introduction to the motor-car. Since their arrival in Newcastle the cars have been quite unequal to the demands made upon them. Those running to Gosforth, Osborne Road, and Jesmond are always crowded, and many persons who had a prejudice against the new vehicles have had their views changed by experience.

## THE MORS CARRIAGE.—II.

By VELOX.

(Continued from page 379.)



ON the left of the driving seat, at a level with the seat itself, is placed the gear controlling the tension of the belts. This consists of a vertical rod, terminated at the top end by a crank handle. This rod actuates the tension gear through the medium of a crown and worm-wheel arrangement duplicated on the end or side of the car. The two endless screws draw forward or drive backward the bearings resting on slides and carrying the secondary shaft. These bearings are kept in perfect parallel by the synchronous movement of the two screws. By this arrangement the secondary or intermediate shaft is withdrawn further from or is driven closer to the main or driving-shaft, with the result that as these movements occur the belts carried on the pulleys of these shafts

is another handle which completes a vertical rod. This actuates the reversing gear. Two foot pedals placed on the footboard complete the control gear proper; one placed for operation by the left foot throws the motor out of gear with the transmitting mechanism, operating an ordinary type of male and female friction-clutch; the other, placed for operation by the right foot, controls the brakes, and at the same time also operates the clutch gear and throws the motor out of operation. The "devil" or "sprag" used to prevent the descent of the car when stopped on a steep hill is operated by the lever 11 shown in Fig. 1 of our illustrations (p. 378, *ante*).

Before commencing a further general description of the mechanism, we desire to again allude to the vertical handle, fixed on the left end of the handle or steering bar. At the top of the handle is a button, which is, in fact, a spring cutting out the switch, permitting the current to be cut off from the ignition gear by the mere pressure of the thumb of the left hand whilst the hand itself is manipulating the steering handles. By this device also the speed of the car can be further controlled, and in dense traffic the ability to at once stop the passage of current to the explosion chamber is of extreme advantage, as the number of successive explosions can be regulated at will.

1. Case containing the 4 self-induction coils.

2. The four tubes conveying the cooling water from the cylinder walls.

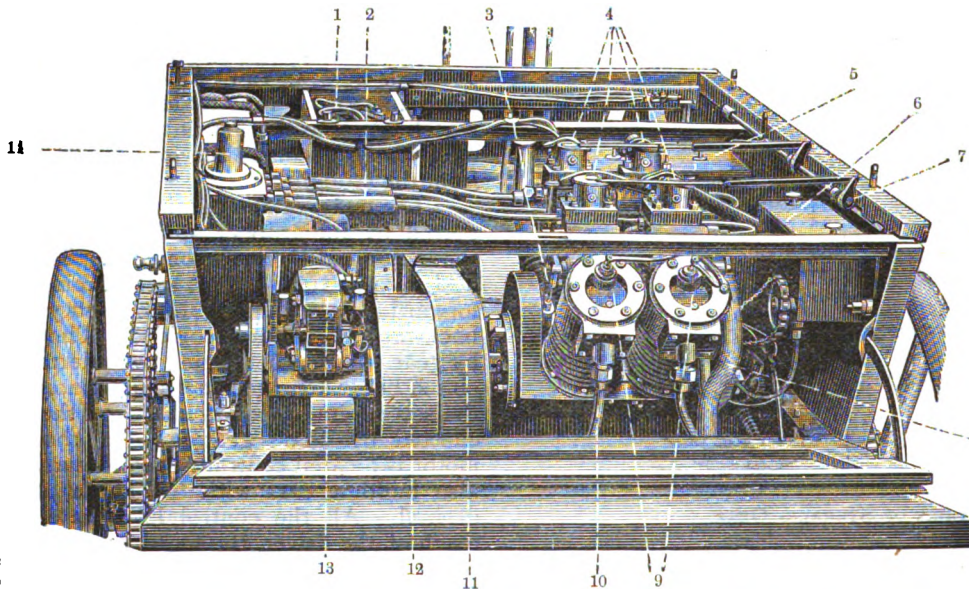
3. Enclosed crank chamber.

4. Four discs controlling the admission of explosive mixture to the four explosion chambers, and controlling the quality thereof.

5. Carburettor.

6. Hamelle automatic lubricator.

7. Articulated arms, actuated by moderator lever, and controlling the discs, admitting the explosive mixture to the cylinder.



8. Exhaust pipe communicating from the exhaust valves to the exhaust chamber.

9. Exterior view of the electric ignition or sparking device.

10. One of the four pipes conveying water to the cylinder walls.

11. High-speed pulley.

12. Low-speed pulley.

13. Dynamo for generating current.

14. Bonchon of the smaller water reservoir.

FIG. 2.—VIEW OF MOTOR AND TRANSMISSION GEAR OF MORS DOG-CART AS SEEN FROM REAR.

are tightened or slackened as the case may be. By the extreme delicacy of the adjustment it is possible to secure just that exact tension under which the motive power is best communicated.

On the steering pillar, underneath the handle bar, are two hand levers, which communicate through the medium of rods with the belt shipping devices. One handle is used to ship the belt from the loose to the fast pulley of the high speed gear, and the others to effect a similar service in regard to the low speed gear, the fast or live pulleys in both cases, of course, being carried on the secondary shaft.

Apart from the speeds obtainable by these two positive speeds, the driver has command of the whole gamut lying between and below them by manipulating the tension gear. Furthermore, he has additional power to increase or diminish his speed by a moderator controlled by a small lever working in a ratchet and placed at the driver's right hand on the outside of the car as previously mentioned. The working of this lever requires no appreciable effort, thanks to the multiplication of its movement through a series of articulated levers, and by its aid the most complete control of the speed of the car and its evolutions can be maintained.

Under the levers controlling the belt shipping device

Passing now to Fig. 2, it remains to be said that the whole of the body of the carriage can be removed at once from the frame, etc., by simply unscrewing four nuts and lifting the body *en bloc* from the frame. When this is done the illustration given in Fig. 2 gives a correct exposition of what is seen when standing at the back of the car.

This view of the mechanism gives at once a perfect conception of the whole of the mechanical organism of the car immediately at a glance. The motor, of course, first appeals to one's vision. In Fig. 2 the posterior pair of cylinders are at once seen; the front pair, however, are concealed by the first-mentioned. The cooling radiators placed round the back pair of cylinders are plainly seen, whilst it is also plain that the explosion chambers are equal in diameter to the full extent of the radiating fins owing to their envelopment by a water-jacket. Each system of heat radiation contributes its quota to the efficient cooling of the cylinders. At the end of the explosion chamber there can be seen the outwardly projecting ends of the firing device, which will be more particularly described later. The observer's first remark on examining the mechanism from this point of view is one of surprise that the motor instead of being placed centrally in the frame of the vehicle is in



effect placed at one side, the main or driving shaft having a greater length to the left hand than to the right. At first sight it would seem obviously a better arrangement to place the motor centrally, as by such means a more perfect distribution of weight would be secured.

(To be continued.)

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### A Lengthy Tour.

MONSIEUR AND MADAME ALBERT GAUTIER have just returned to Nice after a highly successful automobile tour, during which they travelled no less than 3,200 kilometres. They traversed Italy and Switzerland; they

followed the course of the Rhine to its source; they visited the Vosges, Jura and Dauphiné; and yet we are informed by a certain section of the press that the automobile is not at present a reliable vehicle!

### Automobiles in Belgium.

THE legal limit of speed for automobiles when traversing any Belgian towns has now been reduced to ten kilometres per hour, and it is rumoured that the King himself has fixed this maximum. As, however, the police

regulations embodying this condition do not come into force until November next the Paris-Ostend race is in no way affected.

### Accident to Monsieur A. de Lucenski.

THE director of our French contemporary, *Le Journal des Sports*, has been singularly unfortunate this year in the matter of accidents. Quite recently his mechanician was seriously injured and his car badly damaged, and

now particulars of a further mishap are to hand. On the 24th ult. he was returning to Cabourg from the Deauville races in his automobile, accompanied by Mdme. de Lucenski and M. Charles Bertrand, a new mechanician being in charge of the car. This man in avoiding a vehicle made so sharp a turn that the car and its occupants were precipitated into a deep ravine by the road side. Fortunately the injuries sustained by the travellers were not of a serious nature, and they were able to proceed to Cabourg in a "hippomobile." The car, however, was badly damaged.

### The Automobile Clubs of France and America.

M. LE BARON DE ZUYLEN, as president of the Automobile Club of France, has received a letter from Mr. George F. Chamberlin, the temporary president of the newly-founded Automobile Club of America, in which the objects of the

new society are set out. Mr. Chamberlain requests permission to enrol the names of the president and vice-presidents of the A.C.F. as honorary members of his club, and he further expresses the desire to establish amicable relations between the two societies.

### Long Run by an Electric Car.

UNTIL a few days ago, probably the best performance on an electric car in France was that of Le Comte de Chasseloup-Laubat and M. Jeantaud, who travelled to Rouen in one day, but we have now to record a noteworthy

advance on this ride. MM. Bouquet, Garcin and Schivre

have succeeded in making the journey Paris-Caen in two days, the first stage taking them as far as Rouen. We observe that these gentlemen are competing in the tourist class of the Paris-Ostend race, and understand that they will recharge their accumulators at Saint-Pol, the termination of the first stage.

### Paris-Provins Race.

THIS "course," which is set down for decision on Sunday next, includes an entirely new category. It is one for motor-cycles actually owned by and in the personal service of the rider. This ruling therefore excludes all those

"chauffeurs" who race in the interests of manufacturers or who ride machines owned by manufacturing firms. Is not this a step towards a definite distinction between the amateur and the professional racing man?

### Fracas at the Clément Works.

LAST week at the works of M. Clément at Levallois there took place a most regrettable incident which might have resulted very seriously. A recently engaged foreman, by name Philibert Gasselien, had earned the enmity of the employés in the motor-cycle department, and on the 24th ult. they attacked him as he was entering the factory. Repeatedly struck, and fearing for his life, he drew a revolver from his pocket and fired upon his assailants, one of whom he wounded. The rest took to their heels and fled, leaving the two men upon the ground. After removal to their domiciles it was found that the wounds were not of a very serious nature.

### Stations for Cycles and Motor-Cycles.

A CORRESPONDENT of our contemporary, *Le Vélo*, has put forward a really capital idea, and which will, if adopted by the authorities, prove a perfect boon to all Parisian cyclists. His suggestion is that at all the "kiosques" and cab-

stands stations be installed for the purpose of taking care of cycles during the temporary absence of their owners. Surely the authorities will adopt this idea, against which there can be no objections, and which would be warmly welcomed by the cycling world. There is no doubt that the institution of such stations would largely increase the number of cycles in use for business purposes, as at present many people are deterred from employing their machines by the inconvenience and trouble they are put to when making a call. For example, under present conditions you set out to call upon a friend. You ride a new and expensive machine, and upon arrival you hesitate as to your course of action. Shall you leave the cycle in the street or take it inside? The *concierge* will probably object, so you decide to leave it outside, and you search for a man to take charge. Filled with misgivings, you spend half an hour in scrutinising a dozen and can trust none. You think you will take the machine inside after all! In the case of a motor-cycle much persuasion is required to induce it to mount firstly the kerb and then the step of the entrance hall. The *concierge* receives you coldly, and, noticing the muddy wheel tracks, says "things" under his breath. Your friend lives on the fourth floor, and you mount laboriously, studying meanwhile the muddy condition of your trousers due to your struggle with the machine in the hall. You reach the fourth floor. Your friend is out! You descend in a fury to find that the *concierge*, enraged at the mud and a lake of lubricating oil in his hall, is endeavouring to stick pins through your tires. Finally you bump the cycle back into the street, and catch sight of your friend seated comfortably in a neighbouring café, where he has been, he assures you, for the last hour. Yes, the inauguration of stations would indeed be a blessing!

### The Paris-Trouville Race.

ORGANIZED by *Le Journal*, this race presented many unique features, as it embraced classes for pedestrians, horses, cyclists, motor-cyclists, and automobilists, and could in all truth be styled an omnium handicap. The distance between Paris and Trouville is 175 kilometres, and the handicap framed by the promoters was as follows:—Pedestrians started from Saint Germain on Saturday at 9 p.m.; horses, Sunday, 3 a.m.; cyclists, Sunday, mid-day; motor-cyclists, Sunday, 1.45 p.m.; automobilists, Sunday, 2 p.m. The first and second to arrive at Trouville were horses, both finishing considerably in advance of the third arrival, a motor-cyclist. The classification was as follows:—Pedestrians: 1 Desgrauchamps, 2 Boitard, 3 Borrino; average per hour, 8 kil. 100 m. Horses: 1 Giren, 2 Bougon, 3 Poulingue; average per hour, 14 kil. Cyclists: 1 Mion, 2 Stein, 3 Hildebrand; average per hour, 34 kil. Motor-cyclists: 1 Teste, 2 Bertin, 3 Osmont; average per hour, 57 kil. Automobilists: 1 Antony, 2 Levegh, 3 Hénon; average per hour, 58 kil. In the general classification the order of the first ten arrivals was as follows:—1 Giren (horse), 2 Bougon (horse), 3 Teste (motor-cycle), 4 Antony (motor-car), 5 Levegh (motor-car), 6 Bertin (motor-cycle), 7 Osmont (motor-cycle), 8 Bardin (motor-cycle), 9 Gasté (motor-cycle), 10 Poulingue (horse). The average speeds maintained by the leading motor-cycles and the automobiles are truly extraordinary. The two first automobiles were the Mors cars, which were so successful in the Paris-St. Malo race.

### A Paris-Trouville Race for Motor-Cycles and Voiturettes.

THE same day as the Paris-Trouville handicap was run off a number of motor-cycles and voiturettes competed over the same route. The race was known as the "coupe des chauffeurs amateurs." The start took place at 10 in the morning, and the first motor-cycle reached Trouville at 2 o'clock. This was Seignol, Cormier being second at 2.14, and Arnaud third. In the voiturette class, Louis Renaud arrived first at 3.41; and Marcel Renaud at 4.48. The third was a Cyrano de Bergerac car at 6.31. The two first voiturettes are those well known as the "Renaud," supplied by Messrs. Farman & Co. These cars are by no means racing vehicles, and considering they are fitted with a De Dion 1½-h.p. motor, and can carry two persons, the result is not bad. It shows that the car (which is provided with three forward speeds and one reverse motion) is reliable.

### Feeding Pillars for Electrical Vehicles.

IN November last year the Syndicat Professionnel des Industries Electriques, the Association Amicale des Ingénieurs-électriciens, the Automobile Club de France, and the Syndicat des Usines d'Electricite opened a competition for the best feeding pillar for supplying electrical energy to the accumulators of electric vehicles. The jury appointed to consider the designs submitted has just made its award. It appears that only four entries were received. The report on the apparatus submitted is to the effect that as a whole the competitors have complied with the technical requirements, and that in certain cases provision has also been made for prepayment for the energy supplied. The chief fault found is the great cost of the complete apparatus, which ranges from £28 to £54, this not including the necessary connections. The universal connector for use with the pillars has also been less well thought out, and the judges do not consider any of the samples submitted satisfactory. One of the devices so received is apt to earth the supply, and the other may cause short circuits if not judiciously handled. Here, again, the judges complain of the cost. The prize of 400 fr. (£16) is being equally divided between La Compagnie Générale des Travaux, d'Eclairage et de Force, in collaboration with La Compagnie Continentale pour la Fabrication des

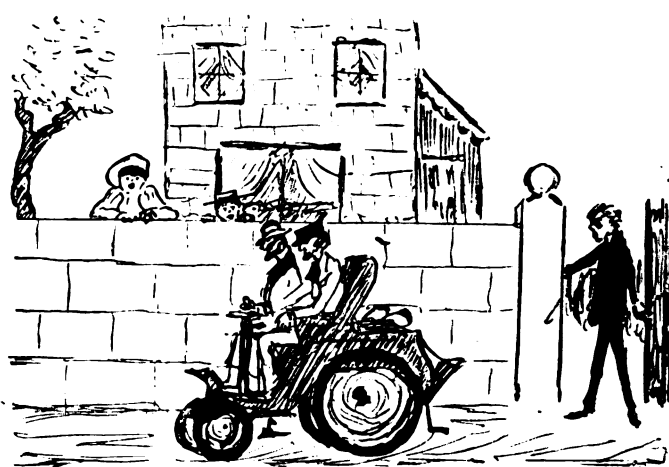
Compteurs à Gaz, and La Société pour le Travail Électrique des Métaux.

### The Berlin Motor-Car Exhibition.

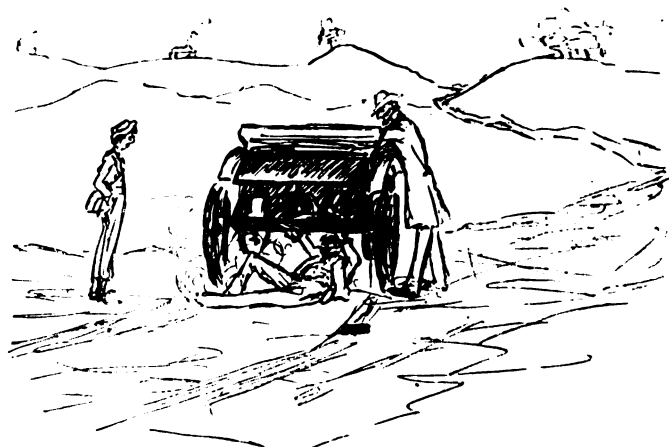
IN connection with the Berlin motor-car exhibition which opens on Sunday next, the 3rd inst., and which promises to be of a very important character, the authorities have decided to organize a series of daily motor-car trips around Berlin. In addition a race for motor-cycles and voiturettes between Berlin, Baumgartenbruck and back is to be run off on September 12th, and on the 17th inst. there will be an automobile race from Berlin to Dresden.

## "THE AMATEUR MOTORIST'S OUTING ;"

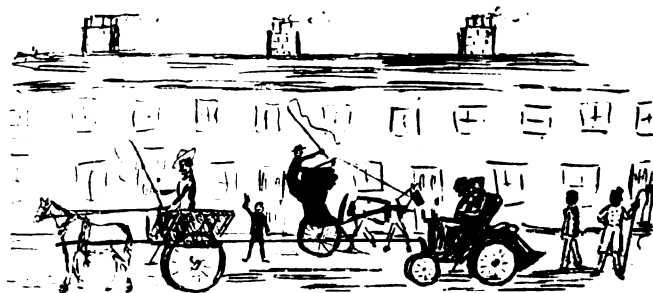
OR, "A FRIEND IN NEED IS A FRIEND INDEED."



1.—THE START.



2.—AN INTERLUDE.



3.—THE RETURN.



## CORRESPONDENCE.



### WANTED—A UNIFORM FOR MOTOR-CAR DRIVERS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Will any of your readers kindly tell me of a suitable livery or uniform for a man-servant in charge of a motor-car? I cannot let my servant accompany me in coachman's livery—top-boots being somewhat out of place in the absence of a horse—but do not know what to replace it with.

I am, Sir, yours truly,  
East Moulsey, August 28th, 1899. PHYSICIAN.

### THIRTY MILES PER HOUR UPHILL!

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the account in your issue of the 18th inst. of the case which was heard before the Isle of Wight county magistrates, one witness swore I was going thirty miles an hour—all uphill!

As my machine is a 4-h.p. English Daimler geared to a maximum of fourteen miles an hour, and as I cannot get up the hill in question on the top speed, you will at once see the absurdity of the statement without my making any further remarks.

The Terrace, Ryde, I.W., Yours truly,  
August 25th, 1899. W. PLAYER BRIGSTOCKE.

### FROM COVENTRY TO ABERYSTWYTH.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I recently ordered a *chars-a-banc* from the Motor Manufacturing Co., and accepted delivery at the works at Coventry on the evening of Saturday, August 5th, travelling to West Bromwich and stopping there for the night. On Sunday morning at 9 o'clock I started for Wolverhampton, putting in at one of the cycle works for forty minutes, where we filled up and took in a supply of petrol. Then on to Shifnal, staying two hours owing to heavy rain, and on to Wallington and Shrewsbury, the "best eleven miles of good roads one could wish for," stopping 1½ hours at Shrewsbury. Being misled I went nearly as far as Oswestry, then through Knockin and Llanymynech to Welshpool and Newtown, staying one hour at each of the last two towns; on to Llanidloes, reaching there at 8.45, in the rain. We put up for the night, leaving there at 7 o'clock Monday morning, and reached Aberystwyth at 10 o'clock. The *chars-a-banc* has given every satisfaction. It carries eight passengers, and has a 5½-h.p. Daimler motor. I may say the trip throughout was most enjoyable, and caused surprise to all the villagers as we passed through. Wishing your Journal continued success,

Mill Street Works, I am, yours truly,  
Aberystwyth, Aug. 26th, 1899. W. H. HOLLIER.

P.S.—The total distance travelled was 154 miles, ninety-two being journeyed on the Sunday, and thirteen gallons of petrol being used.

### ON TOUR BY MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The tour referred to in your last issue has now commenced. The week before last my car was brought from Aberdeen to Edinburgh, and at that time was fitted with Carmont's shielded rubber tires, which were uncommonly heavy, averaging 75 lb. each; yet the journey was performed at an average of eight miles an hour. I had a week to spare in Edinburgh before commencing tour, so took several runs to interesting spots around "Modern Athens." On Wednesday, the 23rd inst., I was favoured with a call from

Mr. Percy Richardson, the representative of the Daimler Motor Company, Ltd., who took a short trip on my car, and gratified me with an expression of complete satisfaction at the way my motor was working. Naturally, before starting on so long a tour as mine promises to be we gave the car a minute inspection, and, seeing that several of the iron shields of the tires were eating into the rubber, on the advice of Mr. Richardson at once decided to have new Clincher tires fitted. In a few minutes my wants were made known to Mr. Stephens, the genial manager of the North British Rubber Company, Ltd., at their Prince's Street shop in Edinburgh, and he immediately took his place by my side, when we motored to the Castle Mills, and soon the wheels were under the scrutiny of their affable manager of works, Mr. John Cockburn, who advised me to have a new section of rubber especially designed for motors, to which I at once consented. He expects great things from this new style, and as mine is the first car to which they have been fitted I have promised to let him know from time to time how they wear and answer. The results obtained with regard to this should be of considerable interest to motor-car manufacturers. "Celerity" was the word at the "Clincher" works, so quickly were my wheels transformed. The moment I mounted the car I was delighted at the improvement. We scaled at the North British Rubber Co.'s weighing machine and balanced at 22 cwt. 1 qr., with water and oil, whereas previously under the same conditions we weighed 24 cwt. 3 qr. Our start for Carlisle was timed for 8 a.m. on Friday, the 25th inst., and after leaving the "Clincher" works on Thursday we loaded up a "cinematograph" fixed to a biunial lantern, a "colour photography" apparatus for projection by the Ives' process, two 40-ft. cylinders, one each of oxygen and hydrogen, and other paraphernalia incidental to the show—in all quite 8 cwt. At the last minute I had an urgent call to Glasgow, so I had to send my friend, Mr. A. Sinclair (who is to officiate as driver and cinematograph operator), off by himself, and arranged to meet him by train at Carlisle. This I did on Saturday, and he reported the journey a great success. The car was much admired *en route*, and caused quite a sensation at Langholm, N.B., where he stayed for the night. The journey was done at an average of ten miles an hour, and when one considers that there are some stiff pulls over the Cheviots, I think (considering the weight) this establishes something of a record. The quantity of petrol (which was obtained from Mr. Peter Lee, of Glasgow) consumed was less than 8 gallons for 103 miles. At Carlisle station, where the car awaited my arrival by train, quite a crowd of admirers were around, and you could hear a distinct hum of approbation as we glided from the station precincts for Burgh-by-Sands, distant from Carlisle nine miles, and which we reached in less than an hour. The natives there and *en route* were very much astonished, and the sensation caused seems to bode well for a good "house" on our opening night. We stabled at the Lowther Arms, within a mile of the monument erected on the marsh at the spot where King Edward I. ("Longshanks") died, and this morning we motored to seven or eight hamlets in the vicinity, announcing our entertainment for to-night.

From this first experience I am convinced I possess a very valuable advertising adjunct—the trumpet brings the people out, they gaze, they inquire, they are handed a leaflet, and we return rejoicing that the whole district for miles around knows of our visit, and in anticipation of a bumper "house." The car will assuredly assist to bring grist to my mill, to say nothing of its exhilarating influences on myself, my driver, and my pianist. I believe I am the first to incorporate the use of a motor with a travelling entertainment, and being confident of its utility for such purposes I have no desire to keep the knowledge of its benefits "up my sleeve," but through the journals associated with our business hope to make my success known to brother performers, and I am sure some of them will be spirited enough to "hurry up and go and do likewise." I trust that many of that huge section of humanity known as "the Profession" will take your hint

(and, may I say, mine?)—go in for a motor, enjoy its revivifying influence, find it a paying institution, and astonish the natives not only with their art and skill, but also in the way they come and the way they go.

Yours truly,

T. J. WEST,

Burgh-by-Sands, Manager, "Modern Marvel" Co., Ltd.  
August 28th, 1899. (of Edinburgh).

## THE MOTOR-CAR SHOW AT DOVER.

As already announced, the Mayor of Dover, Sir W. H. Crundall, J.P., is making arrangements for a three days show of automobiles to be held from Tuesday, the 19th, to Thursday, the 21st inst., simultaneously with the meeting of the British Association then taking place.

The show will be held on the Athletic Ground of Dover, which is well adapted for such purpose, possessing a hard track with firm foundation, capable of carrying the very heaviest class of vehicle. It is about  $2\frac{3}{4}$  laps to the mile, and is slightly banked. The exhibition will comprise—(a) exhibition of stationary motor-vehicles, (b) motor-vehicles running on the track, (c) competitions, races, etc. Cover will be provided for those exhibits which require it.

The following gentlemen will act as a judging committee: Mr. W. Worby Beaumont, Professor C. Vernon Boys, Mr. H. Graham Harris, Major Holden, R.A., Sir W. H. Preece, Mr. B. Boverton Redwood, Professor H. S. Hele-Shaw, and Mr. James Swinburne.

Prizes and certificates will be awarded for—(1) Practical running and general control of automobiles: Class (a), best motor-vehicle irrespective of body under  $1\frac{1}{2}$  tons unladen; Class (b), best motor-vehicle irrespective of body under 2 tons unladen; Class (c), best motor-vehicle irrespective of body under 3 tons unladen. (2) Utility of vans and other automotors. (3) Economy of fuel consumption, combined with general efficiency. (4) Elegance of design and workmanship of body of car. (5) Novelty of purpose and design. (6) Excellence of parts applicable to use with automobiles. (7) Designs of special automobiles or parts thereof, represented by drawings and descriptions.

The prize fund has been started with a grant of £100 by the local executive committee of the British Association Dover meeting; to this will be added one-third of the gross gate receipts, without deduction of any kind. Certificates will also be awarded with prizes, and for all commended exhibits. Competitions will also be organized and prizes offered to owners or drivers for tricycle, bicycle and obstacle races, etc. The exhibition has, we are informed, been certified by the Board of Trade to be an International Exhibition, under the provisions of sections 39 and 57 of the Patent Designs and Trade Marks Act, 1883.

THE BRITISH MOTOR COUPÉ CO., of Euston Road, N.W., received from Germany on Wednesday a German Daimler motor *chairs-a-banc*, having seating accommodation for no less than twenty persons. The car, which is the largest of its type in this country, is fitted with a two-cylinder motor, giving 10 b.h.p.; it has four forward speeds and one reverse motion.

A RACE MEETING of the Motor-Car Club will be held at the Crystal Palace track on Wednesday, the 13th inst., commencing at 4.30, when some very interesting competitions will take place. Among the various events are:—One mile handicap, two mile handicap, five mile championship of the Motor-Car Club, and also a race for roadster machines. In this race Messrs. Edge, Jarrott and Wridgway will be barred, although they have entered for all the other contests. Applications for entry forms should immediately be made to the Honorary Secretary at 40 Holborn Viaduct, E.C., as the entries close on Friday next, the 8th inst.

## JOTTINGS BY A WORLDLING.

COUNT TALLEYRAND VON SIERSTORPFF has at last definitely formed the Automobile Club of Germany. He is, of course, on the committee himself, and among his *confreres* are Princes Hohenlohe and Fürstenberg and Count Ratibor. The Duke of Ratibor is president, and the Hereditary Prince Philip Ernest of Hohenlohe and Count Schönborn the vice-presidents. I am rather surprised that Count Voss, the lawn tennis champion of Germany, is not a member of the committee, as this young officer, who is the Chamberlain of the Grand Duchess of Mecklenburg-Schwerin, is one of the most enthusiastic "chauffeurs" on the Continent. He drives with great judgment, although it seemed to me that he was a little too reckless on the Riviera last winter—not quite so bad as Prince Orloff, perhaps, but bad enough. If I remember rightly, he won one of the races organized by the Nice Club on his Panhard-Levassor car—from Nice to Castellane, I think it was. He has recently bought another carriage of the same make, which he drove from Paris to his home in Schwerin, making good times when the roads and police allowed it.

TALKING of the police, the Automobile Club of Switzerland are having an amusing passage of arms with the Mayor of Versoix, a small township of no importance, near Geneva. The worthy mayor has issued an edict that any one driving through the place at a pace greater than that of a man walking will be fined five francs! M. Têrond, one of the vice-presidents of the Club, in answer said that it was hardly worth while discussing the Mayor's action, but he would like to point out that in Geneva, Paris, London, and Brussels the police allowed at least the pace of a trotting horse. "But," he added, "it would appear that the traffic in the streets of Versoix is of greater importance than in these hamlets!"

THE Swiss Club, the head-quarters of which are in the charming Parc des Eaux Vives at Geneva, was founded at the end of last year, *duce et auspice* M. Ernest Cuénod, the most cosmopolitan of all motor-car enthusiasts. The Club is a complete success, and I would advise anybody who is likely to take his car to Switzerland to put his name down for election as a foreign member. The subscription is nominal, only a few francs, and a member of any recognised English club would have no difficulty in finding a proposer and seconder.

MONSIEUR CUÉNOD, whom I referred to above, often comes to England. He is a member of our Automobile Club, and speaks English like an Englishman. He lives in Paris the greater of the year, but he has a delightful house on the Lake of Geneva, which he reaches in two days on his car, although it is so many hundreds of miles away. He is a great believer in the Georges Richard car; I believe, indeed, he is going to join the board of the new company. He has himself invented a safety brake, to be used only in emergencies, as it acts so powerfully on the ground that in stopping the car "dead," it might throw the passenger out. It is very effective, and is being fitted to many racing cars; it can be used also as a jack to lift the back wheels from the ground.

MONSIEUR CUÉNOD was very kind to me when I was driving through Geneva in the spring. As soon as I was introduced to him he proposed me for the Club, and, with Prince Bibesco as seconder, I was soon elected. He was also kind enough to ask me out to his château at Rolles for lunch. A delightful day!—a splendid run out from the Métropole, M. Cuénod and Prince Bibesco on motor-cycles, M. Panchand in a Mors car for a little way, and myself; a glass of absinthe at the Tête de Nègre hostelry in the village; a delightful *déjeuner* at M. Cuénod's; a visit to a new house he was buying further up the lake; and then back into Geneva after tea.

## MIDLAND MOTOR NOTES.

By "HERCULES."

### The Motor-Tricycle Races at Birmingham.

THE races at Birmingham on Wednesday last week, in addition to providing the public with an excellent opportunity of seeing what really can be done with motors, demonstrated how vastly more interesting a race between motor-tricycles really is than the long-distance races between cyclists. There is practically little difference between shorter races, but the cycle races over longer distances, as everyone knows, are more or less uninteresting, riders playing a "waiting game," and reserving themselves for a rush at the close. How often have the spectators grumbled at the "crawls" which have been the chief feature during the greater part of the time occupied by a cycle race. In races between motor-tricycles there is nothing of this kind. There is no necessity to "conserve" the driving force for a big effort at the close; the pace can be maintained from start to finish. The terrific speed at which the machines travelled throughout the long-distance races and the ease with which they could be controlled by the riders excited the keenest interest in the minds of the spectators, and this interest never flagged until the race was ended and the honours won. There is no doubt that motor racing in England will become exceedingly popular.

### More Races Projected.

STIMULATED by the success of the motor-race meeting at Aston last week, the directors of *Sport and Play* will probably hold another one on a more elaborate scale some time during October.

### Racing Tracks for Motor-Tricycles.

MANY of the present tracks, however admirably adapted for cycle races, will not be so suitable for motors. They are not sufficiently "banked" for the high speeds at which motor-tricycles can be run, nor are they wide enough to allow the competitors room to pass each other. But such tracks as the Aston one, which is splendidly banked, and that at the Crystal Palace leave little or nothing to be desired.

### Motor-Tricycle Tires.

THAT there is still room for improvement in the pneumatic tires used on motor-tricycles was evidenced by the fact that one or two went wrong during the races at Aston last week. There must be an element of danger in a tire giving way with the machine flying along at a rate approaching forty miles per hour. It is satisfactory to know that the question is engaging the attention of experts in tire construction, and it may confidently be anticipated that their cogitations will result in the production of a tire which will meet all requirements.

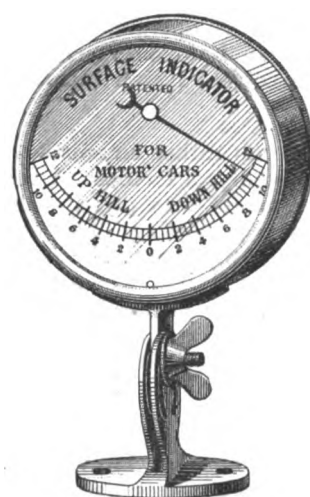
### Motor Tricycle Races and the Public.

THE growing popularity of motor-machines is shown by the importance which the daily papers attached to Wednesday's races. Lengthy reports were given, and the racing was freely commented upon. There cannot be any doubt that the races created a very favourable impression on all who saw them. Many were "disillusionised." Some people have an idea that it is impossible for a motor to run for a whole hour without a breakdown of some sort. This illusion was dispelled, for the most convincing proof was given that motor-tricycles can be driven at top speed for several hours without the slightest mishap occurring. The machines were before the eyes of the spectators the whole of the time, so it was impossible for anything to go wrong without their cognisance; and there can be no better way of demonstrating the

capabilities of a machine than the severe tests those went through last week with such excellent results. An hour's run on a track, before the critical gaze of thousands of spectators, will give greater confidence in motors than a two or three hundred miles race on the road, for "seeing is believing," to use a common phrase.

## A USEFUL SURFACE INDICATOR FOR MOTOR-VEHICLES.

IT is a very difficult matter to know when a motor-car is travelling upon a level surface, going up or down imperceptible inclines, as likewise the gradients of up or down steep hills. With a view of removing the difficulty,



the United Motor Industries, of 3 Rue Meyerbeer, Paris, has lately introduced a useful little device to indicate the variations of the surface at a glance, and so guide the driver as to when to change his speed gear according to the ground driven over, and assist in obtaining proper power from the motor in comparison with the surface over which one is travelling. The instrument indicates from 1 to 100; thus, suppose one is going up a hill 1 in 8 or 1 in 12, the surface indicator will point to either 8 or 12.

In use, the indicator is placed on the front board before the driver. After having obtained the level, so that the needle is pointing in the centre on 0, by turning the adjustable point upwards or in the opposite direction, the apparatus is screwed to the front board. It is essential that the motor-car be standing on the level itself previous to fixing the instrument in its proper place. In order that the needle should point to 0, it is necessary to tap sharply with the forefinger on the top, as the thick liquid over the face—necessary against vibrations—sometimes stops the needle from revolving, especially at starting; therefore a certain amount of vibration or tapping is necessary to ensure the proper working of the needle. An occasional tap on the top will cause the needle to indicate the exact gradient. We understand that these gradient indicators are largely used by automobilists in France.

MR. C. VERNON PUGH (managing director Rudge-Whitworth, Limited), in company with Messrs. Lanchester Brothers, rode a Lanchester motor-car in the Birmingham cyclists' parade on Friday last week.

MR. FRANK F. WELLINGTON, 36 St. George's Square, Regent's Park, N.W., is issuing a monthly "Motor-Car Register" of cars and sundries for sale, a copy of No. 2 of which he has sent us.

THE Albert Eadie Chain Co., of Redditch, have just introduced a  $1\frac{1}{2}$ -in. pitch twin-roller chain for motor-cars. A sample of the chain has been submitted to the engineering department of Mason's University College, Birmingham, and the report of the test states that the breaking load of the chain was found to be 4,614 lb.

THE *Electrical World* of New York announces that the Lanchester Motor Company has been formed at Trenton, N.J., with a capital of 5,000,000 dols. (£1,000,000). The incorporators are Percy C. Hamilton, Pittsburg; George S. Stidwell, T. Reginald Horley, and Byron Traver, New York; and Joseph V. Clark, Jersey City. The purpose of the Company is to control the American patents of Mr. Frederick William Lanchester, of Birmingham, England.

## SCOTTISH NOTES.

**The Autumn Tour.**

NATURALLY the decision of the Automobile Club of Great Britain to postpone their visit to the land of "the mountains and the flood" for another year has caused great disappointment among Scottish autocarists. The decision to postpone their visit north for another year is to be regretted, for it was anticipated that the peregrination through the leading Scottish towns of a large number of "chauffeurs," accompanied, as it would naturally have been, with a great fanfare at the hands of the daily press, would have given a fillip to the movement in this "land o' cakes." I understand that an effort will shortly be made to organize a brief tour of Scotch automobilists, probably toward the end of the present month, and if all who are interested in the advancement of automobilism in the North will co-operate, quite an imposing turn out of motor-carriages can, I am sure, be made, and will undoubtedly prove a useful object lesson in many places.

**An Apparent Anomaly.**

IT struck me as rather an anomaly, though undoubtedly a forecast of the future, to see motor-cars plying with fares at a horse race meeting. This was on the occasion of my visit to Hamilton last week, whither I had wended my way to see if there was anything fresh to chronicle in the motor-car world. The Saturday on which I happened to visit the ancient town was the second day of the Hamilton Park Race Company's autumn meeting, and, as I have indicated above, one could not help being struck when one saw the horseless carriage make its appearance, and, what is more, being patronized by a crowd of "horsey" individuals. The cars moved quietly along among the horse-drawn traps, and appeared to cause little or no trouble to our equine friends.

**Motors and Barnum.**

It is now a perfectly common sight in many parts of Scotland to witness motor-vehicles at work wherever large gatherings of people take place. At athletic sports, races, exhibitions, shows, or the like the motor-car is invariably in evidence, and without exception is well patronised, distinctly indicating the growth of public appreciation and favour. The "greatest show on earth" visited Motherwell on Wednesday of this week, and as the site selected by Barnum and Bailey's mammoth concern was at a considerable distance from the station, I was pleased to note that the local hiring company had seen in this another fine opportunity for reaping a harvest. Quite a large fleet of cars was put on the road, and might be seen all day running with crowds of country visitors from all the outlying districts, who had adopted the most novel and speedy method of reaching the pitch of the monster camp. The speed at which the cars ran enabled them to put in about two journeys to the horse-drawn vehicles' one, with a corresponding increase in the bringing of grist to the mill.

**Glasgow Trades Holiday.**

SATURDAY last was a Glasgow Trades Holiday, and thousands of the hard-working sons of toil were released from the cares of bread-earning. Not the least popular method, as on previous occasions, of putting in a day's enjoyment was that to be obtained by means of an automobile run, and on enquiry at the hiring depôt at Hamilton I found that every available car was called into requisition to meet the demands of the excursionists. The Glasgow stone carvers, among others, had their annual "beanfeast" on that day, and, taking train from Glasgow to Hamilton, on arrival at the ducal town they boarded several horseless carriages, and were

conveyed to Lanark and the Falls of Clyde. The road down Clydeside is, as is well known, one of the finest in Scotland both in point of scenery and surface. The Edinburgh Autocar Co., too, were very busy, their fleet of cars being also busily employed conveying crowds of passengers to the various places of interest round about "Auld Reekie." The Forth Bridge is naturally still very popular, and the route taken to reach this famous structure is an excellent one, and well calculated to show off the capabilities of the automobile to the best advantage.

**The Edinburgh Autocar Company.**

THE Edinburgh Autocar Company, Ltd., are rapidly getting their new premises into ship shape, and this concern has now increased facilities for the prompt execution of all orders entrusted to them, be it for the hire of a motor-carriage for an hour or a month, or for the transport of goods to any part of the kingdom.

"BROWN HEATHER."

THE Birmingham Criterion Engineering Co., Ltd., of Legge Street, Birmingham, is reported to be taking up the construction of motor-cars and tricycles.

At the last meeting of the Dover Town Council, the application for a licence for several motor-carriages during the visit of the British Association was granted.

THE New Courier Cycle Co., late Chilton Bros., of Alexandra Street, Wolverhampton, are, we hear, constructing a new motor-carrier tricycle fitted with a 2½-h.p. motor.

THE steam omnibuses for the projected public service between Oneglia and Garesio, Italy, referred to in a recent issue, are to be constructed by Messrs. De Dion & Bouton, of Puteaux, near Paris.

THE Automobile Club of America has been incorporated at Albany, N.Y. The articles of incorporation, which are brief, specify that the objects of the organization are "to maintain a social club devoted to the sport of automobilism and to its development throughout the country; to arrange for pleasure runs; and to encourage road contests of all kinds among owners of automobiles."

THE Barnsley and District Motor-Car Company, Limited, has just been registered with a capital of £5,000 in £100 shares, to carry on the business of carriers of passengers and goods, forwarding agents, warehousemen, proprietors of locomotives and other engines, motor-cars, carriages, omnibuses, vans, trucks, and other vehicles, whether propelled by electricity, steam, oil, gas, compressed air or otherwise.

DE DION motor-tricycles are now being made in the United States by the Waltham Manufacturing Co., of Waltham, Mass., which has secured the American rights in the popular De Dion motor. Mr. Skinner, of the Waltham Co., recently journeyed from Waltham, Mass., to New York City on one of these machines, covering the 251 miles between the two cities in seventeen hours, and at a total cost for transportation of 45 cents, namely, 40 cents for petrol and 5 cents for lubricating oil.

ALREADY a number of firms have intimated to the Automobile Club that they will probably exhibit in the automobile section of the 1900 Paris Exhibition. The list of firms includes the following:—Electrical Undertakings (Limited), New Grappler Pneumatic Tyre Company (Limited), Messrs. Simpson & Bodman, Headland's Patent Electric Storage Battery Company (Limited), Mossberg Roller Bearings (Limited), Roller Bearings Company (Limited), Britannia Motor Company, Liquid Fuel Engineering Company, Clipper Pneumatic Tyre Company (Limited), Motor-Carriage Supply Company (Limited), Motor Manufacturing Company (Limited), Vickers, Sons, & Maxim (Limited), Stirling's Motor Carriages (Limited), the Daimler Motor Company (Limited), and Messrs. Roots & Venables.

## THE MANAGEMENT OF ELECTRIC VEHICLES.\*



THE electric vehicle as at present constructed has for its driving mechanism a storage battery, one or more motors and a compound switch or controller. There are usually provided within easy access of the operator a controlling handle, a reversing handle, by which the direction of the vehicle can be reversed, the brake, bell, and switches for turning on the electric light, etc. The battery or source of energy is capable of giving forth a certain quantity of energy, and this quantity in its results varies according to the way in which it is taken out. For instance: If it is called for in large flushes of current the battery will respond, but the total available output of the battery will be less than if the current is taken out in more moderate amounts.

Storage batteries are commonly rated in ampere hours; that is to say, the discharge in amperes that will obtain for an hour represents the ampere hours. The discharge in amperes that will obtain during two hours multiplied by two represents the ampere-hour discharge, thus a cell of 100 ampere-hours capacity may give 30 amperes for three and one-third hours. If, however, an attempt is made to discharge it at 40 amperes it is possible that it may succeed in giving this current for only two hours, a total of 80 ampere hours and with a demand of 50 amperes, the total ampere hours would be less; therefore we may lay down as a fundamental rule that to make a long trip with an electric vehicle with a single charge of battery, heavy flushes of current are to be avoided.

A heavy flush of current at the motors may be induced in a number of ways; quick starts, especially on grades, conduce to these excessive charges from the battery; in short, any case where power is suddenly required of the motors. Attempts to start while the wheels are stopped by any obstacle, or bound by the brakes, are similarly detrimental, not only to the charge within the battery at the time, but the actual life of the battery itself, which is none too long at the best.

Another important point in the management of electric vehicles is the starting and stopping. The preliminary acceleration of full speed costs twice as much and often more power as the subsequent energy at the full speed thus once attained. The first application of the energy is to give the vehicle its momentum and to overcome the friction necessary to drive it at a certain speed. As soon as the momentum is obtained the motor drops to the suitable current that overcomes the friction which obtains. Therefore, if a long trip is to be made, the fewer starts and stops that are incurred the greater the economy of the charge and the further the vehicle will run on a given charge.

Another point in which the manager of an electric carriage must be careful is the use of the brake. The less the brake is used the better. It is very enticing to dash up to your destination at high speed and suddenly stop, but it is much more economical to shut off the current a little earlier and coast up to the stopping place. The brakes used consume heat; heat is energy, and the storage battery has to pay for it. Hence, use the brake as little as possible.

There is usually provided on the vehicle an instrument known as an ammeter, which measures the ampere discharge at the batteries. By consulting this instrument at any time the manager of the vehicle can tell whether or not he is calling for excessive current, and knowing the capacity of his batteries he will know what current is moderate, what is large and what is excessive.

If long mileage is to be obtained with a single charge it is necessary to run the motors at their most economical speed; that is to say, at their full capacity. The electric motor is very similar to other devices in respect to efficiency. At a light load its efficiency may be as low as 40 per cent.; that is to say, 40 per cent. of the electric energy supplied at

the motors appears as useful power at the wheels to drive the vehicle. When the motor is fully loaded the efficiency may rise to 80 or 85 per cent., and in the larger sizes of motors possibly more. Therefore, it follows that if the capacity of the storage battery is not exceeded, and a long run is desired to be made, the motor must be kept as nearly as possible at its full speed and power. On over loads the efficiency of the motor drops again. It is necessary to depart from the above conditions continually in driving a motor-vehicle, but they should be ideals to be aimed at. With poor management a motor-vehicle that should make a run of fifty miles may make less than thirty.

There is also provided on most motor-vehicles an instrument known as a voltmeter. This instrument measures the electrical pressure at which the batteries supply their amperes, and its indications form a very accurate criterion of the condition of the batteries. The latter should give two volts per cell. Thus, in a battery containing 40 cells the voltage should be 80. On a full new charge the voltage may rise as high as 2.2 volts per cell, thus making the initial starting voltage 88. When the cells are discharged as low as 1.8 volts per cell, they should be considered discharged, for although they are capable of supplying additional power at the reduced voltage, the power which must be put back in them to restore them to their original condition is vastly out of proportion to the power that can thus be taken from them.

A battery of cells should never be left in a discharged condition. If this is done an action which is known as sulphating occurs; that is say, the acid attacks the plates and forms a corrosive salt, which is detrimental to the cell, and moreover the process is detrimental to the plates. Sulphating can in a measure be removed by giving the cells a heavy overcharge, but the cells should never be allowed to reach such a condition. A sulphated cell is very deceptive with regard to the voltage indications. It is likely to indicate a much higher voltage at a state of almost complete discharge than a cell in good order would do.

It is never well to charge the battery inside the vehicle. Means are provided in many vehicles for doing this, but the offensive fumes which are given off in charging are very detrimental to any metal work with which they may come in contact. The cells should be removed when charged. If in handling the cells any of the fluid is spilt from them, especially when they are in a charged condition, it may be replaced with clean water. An attempt to use acid and water may result disastrously. It is far better to have the electrolyte a little too weak than a little too strong.

Storage batteries are in fact the horse of the vehicle, and every effort should be made to learn their frailties and to humour them in precisely the way the horse is humoured. Like the horse, if called upon to do an excessive amount of work they will do it uncomplainingly, but at the expense of their life. In this fact lies great danger in the management of storage batteries. They perform severe tasks without apparent exertion, but presently they will fail to respond altogether, the positive plates being possibly bent or short circuited and destroyed.

The items of expense in the running of a motor-vehicle are: Electricity for charging purposes, maintenance of positive plates of battery, general maintenance of the vehicle, storage, and minor charges. The first two of these items are the most severe, and easily amount to 75 per cent. of the total expense. For the rest of the vehicle it may be said that the maintenance compares with the maintenance of an ordinary carriage and harness.

For a two-seated vehicle weighing from 1,000 to 1,500 lb., capable of a maximum speed of fifteen miles an hour at a radius operation of forty miles, the total expense is about £5 per month, the vehicle being in service every day.

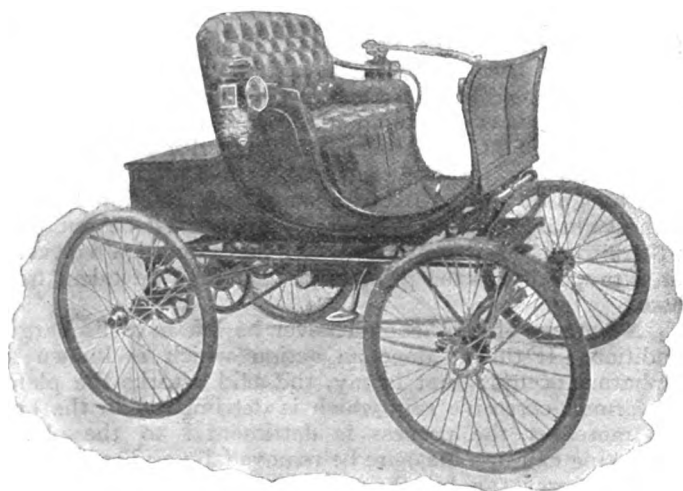
"DIE AUTOMOBILE" is the title of a new fortnightly journal which is about to be issued in Berlin.

\* By George T. Hanchett, in the New York *Automobile*.



## THE BROWN-WHITNEY STEAM CAR.

WE learn that Messrs. Brown Bros., Ltd., of Great Eastern Street, London, E.C., have obtained the sole control of the patents for the United Kingdom and the Colonies in the Whitney steam car, which attracted so much attention at the recent Exhibition at the Agricultural Hall. We have already given a description of this car (see *Motor-Car Journal*, June 2nd and 9th last), which is made both on the crank-driven principle (the engine driving directly on the rear axle) and as a chain-driven vehicle, the latter type being shown in the accompanying illustration. Amongst the principal advantages claimed for the Whitney car may be mentioned the following: The steam pressure is automatically



regulated. The steam is generated by gas produced from petrol, the control of which is automatic. Absolute freedom from vibration when the car is running or at rest, and entire absence of noise. The steering, speed and reverse motions are all governed by one handle. Invisible exhaust. Remarkable hill-climbing powers. Speed to forty miles an hour. Absence of wearing parts, the main axle being the only revolving part. The small quantity of water consumed per mile. Messrs. Brown Bros. inform us that they hope to be able to make deliveries of the new car about the end of November next.

A NEW motor-car is, we hear, in course of construction at a small cycle factory in Stockwell, S.W.

MESSRS. E. C. STEARNS & Co., of Syracuse, N.Y., have just completed the manufacture of an electric motor-vehicle. It has a 4-h.p. motor, operated by a storage battery of 44 cells which enables it to run thirty miles on ordinary roads. The steering gear, described as being very sensitive, requires but a slight touch to turn the wheels, and there is scarcely any jolting or vibration.

A NEW motor-carriage is being introduced by Mr. G. M. Holley, of Bradford, Pa. It is propelled by a single-cylinder petrol motor, cylinder  $3\frac{1}{2}$  by  $4\frac{1}{4}$  in. It has no poppet valves, and all its operations are said to be smooth and without jamming or noise of any kind. The operations of the Otto cycle are performed by a rotary valve made of tool steel with seat of cast iron. An electric make-and-break igniter is used. There is said to be no vibration from the engine when running in the carriage for the reason that the framework, carriage body and running gear are all bolted together, depending on large pneumatic tires for easy riding qualities. The complete weight of the car, with water and petrol for 100 miles, is 280 lb. It has a hill-climbing gear of five miles per hour, and a speed gear for a maximum of twenty-four miles per hour, so that by varying the speed of the motor any speed from two to twenty-four miles per hour can be obtained. The wheels are 26 in. in diameter, with  $2\frac{1}{2}$ -in. tires.

## MOTOR-CAR ACCIDENT.

MR. ROBERT WESTON, of Cedar House, Cowley Grove, near Harrow, was riding into town on Tuesday morning with his wife on a small motor-car when, near Paddington, an accident occurred. Mrs. Weston called her husband's attention to a new building in course of erection, and for the moment he incautiously neglected his steering apparatus, the result being that the motor-car crashed into the side of a pony-carriage, which was standing by the roadside, and knocked it over. Miss Hartshorne, who was sitting in the carriage, was thrown out and much bruised and cut, but the driver escaped unhurt. Mrs. Weston was jerked off the car by the shock, and fell with her right arm beneath her, breaking it. Both ladies were placed upon the motor-car and driven by Mr. Weston to a surgeon's, and afterwards they proceeded home.

## AN ABORTIVE MOTOR-CAR COMPANY.

THE creditors of G. H. Griffin, financier, Parliament Mansions, Victoria Street, Westminster, and late of the Hillock, Courtholt Road, Birmingham, met at the London Bankruptcy Court on the 28th ult. The receiving order was made on the petition of Messrs. White & Pike, printers, Birmingham. The debtor came over from New York in 1895, and became interested in the promotion of the English Motor and Road-Car Manufacturing Co., Ltd., which was to be formed to purchase the Anglo-French Motor-Car Co., of Birmingham (in liquidation). The attempt to float the company was unsuccessful. The accounts show a deficiency of £354, and the failure is attributed to liabilities in connection with the English Motor-Car Co. An offer to pay the debts by weekly instalments was refused, and the case was left in the hands of the Official Receiver, to be wound up in bankruptcy.

## TO BRAINTREE BY MOTOR-CAR.

SHORTLY after breakfast on Saturday morning last a party, comprising three foremen at the Royal Small Arms Factory and two friends, set out from Enfield for Braintree, Essex, aboard Mr. Seal's motor-car, with that gentleman as their pilot. The outward journey was made *via* Hoddesdon, Bishop's Stortford, and Dunmow. Arrived at Braintree dinner was partaken of, and a further run on to the village of Bocking was made. Having indulged to their hearts' content in the rural scenes to be found in that part of Essex, the party returned to Braintree, Dunmow, and then headed for Sawbridgeworth, which was found to be a great improvement so far as the condition of the roads was concerned, and home through Epping and Waltham Abbey, Enfield Lock being reached at about 9.45 without a single hitch on the part of the motor occurring. A little untoward circumstance happened, however, on the homeward journey which tended towards "a dampening of their spirits," *i.e.*, they were overtaken by a severe thunderstorm. This notwithstanding, the excursion was unanimously voted a most enjoyable one; indeed, more than one of the company declared that it "fairly eclipsed everything they had previously experienced in the form of a country ride."—*The Middlesex Gazette*.

## A MOTOR-CAR FRIGHT.

AT the Hove Police-Court last week Benjamin Burbridge, of Mighell Street, Brighton, was summoned for that he being the driver of a light locomotive on the highway did not, on the request of a person having charge of a restive horse, cause such light locomotive to stop and to remain stationary so long as was reasonably necessary, at Patcham, on August 8th. William Edward Marples, engineer, Hannington Villas, Preston Park, said that on August 8th, about 12.20 p.m., in company with Mr. Astley Metherell, he was riding on horseback on the London Road at Withean, proceeding towards Brighton. The defendant, who was driving a licensed passenger motor-car, was behind him, and when some fifty yards off witness turned and put up his hand, and called out "Slowly, slowly!" because his horse had commenced to buck. When defendant got close to him he requested him to stop, as his horse had got more restive. Defendant, however, did not stop or check his speed, and when he passed him turned round and laughed at him, as also did the passengers on the car. Defendant denied that complainant put up his hand to signal him to stop, and said he also warned him of the approach of the motor-car. Astley Metherell, 5 Port Hall Road, who was riding on horseback in company with the previous witness on the day in question, gave corroborative evidence, and also said that no warning of the approach of the motor-car was given by the defendant. Defendant said nothing occurred till he passed the complainant's horse, he having slowed up as he did so. He saw nothing to necessitate him to stop. He was not responsible for the passengers laughing at complainant. He had driven motor-cars and other locomotives in different parts of the country for over two years, and never had a complaint made against him before. The Bench fined the defendant 40s. including costs, or in default ten days imprisonment.

A NEW firm has just been formed in Milan, Italy, with a capital of £4,000, under the style of A. Caffaratti & Co., to deal in motor-cars and cycles.

# THE Motor-Car Journal.

Vol. I.]

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## COMMENTS.



MOTORISTS are naturally interested in the preservation of historic spots and beautiful places, and the suggestion that Stonehenge is in the market, like any ordinary suburban villa, will come as a shock to those who went thither on the occasion of the Automobile Club's Easter tour. Seeing that there are several public roads around the monument, few have realised, till now, that this memorial of Druidical

days was really a private possession. One thing is certain: something should be done to preserve the trilithons from the risk of injury to which they are now subject from the wanton chipping in which visitors sometimes indulge. There are none too many of such antiquarian scenes as that of Stonehenge that we can afford to lose what remain, and such areas should be regarded as objects of national concern. The motor-car affords facilities for touring to such places that have hitherto been denied to pleasure seekers, and motorists should be well to the front in any agitation to retain Stonehenge and all such resorts for the pleasure of the people.

### The Automobile Club's Autumn Tour.

WE have previously published the programme of the autumn tour of the Automobile Club, which commences on the 16th inst. Already a large number of members have notified their intention of joining the party, which will

include Mr. Hutchinson on a motor-tricycle, Mr. Geo. Iden on a Princess car, Mr. and Mrs. Lyons Sampson on a Benz car, Mr. and Mrs. Soames on a Daimler car, Mr. Stopes, Miss Stopes and Mr. Stopes, jun., on a Daimler car, Mr. Frank Butler on either a motor-tricycle or the Whitney steam car, Mr. H. Swindley, Mr. Crampton on a motor-tricycle, Mr. and Mrs. Edge on their Panhard car, Mr. and Mrs. Heatley on an English-Hurtu car, the Hon. C. S. Rolls on his Panhard car, Mr. C. Jarrott on a Panhard car, Mr. and Mrs. Fuller on a Daimler car, and Mr. C. Cordingley and party. Mr. and Mrs. Blount, Mr. Taylor, Mr. Barr and Mr. and Mrs. Johnson will accompany the party in the Club wagonette.

### In the Midlands.

DURING the past summer the British Motor Touring Company of Stechford has been making a series of experimental motor-wagonette runs around Birmingham. Next season it is proposed to institute a regular service to

places of interest, such as Warwick, Leamington, Kenilworth, Malvern, Stratford-on-Avon, etc. We understand that a dozen members of the county constabulary recently took a trip in the wagonette belonging to the Company, of which Mr. Morrison is the managing director, and—tell it with bated breath—made a pace of eighteen miles an hour. Wicked men; they should have locked each other up!

### Prejudice and Interest.

WRITING to the *Edinburgh Evening News*, "Justitia" says: "The recent decisions in the cases of alleged furious driving on the part of motor-cars call for some notice. The public should watch jealously that justice is done in this connection. The principal evidence was led by tramway inspectors and policemen, who are notoriously prejudiced. It is no secret that these motor-cars are making serious inroads on the tramway revenue in certain districts. This would not be so if they did not give the service the public desire and appreciate. Their success is a reproach to the dilatory methods alike of the tramway company and the Corporation; hence the readiness to prove an offence. No accident has yet taken place with the motor-cars, which is more than can be said for our slow-going, irregular tramway cars. Let me say that I am not concerned in any way with any motor-car company, but I am concerned, as a citizen, in seeing that the city gets the best service, and that without prejudice or injustice to those who have the enterprise to give it."

### Snapshots Wanted.

Now that touring days are drawing to an end, we shall be pleased to receive from readers reminiscences of their wanderings by motor-car during the past summer. Suggestions for tours of a week or fortnight duration, or for week-ends, will be particularly welcome and afford interesting reading, raising anticipations of glorious rides and delightful days next season. If these notes of travel are accompanied with snapshots of interesting spots in which the motor-car figures they will be even more welcome, and, where possible, will be given reproduction in our columns. Outlines of tours, with the names of places where petrol can be obtained and other details, will be valuable to all motorists, and *The Motor-Car Journal* hopes to be the means for the interchange of much useful information of the kind among those who take their holiday vacation on the motor-car.

### Motoring on the Continent.

IN view of the success which has attended the Hon. C. S. Rolls and the Hon. J. Scott Montagu, M.P. with their motor-cars in the Paris-Ostend race, it is probable that many other English automobilists will be induced to cross the Channel with their motor-vehicles. In this connection, Mr. C. Johnson, the Secretary of the Automobile Club, asks us to warn "chauffeurs" who may be taking their cars to France that if they ship them from Southampton to Havre on a Saturday night the vehicles will not be allowed to leave the vessel at Havre until the Monday morning, as the Customs officers whose duty it is to clear such goods are not at work on Sundays. Further, in no case can a heavy vehicle be taken off the steamer until the tide is sufficiently high to permit of the vessel coming alongside the quay, which sometimes involves a delay of six hours. Mr. Johnson, probably speaking from experience, also remarks that "before entrusting repairs to

any firm in France it is always as well to first obtain an estimate from them of the cost of the repairs." There is an excellent automobile firm at Havre where petrol may be obtained, motor-vehicles stored, and repairs effected, viz: Tourand & Co., 34 rue Dicquemare, Havre.

#### On Tyneside.

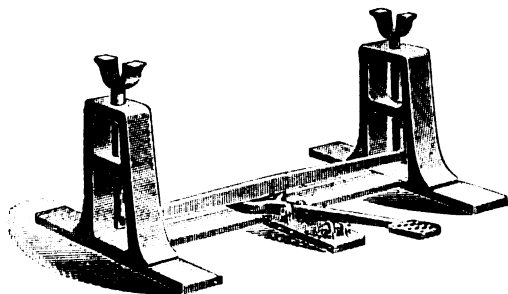
MR. BLACKLOCK, of the Tyne Motor-Car Co., and Mr. Turvey were the pioneers of motor-car services in the North, and from an interview with the former in a local paper it would appear that great developments are in contemplation. The Tyne Motor-Car Co. has an 8-h.p. car on order which will inaugurate a service to Byker. It is impossible for any of the cars to run at a greater rate than ten miles an hour, the average speed being about eight. Although the business is at present a private concern, it is about to be floated as a company; in fact, the capital is nearly all subscribed. Show-rooms will be opened at Newcastle, and cars will be let out on hire, while it is intended to ultimately undertake the building of cars as well.

#### Motor-Cars and Railways.

SOME of the members of the Dover Chamber of Commerce are evidently gifted with sarcastic tongues, for at the annual meeting of their association it has been suggested that an automobile service should be started in opposition to the railways that are supposed to exist for the convenience of the public who wish to get from London into Kent. Rather far-fetched as the idea may seem, it is a suggestion that will appear quite ordinary and very commonplace to Police-Constable Garner, of Stonehouse, who having hauled a Cheltenham motorist before the magistrates calmly told their worships that the defendant "was going like a train." Evidently Police-Constable Garner would be a useful witness in any inquiry with a view to utilising motor-cars as competitors to the wretched railway systems of the South of England.

#### A Stand for Motor-Tricycles.

WE briefly alluded in our issue of the 25th ult. to the new stand for motor-tricycles which has just been put on the market by the Ailsa Craig Machine Co., Ltd., of East Putney, S.W. We are now able to give an illustration of the stand, which is constructed of wrought iron and steel; it is simply placed below the rear axle and the



foot pedal pressed down, this causing the supports to rise and lift the rear part of the machine clear of the ground. The makers state that a motor-quadracycle fully equipped can be readily raised into position for testing repairs, etc., by means of the new device by a boy. The Ailsa Craig Co. are, we understand, also arranging to supply a stand of this kind adapted for use with motor-cars; the latter will be adjustable, both as regards height and width, and will lift and hold vehicles weighing up to 5 cwt.

#### Waiting.

THE London General Omnibus directors are watching the development of automobilism with interest, and now we learn that the directors of Messrs. McNamara & Co., Ltd., the great contractors for horses for the Post Office, have the matter of motor traction under consideration. The shareholders have been assured that when "the time came for taking active steps the Board would do so." Evidently these great horse-owning concerns are all waiting. Which will make the start?

#### The "Financial News" Again.

THE *Financial News*, whose editor delights in motor-caring on the roads and reviling motor-cars in his paper, has asserted that "the list of accidents has grown so lengthy as to prove very cold comfort to those holding shares in motor-car companies." And it is evidently with a view to chill them altogether that he allows paragraphs relating to accidents, or reported accidents, to appear so frequently without explanation or reason. Why is not every cab accident similarly chronicled, and equal prominence given to the dangers of horse-drawn vehicles? Proportionately, we should say the number of accidents to horse-drawn vehicles and to motor-cars is in favour of the latter; for while casualties to horse-drawn vehicles are of such common occurrence that only a small and insignificant minority are reported, every motor-car stoppage, upset, or accident is reported—and in many cases, magnified and exaggerated.

#### Motor-Cars for Bournemouth.

THE North is not alone in suggesting that motor-car services should be inaugurated in places where efficient tramways do not exist. Now a reader of the *Bournemouth Guardian* comes forward with a suggestion that motor-cars should be adopted on the Ashley and Poole roads instead of tram-cars, as has been proposed. A service of motor-cars from the Pembroke Hotel, Branksome, along both the roads mentioned to Poole would fill a public need, and the pertinent question is asked, Who is to start the Bournemouth, Branksome, Poole and Parkstone Motor-Car Co., Limited? We like the idea, but the title of any concern started for the purpose of serving the public must be shorter than that suggested.

#### More Motor-Car Works.

WE understand that Messrs. Walter C. Bersey & Co. have taken over some works at Willesden, N.W., and that in the course of about two months this firm will place on the market motor-carriages of a new type, propelled either by oil, steam or electricity. As Mr. Bersey has had considerable experience in motor-car work, we shall look forward to an inspection of his new vehicles with interest.

#### Motor Pacing and Cycle Record Breaking.

ON Friday last week Mr. F. R. Goodwin succeeded in establishing a new twelve-hour record for cycles on the road. The total distance covered by Goodwin in the twelve hours was 244 miles, beating E. Gould's tandem-paced 226½ miles, made on practically the same course. The wonderful achievement was in no small measure due to the pacing afforded him by motor-cars and motor-tricycles, assistance in this direction being given by Mr. S. F. Edge on his Panhard car, and such well-known motor-cyclists as C. G. Wridgway, L. Egerton, J. W. Stocks, MacCormack, and C. G. Garrard on tricycles and C. Jarrott, the latter being present on a new double-motored Bollée voiturette. No small amount of excitement was caused in Euston Road,

N.W., one day last week-end when the bulk of the pacing motor-machines left in procession the premises of the British Motor Coupé Co., where they had been stored.

**A "Lifu" Steam Tram.**

On another page will be found a brief account reproduced from the daily papers of a "motor-car" accident at Portsmouth. On enquiring into the matter we find that the vehicle is a steam tram-car built by the Liquid Fuel and Engineering Company, of East Cowes, Isle of Wight, on the lines of their well-known "Lifu" steam cars. The accident was due to one of the points on the line being in a defective condition. The authorities of the line knew of the point in question, but had omitted to acquaint the driver of the "Lifu" car thereof, with the result that the car was jerked off the line, as were also the two trailing cars. Altogether about 120 passengers were on the three cars. Fortunately the accident was attended, beyond the knocking down of a brick wall, with no serious result.

**More Motor-Tricycle Races at the Crystal Palace.**

As briefly mentioned in our last issue, a further motor-tricycle race meeting is to be held on the Crystal Palace track on Wednesday next, the 13th inst., under the auspices of the Motor-Car Club. We learn from Mr. Bailly that the entries are coming in in a very satisfactory manner. A start will be made at 5 p.m. The five mile race for the championship of the Motor-Car Club, with Messrs. Edge, Jarrott and Wridgway riding, is bound to be a very close and exciting one. Besides this race there will be one mile and two mile handicaps, and a five mile handicap for roadster machines, Messrs. Edge, Jarrott and Wridgway being barred. This ought to draw a large number of entries from users of machines not fast enough to compete with path-racing machines who would like to try the speed of their machines on the track. On the conclusion of the races there will be a club dinner for members of the Motor-Car Club and their friends.

**War Office Red Tape.**

THE ways of Government departments are generally dilatory, and when they have the merit of promptitude are not always to be commended from a common-sense point of view. Conspicuously among these departments the War Office is bound up with red tape, and an instance has occurred in connection with the autumn manoeuvres which illustrates the spirit of antiquity which still animates many in high position. Some officers at Aldershot wished to test the capability of the motor-vehicle and to give it a practical trial as an adjunct to military equipment. The experiment would have been interesting and might have proved valuable; but, less enterprising than the Post Office, the military authorities seem to have peremptorily declared against the automobile and its experimental introduction for military purposes. And thus do we keep abreast of Continental nations!

**Another English Daimler Car for Continental Races.**

WE met Mr. Pedley of the Daimler Motor Co., Ltd., on Wednesday, and found him not unnaturally elated at the success achieved by the Hon. J. Scott Montagu, M.P., in the Paris-Ostend race, particularly in view of the fact that the car was not in any way altered as regards the body for racing purposes. We understand that the Daimler Company has an order in hand for a special racing motor-vehicle for participation in the projected race from Paris to St. Petersburg. Mr. Pedley reports enquiries for motor-cars as coming forward briskly, and only a few minutes before we met him he had sold a vehicle at a premium to a Manchester

gentleman who intended driving the same North, starting from London yesterday (Thursday).

**A Motor-Cycling Tournament.**

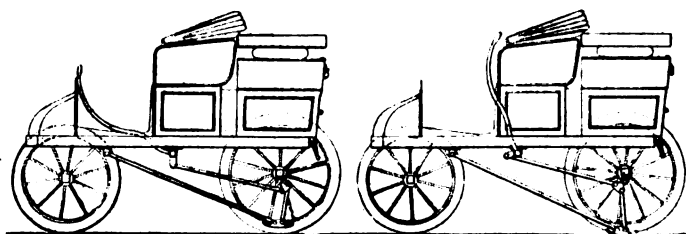
MESSRS. P. SOUVESTRE & Co., of Liverpool, are organizing a series of motor-cycle tournaments in different parts of great Britain. The entries already include those of the following well-known French motor-cyclists: Béconnais, Osmont, Vasseur, Loste-Dupuy, and Albert, who will leave Paris for England on the 30th inst. The following towns among others will be visited in the order named:—Cardiff, Birmingham, Liverpool, Leeds, Manchester, Newcastle, Edinburgh, Glasgow and London. Arrangements have been made for races on the cycle tracks in each of the towns named, the programme in all cases comprising a one mile international scratch race, a five mile ditto, and a ten mile ditto, prizes being offered for each event. Any English motor-cyclist who is anxious to compete against the Frenchmen in these races should communicate with Messrs. Souvestre.

**The Lanchester Motor in America.**

WE referred in our last issue to the formation of a company at Trenton, New Jersey, to control the American patents of Mr. F. W. Lanchester, of Birmingham. We now learn from the *St. Louis Age of Steel* that "a plant for the manufacture of the Lanchester oil motor, to employ about 600 skilled mechanics, is to be built in Pittsburg. This is the conclusion reached by the incorporators of the Lanchester Motor Company, which was organized a few days ago under the laws of New Jersey, with a capital of £1,000,000. The Company proposes to manufacture Lanchester oil motors, especially for the use of large freight trucks and street cars, though it has recently secured an option on all the oil motor patents in the United States, Canada and Mexico that are owned by the inventor, Mr. F. W. Lanchester, of Birmingham, England, who is a large stockholder in the new concern, and who is expected to visit Pittsburg within the next month."

**Cuénod's Emergency Brake.**

IN our last issue "A Worldling" referred to the emergency brake for motor-cars recently devised by M. E. Cuénod, president of the Swiss Automobile Club, and which is now being introduced by that gentlemen from his offices at 3 Rue Laffite, Paris. The device, of which we are able to give two illustrations herewith, is not intended to replace the ordinary brakes on a motor-car, but is an addition



BRAKE OUT OF OPERATION.

BRAKE IN OPERATION.

thereto, only to be used in cases of emergency. As will be seen, the brake consists of two iron shoes carried near the ground, one at each side, in the space between the rear wheels. These shoes are connected by suitable levers to and are controlled by a handle at the side of the driver. The brake shoes, as will be seen, act on the road and not on any part of the vehicle. It is described as being exceedingly powerful. In addition to acting as a brake the device can be used as a lifting-jack, and can also take the place of a "devil" or sprag.

### The Trans-American Automobile Tour Abandoned.

HARDLY had we gone to press with our last issue when news reached us that Mr. and Mrs. John D. Davis, the adventurous pair who undertook to cross the continent of America in a motor-carriage, and whose mishaps and tribulations have filled the columns of the newspapers of the United States for the past five or six weeks, have decided to abandon the experiment. They reached a point beyond Toledo, O., when fresh troubles occurred, although the machine had been overhauled at Cleveland, O. As the New York *Horseless Age* recently pointed out, at the rate at which they were travelling they could not have reached San Francisco in less than five months from the date of setting out!

### The Stanley Show.

ONCE again this old established exhibition will be held at the Agricultural Hall, Islington, and additional interest will be added by a small show of motor-vehicles. The number, inclusive of all sorts of motor-cycles, will not exceed forty, and these, we understand, will be specially displayed in the Minor Hall. Otherwise the sole privilege of exhibiting motor-vehicles at the Agricultural Hall is in the hands of the proprietors of this Journal, Messrs. Cordingley & Co.

### The Post Office and Motor-Vans.

IN the Blue Book issued on Tuesday by the Postmaster-General, reference is made to the attention now being given by the Postal authorities to the question of the employment of motor-vans for the conveyance of mails, both in London and the provinces. So far, no permanent services of the kind have been established, and the experiments are to be continued. We understand that the attempts already made in this direction have been from Reading to Newbury, Leith to Edinburgh, Paddington to Mount Pleasant, E.C., and from St. Martin's-le-Grand to Redhill. Naturally, the Duke of Norfolk will be extremely cautious before finally deciding on the adoption, or rejection, of motor-vans; for the initial expense of such a service would be very great, and he has to regard himself as the custodian of the Public Purse. There is little doubt, however, that as our manufacturers devote themselves with increased zeal to the designing of motor-vans for heavy traffic and for delivery purposes, the prospects of the employment of automobilism in the postal service will increase, until it eventually becomes *un fait accompli*.

### A Portable Motor-Car Store House.

IT is not every automobilist who has stabling accommodation for his motor-car and probably there are many would-be "chauffeurs" who are deterred from investing in an automobile owing to lack of similar facilities. Messrs. F. Jackson & Co., Ltd., 77 Oxford street, London, W., in introducing a portable motor-car storage house, have therefore filled a want. The storage house we had an opportunity of inspecting on Wednesday is adapted to receive a Benz car; it is constructed of wood, the inside being lined with felt to render it waterproof. The house, which has a ridge roof and two large outwardly-opening doors at the front, measures about 8 ft. 9 in. in length by 6 ft. in width and 7 ft. 9 in. extreme height. The house can be readily taken to pieces, the various parts being held together by bolts, while to facilitate the entry of the car two folding "ramps" are provided. Another feature of the new house is the provision of a work-bench and shelves on which accessories may be stored, small repairs effected, etc. As we have mentioned, the house we inspected was adapted to receive a Benz car, but we understand that Messrs. Jackson are arranging to also construct portable houses of various sizes suitable for any type of motor-vehicle.

### New Works for the Construction of "Lifu" Steam Vehicles.

IN our last issue we referred to the visit of the members of the Institution of Junior Engineers to the works at East Cowes, Isle of Wight, of the Liquid Fuel and Engineering Co., and stated that the capacity of these works was thirty "Lifu" steam wagons and twenty launches annually. The demand for automobiles has, however, recently so largely increased that additional facilities have become imperative. The Company has for some time past been looking around for suitable premises, and we are now able to definitely announce that the extensive works and plant at Adderley Park, Birmingham, recently occupied by the Starley Bros. and Westwood Manufacturing Co., Ltd., have been acquired by the Liquid Fuel Co. The extent of the new works may be gauged from the fact that they cover an area of about 3½ acres, the dimensions of the main shop being no less than 300 ft. by 209 ft. We understand that the existing plant is admirably adapted for the purpose of manufacturing the various parts of steam vehicles, and that operations will be commenced at Birmingham in from six to eight weeks time.

### The Werner Motor-Bicycle.

WE learn that the Motor Manufacturing Company, Ltd., are about to reintroduce the "Werner" motor-bicycle on the market. Several modifications are being incorporated into the new machine, notably the adoption of electrical ignition in place of the incandescent tube formerly used; the motor, too, will also, we understand, be of a slightly increased capacity.

### English-Built Racing Motor-Cars for the Continent.

IN another column we refer to the fact that a special racing automobile intended for the projected Paris-St. Petersburg course and other important races on the Continent is to be built by the Daimler Motor Co. We learn that an informal committee of the Automobile Club has been formed to advise as to the details of this car, which is to be fitted with a twin Daimler motor. Should the car, when completed, answer expectations, it is contemplated to forward a challenge to race for the International Automobile Cup recently instituted by Mr. Gordon Bennett and lodged by him with the French Automobile Club.

### Motor-Cars in Australia.

MR. E. W. RUDD, head of a large cycle importing house in Melbourne, has just returned home after a business tour in Europe, in the course of which he paid a visit to the recent motor-car exhibition in Paris. One result of his trip is to be found in an announcement made by an Australian contemporary that Mr. Rudd has four motor-cars of the latest design already on the way out to Melbourne. No information is so far available as to the type of car which Mr. Rudd is introducing into the Antipodes.

### Motor-Car Construction in Canada.

A STRONG syndicate of capitalists in Toronto has just acquired four of the largest cycle manufacturing concerns in Canada—viz., the Massey-Harris Co., Toronto; H. A. Lozier & Co., Toronto Junction; the Goold Bicycle Co., Brantford; and the Welland-Vale Co., St. Catharines. These concerns, which have a productive capacity of 30,000 bicycles per year, are to be amalgamated and extended. It is also the intention of the new Company to manufacture automobiles. In the course of an interview one of the leading members of the syndicate is reported to have stated: "We have been following this line of the business up in order to be able to turn out a good article, and we are of the opinion that a good bicycle manufacturing firm can, with a little additional



plant, turn out a good automobile. At present it costs from £300 to £400 to buy an electric motor-cycle or automobile; but it is thought that our Company will be able to put these popular machines on the market much cheaper, so that they will come within the reach of men of moderate means. "We will probably make them smaller, and therefore less unwieldy than those at present in use." It remains to be seen whether the new Company will carry out the programme above outlined.

#### The Dover Show.

WE learn from Mr. F. E. Beeton, the secretary of the forthcoming motor-car exhibition at Dover, that the show promises to be very successful. Among the firms who have taken space may be mentioned the Liquid Fuel

Engineering Co., the Steam Carriage and Wagon Co., the Clarkson & Capel Steam Car Syndicate, the Automobile Association, Ltd., Messrs. Gibbons Bros., the British Motor-Coupé Co., Messrs. Shippey Bros., Messrs. Mackenzie & Co., Messrs. Hewetsons, Ltd., Messrs. G. Harding & Co. and the National Motor-Carriage Syndicate (Joel), besides private owners, of which several have taken space. Stands have also been taken for T. Messenger's boiler, C. T. Headech's motor and the Buffoline noiseless gear, while two, if not three, French manufacturers will exhibit. Races will be run on Wednesday certainly and probably on the Tuesday and Thursday, in which, among others, Messrs. Edge, Jarrott and Wridgway have promised to take part.

#### Motor-Car Touring in the Eastern Counties.

WE had a visit from Mr. Chas. H. E. Rush, of the London Autocar Co., on Monday, when he kindly gave us an interesting resumé of his recent trip in the Eastern Counties on a Hurtu car, in company with Mr. Giles, of

King's Lynn. Mr. Rush left London on Monday, the 21st ult., the first day's journey being brought to rather a sudden termination at Hatfield Peveril. As details of the accident which occurred at this place were given by Mr. Rush in his letter published in our issue of the 25th ult. it is unnecessary for us to refer to it again, except to state that a stop was made at Hatfield Peveril until Wednesday morning, to allow Mr. Giles to recover from the shock and to permit of the necessary repairs being made to the car. It is remarkable that although the car was brought to a sudden stoppage and turned right over, so little damage was done to the vehicle, the repair bill amounting to only thirty-five shillings. The repairs completed, Mr. Rush and his friend set out on the car on the morning of Wednesday, the 23rd ult., for King's Lynn, which place was duly reached after an enjoyable run. The following day, Thursday, was devoted to a trip to Wisbech and back, and Friday was spent quietly in King's Lynn. On the Saturday a start was made for Yarmouth, where the week-end was spent. So well did the car behave on this journey that Mr. Rush informs us he made a continuous run of 68 miles without dismounting from the seat. Excellent as was this performance, it was eclipsed on the following Monday, when Mr. Rush returned from Yarmouth to London, *via* Norwich, the distance—142 miles—being covered in 9½ hours, equal to an average of 15 miles per hour. On some of the good roads in the neighbourhood of Newmarket some very fast travelling was recorded, thirteen miles being covered in thirty-five minutes. Mr. Rush has returned home with a very high opinion of the Hurtu car for touring purposes. He reports having had no trouble whatever with the pneumatic tires, nor any difficulty in procuring petrol, etc., during the course of his tour.

THE Mobile Co. of America, who are building a factory at North Tarrytown, N.Y., for the manufacture of Stanley steam cars, are pushing the erection of their plant with all possible energy, and expect to be turning out carriages this autumn.

## JOTTINGS BY A WORLDLING.



I SEE that a correspondent in a letter which appeared in last week's *Motor-Car Journal* asks for advice as to the dressing of his "man." I think he will find the following satisfactory: Yachting cap of grey cloth with a band of blue, black, green or whatever his livery colour is; single-breasted, square-cut coat of grey cloth with a "stand-up" coloured velvet collar bordered with white silk cord; plaited epaulettes—livery colour; breast pocket with V-shaped flap bordered as the collar, with a small silver livery button matching the larger ones which fasten the coat; and side pockets without flaps. The trousers should have a stripe down them of the same material as that used for the hat band. My own mechanician is thus appareled.

It is with great personal sorrow that I have to record the death "ere his prime" of Ernest Renshaw, who was so long famous for his lawn-tennis playing. Latterly he had taken keenly to automobilism; hardly a day passed that was not in part spent by him in driving one or other of his cars. He joined the Automobile Club about two months ago. I knew him, as indeed did many people, as a kind friend, with a quiet, reserved nature: one who did much good, and always tried to hide the doing of it. I feel that all good "chauffeurs" will grieve with me at the loss of one of the best and most enthusiastic of our young band.

WE can ill afford to lose such a man as this: by "we" I mean all those who are trying to establish automobilism on a sporting basis in England. The fact of Ernest Renshaw's saying that driving a motor-car was "rare sport," made many men turn their attention to it. Among these was another great lawn-tennis player, the present champion, Mr. "Reggie" Doherty, who has bought a De Dion tricycle, which he learned to ride round the track at the Queen's Club, under Renshaw's tuition. Another member, Mr. West, who married that popular artiste, Miss Mimi St. Cyr, did likewise; and so the snowball was started.

AT the time of his death, poor Renshaw had two cars—an electric phaeton built by that able young engineer, Mr. Eric Clift, and a petrol Victoria by the International Motor-Car Company. The former was seen for a few days at the Agricultural Hall Show, where it had a great success; the latter, which has since proved a good car, began its career ignominiously with the firing of a wheel on the road to Ranelagh on a Saturday afternoon in the middle of the season: so that not only the *profanum vulgus* but all London's "dandies and beauties" jeered as they passed by. I happened to arrive on the scene just as the Duke and Duchess of York drove past in a hansom; they more than smiled.

THE other day I persuaded a friend to buy a motor-tricycle. He got on splendidly with his first lesson—so well, indeed, that he was able to ride home across the park. But imagine my astonishment when at the break of the following day I got this wire from him: "Have left mixture on all night. Does it matter?"

JUST as we go to press we learn that the Hon. J. Scott Montagu, M.P., has entered for the Paris-Boulogne race, which is to take place on the 17th inst. Mr. Montagu will drive his twin-Daimler car, but is, we understand, having a special racing-body constructed for the coming race.

## The Paris-Ostend Race.

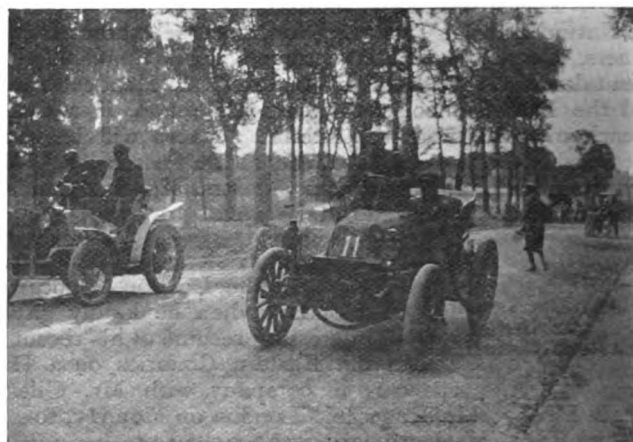
BY reason of the entries of the Hon. John Scott Montagu, M.P., and the Hon. C. S. Rolls, both of whom were competing for the first time in a French automobile race, the "course Paris-Ostend" was of special interest to all British automobilists, and I can readily picture how eagerly each phase of the race was followed and with what anxiety the result was awaited at Whitehall Court and other centres of automobilism. Here in Paris, ever since we English motor-men had learned that the Old Country would be represented, the possibilities of victory had been discussed again and again, and the unanimous opinion was that while the prospects of a win were of the best, win or lose we could

between the racer and the stylish wagonette so well known in London.

As the conditions ruling the tourist class only stipulated that each car should carry four persons, Mr. Rolls had wisely decided to discard his wagonette body and utilise instead a small aluminium two-seated body, the additional passengers being carried on a basket at the back of the car. Other competitors had followed the same plan, but Mr. Montagu ran his car exactly as he uses it for touring purposes, that is to say, fitted with a heavy six-seated body, and this undoubtedly severely handicapped him. His car is a production of the Daimler Company, and is throughout of excellent



MOTOR-CYCLES LINED UP JUST BEFORE START.



BROC'S MORS CAR (NO. 11) AND GEORGES' PEUGEOT CAR (NO. 10).



LEMAITRE (NO. 1), GIRARDOT (NO. 2), AND CHARRON (NO. 3) PREPARING TO START.



LEMAITRE'S PEUGEOT CAR.

not be more worthily represented. Two of our most enthusiastic and most accomplished "chauffeurs," driving respectively a magnificent English Daimler car, and an equally good French automobile! What more could one desire? Of the two representatives, Mr. Rolls was the first to arrive in Paris. Accompanied by Messrs. Bird and Millership he came over *via* Southampton and Havre, incidentally putting in some very fast times *en route*. Of course, he drove his well-known 8-n.h.p. Panhard, but comparatively few English autocarists would have recognised the car under racing canvas. Every atom of superfluous matter had been dispensed with, and one could see little resemblance

construction. It is fitted with two 4-n.h.p. motors, which jointly develop 12 h.p. on the brake. Ready for the road the vehicle weighs about 24 cwt., aluminium having been employed wherever possible. A feature of the construction is the possibility of feeding the burners by pressure or by gravity, as may be desired, the engine itself being of the gravity-feed type. Mr. Montagu was delayed at Havre, the Customs declining to clear the car on a Sunday, but eventually he reached Paris on the evening preceding the race. He was accompanied by Mr. Claude Johnson, a friend, Mr. Mayer, and an engineer, and also carried a quantity of luggage. Despite this heavy load he made some fast times,

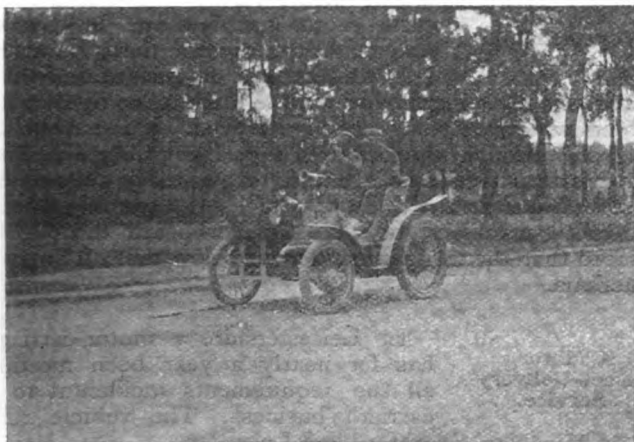
the best being an average of 33 miles per hour over a run of 9 kilometres. On the morning of the race Mr. Rolls and his three passengers, viz., Messrs. Johnson, Staplee Firth, and Bird, went out to St. Germain at a very early hour, but it was not until nearly 8 o'clock that Mr. Montagu's car left the stable to traverse the 23 kilometres of truly villainous road which lies between Paris and the departure "contrôle" at St. Germain. I accompanied the car, and after a slow and weary journey we reached the scene of departure a short half-hour before the signal was given, only to find that *en route* a water-circulation tube, repaired at a Parisian dépôt the previous evening, had again given way. Was there ever such terrible luck? Our hopes dashed to the ground even before the race was started! A hurried disconnection of the tube, a frantic search for a workshop ultimately crowned with success, a trying explication of our requirements in imperfect French, a maddening wait while the work was carried out, and then back to the car to effect the attachment.

This final operation and the refilling of the water tank took considerable time to complete, and when at last the car

any rate one English company can turn out cars capable of holding their own with Continental productions. The official times were: 1, Creux, 5 h. 14 m.; 2, Maréchal, 5 h. 33 m.; 3, Rolls, 5 h. 35 m.; 4, Charles, 6 h. 38 m.; 5, Montagu, 7 h. 17 m. Of the other two competitors, the B. G. S. (electric) broke a spring after covering 56 kil., and although eventually continuing the journey, arrived too late for classification. The other car, that of M. Charbonnier, met with an accident at Achères, and abandoned.

The motor-cycles and the voituresses finished as follows:—Cycle: Ollier, in 3 h. 54 m.; Seignol, in 4 h. 19 m.; Jeanbert, in 4 h. 21 m. 38 s.; Courmont, in 4 h. 25 m.; Cormier, in 4 h. 51 m.; Echard, in 4 h. 55 m.; Mary, in 6 h. 15 m.; Riguelle, in 7 h. 4 m.; Caldas, in 8 h. 25 m.

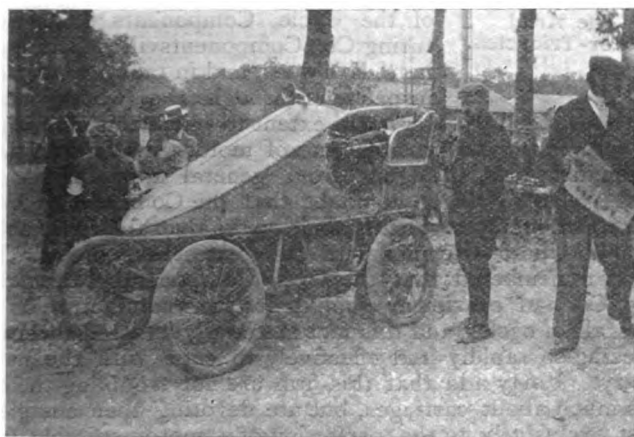
Voituresses: Théry, in 4 h. 23 m.; Gabriel, in 4 h. 31 m.; Uhlman, in 6 h. 21 m. 25 s.; Bilhouet, in 8 h. 5 m. In the latter class the first three arrivals were Decauville cars. As each only carried one person they could not be said to be actually in the race, as the regulations for this category stipulates that each vehicle should have two persons on board.



E. GEORGES' PEUGEOT CAR.



LEMAÎTRE, GIRARDOT, AND CHARRON LINED UP READY TO START.



FLASH'S VALLÉE CAR (No 6).



GIRARDOT ON HIS PANHARD CAR.

went spinning down the road the delay had amounted to more than two hours—a truly inauspicious start. As for the other racers—well, I was too busy to look after them, but I understand that the six cars, twelve motor-cycles, and eleven voituresses, were all despatched together, a method of starting which I consider to be the height of folly. The small fry should indeed be grateful to the drivers of the large cars that they escaped with their lives. During the evening I was rejoiced to receive a telegram from some kind friend at Saint Pol to the effect that *Mr. Montagu's net time was 4 h. 58 m., or 16 m. less than that of M. Creux, who was first.* A fine showing indeed, and one that ought to satisfy all automobilists that at

The following morning I again went out to Saint Germain to witness the departure of the racing section of the "course." The start, although not affected in quite so dangerous a manner as that of the previous day, was bad enough, the nine competing cars being despatched together, followed by the twenty-four motor-cycles after a two-minute interval. The cars were those of Lemaître (Peugeot), Girardot (Panhard), Charron (Panhard), Jenatzky (Mors), Flash (Vallée), Levegh (Mors), Georges (Peugeot), Broc (Mors), Perrot (Mors), and they were lined up across the road in three rows. Levegh was in the second row, but before half a kilometre had been traversed he had in some extra-

ordinary manner forced his way to the front, hotly pursued by Charron and Girardot. For the others following it must have been almost impossible to have seen five yards ahead so terrible was the dust, and the entire absence of accidents is something to be wondered at.

In the case of the motor-cycles, the same trouble and danger from the dust occurred, and undoubtedly a less dangerous method of starting must be initiated ere long. In order that some comparison of the speeds attained by the leading tourist and racing automobiles may be made, I append the following times occupied by them in the journey to Saint Pol:—Cars: Tourists—1, Creux, 5 h. 14 m.; 2, Maréchal, 5 h. 33 m.; Racers—1, Levegh, 3 h. 23 m. 45s.; 2, Girardot, 3 h. 32 m. Cycles: Tourists—1, Ollier, 3 h. 54 m.; Racers—2, Test, 3 h. 22 m. Two hours and a quarter after the racers had left Saint Germain the signal of departure was given to the tourists at Saint Pol. The distance between that town and Ostend is 136 kilometres, and it was hoped that on this handicap the leading automobiles in each class would arrive more or less together. And this estimate was fairly correct, as will be seen from the times of arrival given below.

## TOURISTS.

| Cars.      | Time of arrival at Ostend. | Time, Paris-Ostend. | Place. |
|------------|----------------------------|---------------------|--------|
| Creux ..   | 3 h. 10 m.                 | 8 h. 24 m.          | 1      |
| Rolls ..   | 3 h. 16 m.                 | 8 h. 51 m.          | 2      |
| Montagu .. | 3 h. 27 m.                 | 10 h. 44 m.         | 3      |
| Chales ..  | 4 h. 13 m.                 | 10 h. 51 m.         | 4      |

Mr. Montagu's time, less delay at start, was thus 8 h. 35 m., or only 11 minutes more than the winner, over a course of 322 kilometres.

| Motor-Cycles. | Time of arrival at Ostend. | Time, Paris-Ostend. | Place. |
|---------------|----------------------------|---------------------|--------|
| Ollier ..     | 3 h. 0 m. 27 s.            | 6 h. 50 m.          | 1      |
| Jeanbert ..   | 3 h. 5 m. 32 s.            | 7 h. 26 m.          | 2      |
| Seignol ..    | 3 h. 12 m.                 | 7 h. 31 m.          | 3      |
| Cormier ..    | 3 h. 16 m.                 | 8 h. 7 m.           | 4      |
| Echard ..     | 3 h. 23 m.                 | 8 h. 18 m.          | 5      |
| Mary ..       | 3 h. 37 m.                 | 9 h. 52 m.          | 7      |
| Courmont ..   | 3 h. 46 m.                 | 9 h. 11 m.          | 6      |
| Caldas ..     | 5 h. 24 m.                 | 13 h. 59 m.         | 9      |
| Riguelle ..   | 6 h. 10 m.                 | 13 h. 27 m.         | 8      |

| Voiturettes.      | Time, Paris-Ostend. |
|-------------------|---------------------|
| Louis Renault ..  | 9 h. 31 m.          |
| Doriot ..         | 10 h. 53 m.         |
| Marcel Renault .. | —                   |
| Bilhout ..        | —                   |
| Filtz ..          | —                   |
| Dulac ..          | —                   |

## RACERS.

| Cars.                  | Time of arrival. | Time, Paris-Ostend. |
|------------------------|------------------|---------------------|
| 1. Levegh and Girardot | 3 h. 56 m.       | 6 h. 11 m.          |
| 3. Lemaitre ..         | 4 h. 17 m.       | 6 h. 32 m.          |
| 4. Charron ..          | 4 h. 24 m.       | 6 h. 39 m.          |
| 5. Jenatzy ..          | 4 h. 25 m.       | 6 h. 40 m.          |
| 6. Broc ..             | 4 h. 39 m.       | 6 h. 54 m.          |
| 7. Flash ..            | 5 h. 32 m.       | 7 h. 47 m.          |
| 8. Perrot ..           | 6 h. 15 m.       | 8 h. 30 m.          |

| Cycles.         | Time of arrival. | Time, Paris-Ostend. |
|-----------------|------------------|---------------------|
| 1. Baras ..     | 3 h. 53 m.       | 6 h. 8 m.           |
| 2. Teste ..     | 3 h. 57 m.       | 6 h. 10 m.          |
| 3. Corre ..     | 4 h. 17 m.       | 6 h. 30 m.          |
| 4. Bardin ..    | 5 h. 8 m.        | 7 h. 23 m.          |
| 5. Merville ..  | 5 h. 10 m.       | 7 h. 25 m.          |
| 6. Ovary ..     | 5 h. 15 m.       | 7 h. 28 m.          |
| 7. Méaulne ..   | 5 h. 20 m.       | 7 h. 35 m.          |
| 8. Bertin ..    | 5 h. 29 m.       | 7 h. 48 m.          |
| 9. Accou ..     | 6 h. 10 m.       | 8 h. 23 m.          |
| 10. Gleizes ..  | 6 h. 14 m.       | 8 h. 31 m.          |
| 11. Rivierre .. | 6 h. 22 m.       | 8 h. 35 m.          |

As may be imagined the "dead heat" of Levegh and Girardot was sensational in the extreme—indeed it was the feature of the race. Accidents and incidents were not numerous, the only serious mishap occurring to the motor-cyclist Marché, who ran into the kerb at Conflans and was thrown violently against a wall, receiving very serious injuries. I send you a number of photographs taken at the departure of the racers from Saint Germain, and regret that I was unable to obtain pictures of the cars of Mr. Montagu and Mr. Rolls.

ERNEST M. C. INSTONE.

## MIDLAND MOTOR NOTES.

By "HERCULES."



## Cycle Manufacturers and Motors.

JUDGING from a tour of inspection over a number of cycle factories in the Midlands, the inquiries firms have received, and the rapid strides the motor industry is making, I have not the least doubt that this time next year most of the cycle houses will have made a serious start in the manufacture of motor-cars and motor-tricycles. For the lighter type of vehicle, the experience firms have had in the development of the cycle trade will be most valuable, and, with their connection with agents throughout the country, should materially assist in placing their motor business on a sound basis and help to smooth over any difficulties which may arise between supply and demand.

## English Workmanship.

SEVERAL firms find themselves with numerous orders on hand before their arrangements for turning out a complete motor-machine are in perfect order. At the present time, however, it is the thorough organization of their resources which is required to enable firms to compete with the orders which are being steadily received. The excellence of English workmanship compares most favourably with that of our Continental friends. Indeed, the writer is acquainted with several men in the trade who have been running Continental motor-machines for some time, who are thoroughly convinced that the workmanship is far below that of English productions.

## A Motor Parcel-Delivery Service.

IN Leicestershire a motor-carriage has for nearly a year been meeting all the requirements incidental to a carrier's business. The vehicle runs between Hinckley, Sharnford and Leicester.

## The Ariel Motor-Tricycles.

I HAD a long conversation with Mr. Charles Sangster, the general manager of the Cycle Components Manufacturing Co., Componentsville, Birmingham, last week, and in taking a tour of inspection through the works was greatly surprised to observe the extent to which this company have entered into the manufacture of motors, motor-tricycles and quadricycles. Judging from general appearances, I should say there can be no doubt that the Components Co. have so thoroughly organized their works that they are able to turn out motor-tricycles with the greatest expedition. It will be remembered that the Cycle Components Manufacturing Co. had previously gone in for the manufacture on a large scale of cycles, and this fact materially assisted them in organizing so rapidly and effectively to cope with the new industry. I may add that this firm are not troubling themselves much about carriages, but are devoting their energies almost exclusively to the perfection of a motor suitable for motor-tricycles and quadricycles. They are issuing a neat list containing prices of motors on the "Components" De Dion system, and are turning out a large number of Ariel motor-tricycles weekly. They have greatly improved their motor during the last few months, and have made a very liberal offer to their old customers. This is, in effect, that if customers will send their machines to them, paying carriage both ways, they will convert the old motor into an up-to-date appliance. There can be little doubt that the Components Company have hit upon a motor which for its size is exceedingly powerful. Whilst I was at the works an engine was being tested, and its capacity was no less than 3,170 revolutions per minute. On a track a tricycle driven by this powerful little engine would be capable of doing close upon forty miles an hour.

**An End-to-End  
Motor-  
Tricycle  
Ride.**

MR. SANGSTER informed me that, should the weather improve, Mr. J. W. Stocks will probably take on at an early date a tour from Lands End to John O'Groats. After his ride of 482 miles within the twenty-four hours, Stocks

considers he ought to do the distance of about 860 miles in two days if favoured with good weather. The only difficulty in the way of bringing the venture to a successful issue is the want of a thorough knowledge of the roads, and all riders know what this means. I also understand that Mr. C. G. Wridgway will accompany Mr. Stocks on his long ride.

**The Daimler  
Co.'s Car on  
the Continent.**

THE Daimler Co. at Coventry are naturally very jubilant over the Hon. J. S. Montagu's success on one of their motor-cars in the Paris-Ostend race. This rider came in third, but had he started at the same moment as

the winner there would have been an exciting finish, the times being identical.

**More  
"Optical  
Illusions."**

It was only the other day that a magistrate, when hearing a summons against a motor driver for furious driving, expressed the opinion that people seemed to suffer from an illusion in regard to the speeds at which these

vehicles covered the ground. Mr. J. Grose, who keeps a motor-carriage depot at Northampton, has experienced the truth contained in this observation. He related to me the other day, with quiet humour, several of his experiences. Thrice has he been fined for furious driving, but on neither occasion was he exceeding the pace which is allowed by law—twelve miles an hour. Twice he employed counsel to defend him, but his version of the affair did not appeal to the magistrates trying the case. On the third occasion Mr. Grose—shrewd man—pleaded guilty, and mildly asked what there was to pay. And this, whilst he knew that his vehicle had been proceeding at the modest rate of six miles per hour! A horse had, however, become frightened by his motor, and had bolted, which had caused the inevitable crowd to assemble. Mr. Grose thinks he will plead guilty at once should he again have the misfortune to be the victim of somebody's too imaginative mind and find his way into a police-court. It pays: there is not only less worry, but one comes out of the ordeal often with more cash in one's pocket than would otherwise be the case. At least, this was Mr. Grose's experience, for at the third time of pleading the fine was only half as much as on either of the two previous occasions.

**The  
Midland Motoring  
Centre.**

DURING the past week quite thirty motors have put in an appearance at the Stonebridge Hotel. Stonebridge is a noted gathering-place of cyclists in the Midlands. It is situated midway between Birmingham and Coventry,

and on a road which, though somewhat hilly, is the favourite resort of riders of both cities. The surface of the road is invariably in excellent condition, whilst the scenery is delightful. The front of the hotel is often a sight worth seeing on a Saturday afternoon or Sunday morning; the greatest animation prevails, cyclists coming and going in crowds, whilst cycles of all makes and grades find support against walls and fences and anything else which lends itself to the occasion. The manager of the hotel is Mr. E. Oxborrow. Himself an old cyclist and of some repute as a racing man, Mr. Oxborrow has proved a friend in need to many a belated and troubled cyclist. Nor has he forgotten to keep a stock of all oils and materials suitable for repairing temporary breakdowns of motors of any description, whether cars or tricycles.

**The Motor  
Manufacturing Co.,  
Ltd.**

THE Motor Manufacturing Co., Ltd., Coventry, are exceedingly busy at the present time, and do not anticipate any slackening off during the coming winter months, as they are so much engaged on the manufacture of vehicles for public hire to run in competition with trams and omnibuses, etc. These vehicles are being fitted with the Company's patent canopy, and are specially designed for winter use. The firm are receiving innumerable inquiries for the Iden "Princess," car to carry two. These cars are now coming through the works in large numbers, and appointments are being daily made so that probable customers and inquirers may have the opportunity of participating in the various road tests. Two cars of this description were run a distance of fifty miles last Saturday on give-and-take roads and came through their trial spin most satisfactorily. A large *chars-a-banc* is also in course of construction, capable of carrying from sixteen to twenty passengers. When finished I am promised a trial run. The Company are also very busy in turning out their 2½-h.p. De Dion motor, which they are supplying to local and other firms. Taken all round this Company appear now to be thoroughly well organized and fully equipped for coping with the demands that are doubtless increasing week by week and month by month.

**The Eadie  
Motor-Cycles.**

AMONGST the cycle firms which are going seriously into the motor trade the Eadie Manufacturing Company are undoubtedly in the front rank. I spent two hours the other day with the works manager, Mr. R. W. Smith, in going over their factory and enjoying a spin on a motor-quadracycle, an admirable specimen of the type manufactured on the premises. A great deal of thought has been bestowed on the construction of this vehicle, and the results are most satisfactory. The front seat is insulated with springs to minimise the vibration due to the inequalities of the road, and a back spring—simple in design but very effective—is also introduced. Another thing which often produces feelings not exactly pleasant is the position a vehicle is sometimes in owing to the convex shape of our roads. One side of the car may often be several inches lower than the other, and the result is a rocking of the body of the machine. Messrs. Eadie have hit upon an admirable device for preventing this being felt by riders on their "quad." The machine is in very great demand, I am informed, but the factory is so well organized that the Company are in a position to turn out quite a dozen each week, in addition to a large number of motor-tricycles. The frames only can be obtained, or the "quads" complete with motor.

**A Trip on an  
Eadie Motor-  
Quadracycle.**

THE motor-quadracycle that I rode the other day, although only 2½ h.p., climbed some of the stiff hills for which the neighbourhood of Redditch is noted. The engine made very little noise in its working—a fact which the public are likely to appreciate—and the whole machine impressed me as being splendidly made and very pleasing in appearance. The Eadie Manufacturing Company are chain and parts makers, as well as cycle and motor manufacturers, and one would scarcely credit that such a difficult place to get at by rail as Redditch is would be such a busy centre. Mr. R. W. Smith has charge of three different factories there, which are practically under the same management. Mr. Albert Eadie is one of the keenest commercial men in the trade, and the combination of his business aptitude with the mechanical genius of Mr. Smith places the firm, as I have said, in the front rank. Motor-chain making is very successfully undertaken by the Company, and they produce an article which is well nigh unbreakable, as shown by the test report given in these columns a week or so ago. Altogether the Company are experiencing a very busy time. They have



taken a large space for the forthcoming Exhibition at the Agricultural Hall, and evidently mean to maintain a foremost position as manufacturers of motors.

#### Improvements in the Grappler Tire.

THE New Grappler Tire Co., of Great Charles Street, Birmingham, have recently made great improvements in the process of manufacturing their tire for motor-vehicles, and they claim that the article now produced by them possesses the qualities which go to the making of an excellent tire—reliability, durability, and ease of manipulation. They have been fitted to cars weighing 25 cwt., and have given satisfaction. Although the Company have only recently taken up the manufacture of motor tires they have received orders from a large number of firms.

#### The Motor-Car Club.

CONSIDERABLE progress is being made by the various branches of the Motor-Car Club. The Birmingham Branch, of which Mr. J. W. Stocks is hon. secretary, has already a good number of members. So much interest was taken in the race meeting recently organized by the Club that it has determined to hold another shortly. Another branch likely to be heard of a good deal in the future is the Eastern Counties one. This has for secretary Mr. Frank Morriss, the well-known motorist, and thanks to his energetic management members are coming in very fast. A branch is in course of formation at Coventry with Mr. A. MacCormack as secretary, and from the number of promises of support received by that gentleman this bids fair to be a great success.

THE Compound Hydro-Carbon Motor Syndicate, Ltd., Luton, is being voluntarily wound up.

THE chief of the Repairs Department of Public Buildings, Boston, Mass., is now using a Stanley steam car in making his rounds.

A NEW firm has just been formed at Marseilles (105 Avenue du Prado), under the style of Berard and Co., to deal in motor-cars, etc.

THE Pittsburg Motor-Vehicle Co., Pittsburg, Pennsylvania, has been reorganized under the name of the Auto-Car Co., with a capital of £200,000.

THE Pfalzische Nähmaschinen & Fahrraderfabrik (Kayser Gebrüder), of Kaiserslautern, Germany, is reported to be taking up the construction of automobiles.

ONE of the latest converts to automobilism is Dr. Muter, F.C.S., F.I.C., of Horley, and Public Analyst for the Lambeth Vestry, this gentleman having just purchased a "Hurtu" car through the London Autocar Co., of Gray's Inn Road, W.C.

It is announced that Messrs. Henderson Bros., carriage builders, of Somerville, Mass., have secured the American patent rights in the electric vehicles of M. Jeantaud, of Paris, and they will establish works for the production of carriages under these patents.

AMONG the American cycle manufacturers who are at present experimenting with the motor-vehicles are: Messrs. E. C. Stearns & Co., Syracuse, N.Y.; the Kensington Bicycle Co., and the Geo. N. Pierce Co., Buffalo, N.Y.; Acme Manufacturing Co., Reading, Pa.; and the Gormully and Jeffery Manufacturing Co., Chicago, Ill.

ELWOOD HAYNES and E. L. Apperson have completed an automobile trip from Kokomo, Ind., to Brooklyn. The distance travelled was said to be 1,050 miles, and was covered in twenty days, only about ten of which were occupied with actual running. This is the longest automobile trip on record in the United States.

## CORRESPONDENCE.

### THE CINEMATOGRAF ON TOUR BY MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—To resume a brief account of my tour, which I fancy may be of interest to your readers, I may commence by stating at the outset that my anticipations of success have been more than fulfilled. The motor-wagonette is the greatest and most effective advertising medium that I ever had in connection with my entertainments. On the opening night at Burgh-by-Sands the house was packed, and Bowness-on-Solway, Abbeytown, Mealsgate, Ireby, Silloth, Dearham and Egremont, Cumberland, all tell the same tale. A glance at the map will show that these places mentioned, followed in the rotation given, will mean a zig-zag and circuitous route, but the booking of dates to fit makes this compulsory, and many steep and stony side tracks different to the ordinary highway have to be negotiated. We always make an early start, and, arriving early at our destination, have ample time to "wake the people up" with trumpet and leaflet, and everybody's talk is of the wonderful "motor-car." An insufficient knowledge of the road on Wednesday last gave us a splendid sample of what my car can do. In journeying from Bowness-on-Solway to Abbeytown, by an error in missing a turn in the road we came right on to the marsh at Kirkbride, which is twice every day completely submerged by the tide, and some very high tides having been experienced there recently, it presented the appearance of a veritable quagmire. A farmer near told us that was our way, and although the road (*sic*) was nothing but muddy sand we determined to essay it. I was nervous at one time as to whether we should accomplish it, but slowly and surely we ploughed through it, the mud and sand nearly reaching the hubs of the axles. For 200 yards or more on one side of the bridge that crosses this armlet of the sea, and for 150 yards the other side, the almost living motor struggled gamely on, and at last we were on *terra firma* again. I remarked to my driver, Mr. Sinclair, that we ought not to run such risks, and he proudly replied, "But look, what a splendid test it has been!" And so it was, for with ourselves and my pianist, Mr. T. N. Lax, and our baggage we had not an ounce less than 14 cwt. on the car, and I am quite proud of the achievement. We have mounted some of the steepest "brows" in this county of Cumberland I ever saw, notably the famous hills at Ireby—Boltongate and the well-known (in this district) Leegate brow. On Monday, *en route* from Silloth to Dearham, we passed a Leyland steam motor belonging to Carr & Co., Ltd., of Carlisle, and exchanged hearty salutations. To-day, in passing through Maryport, Workington, and Whitehaven, we were quite an attraction, judging by the crowded streets in our wake. We have been snapshotted several times, and I hope to be able to send you a copy of one taken by Mr. W. Dacre, of Silloth.

Yours, etc.,

T. J. WEST,

Egremont, Cumberland,  
September 5th, 1899.

Manager, "*Modern Marvel*"  
Co., Ltd. (of Edinburgh).

### THE COMING MOTOR BOOM IN ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Doubtless many of your readers are fully informed of the progress of motor matters in France and on the Continent generally, as the perusal of your columns and of those of some of the daily papers will have done much to enlighten them. Several leading firms in Paris and its neighbourhood have orders in hand for which they cannot give delivery under from sixteen months to two years, while Messrs. De Dion & Bouton, the firm which has made the manufacture of light motors for tricycles its leading line, are reported to have no less than 14,000 of such motors on order. To sum

up the general situation there, the industry, which has only been some five or six years in existence, is already giving employment to about 100,000 men, and in another year or two bids fair to rank as the premier industry in France.

While not begrudging the deserved success which has rewarded the enterprise our neighbours have shown, I think I may claim for this country that by the end of the year 1900, or at any rate in 1901, we shall have made up for the loss of time caused by legislative restrictions, which kept us from entering the field until about three years ago, a restriction which seriously handicapped us in the race for business, and enabled our rivals in France, Germany, and the United States to get a long start of us. Every day new manufacturing firms are entering into the motor-car business, and some of the Coventry firms who have been longest in the field have orders in hand for months ahead. For lighter cars, such as the Pennington, I understand there are no less than eleven engineering firms engaged, and yet the demand exceeds the output, although this state of things will probably be remedied later on, when all these concerns are in full swing. Speaking of Continental orders reminds me that the Daimler Company and the Motor Manufacturing Company have both sent cars to the Continent, which speaks well for the work of British manufacturers, while the Prince of Wales, notwithstanding the inducements which were held out to him to use a foreign make of car, has given his patronage to an English firm.

When the history of the motor-car industry comes to be impartially written, I think it will be generally recognised that a good deal was due, in the early stages, to the enterprise of Mr. H. J. Lawson, who, before the merits of the new method of locomotion were generally recognised, stepped into the breach, and at great expenditure purchased some of the best motor patents, and set up works in order to introduce motors into this country.

40 Holborn Viaduct,  
London, Aug. 31st, 1899.

Yours faithfully,  
CHARLES JARROTT.

#### THE DURABILITY OF MOTOR-TRICYCLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have learnt considerably about various cars by perusing your columns. There is one point, however, upon which you do not seem to have touched, and that is durability.

I am hesitating about the purchase of a motor-quadracycle—De Dion or other good make—and whilst I could afford the original outlay, I am anxious to ascertain whether I could equally afford the upkeep. The question of depreciation is therefore of great importance. Could you or any of your readers, in a forthcoming issue, give some authentic information on the lives of the smaller class of motor-cars?

44 Westover Road,  
Wandsworth Common, S.W.  
September 4th, 1899.

Yours faithfully,  
A. G. JONES.

THE Pendleton Rubber Co., Ltd., Edinburgh, is being voluntarily wound up for the purpose of reconstruction.

THE City Motor-Car and Carriage Syndicate, Ltd., has commenced a service of motor-cars between the Monument and Spital Tongues, Newcastle-on-Tyne, commencing at eight o'clock each morning.

WE learn that the British Motor-Coupé Co. has secured the sole right to run motor-vehicles for hire in Dover during the course of the forthcoming exhibition, and is arranging to send down a fleet of vehicles for the purpose.

REFERRING to the letter in our last issue signed by "Physician," Mr. C. Johnson, the Secretary of the Automobile Club, asks us to mention that the judges at the Automobile Club Show at Richmond awarded a diploma of merit for a uniform for an automobile servant which was exhibited by Messrs. Morgan & Sons, of 81 Palmerston Road, Southsea.

### THE MORISSE PETROLEUM-SPIRIT MOTOR-VOITURETTE.



THERE are several novel features in the little two-seated petroleum-spirit motor-carriage exhibited at the recent exhibition in Paris by Messrs. P. Morisse & Co., of Boulevard St. Michel, Etampes (Seine-et-Oise), France, and of which an illustration is given herewith. The body of the vehicle, as also the motor and the motor-mechanism, is carried on a frame, the latter being supported on the axles by means of springs, this method, it is claimed, not only reducing the vibration of the motor, but also that due to the inequalities of the roads traversed. The sides of the body of the carriage are fitted with perforated metal panels, these being adopted to permit a free circulation of air to the motor. One of the novel features of the carriage is that the power of the motor is transmitted to the front road wheels, while the steering is effected through the rear wheels, which are mounted on short vertical pivots, by means of a small hand-wheel to the right of the driver.

The motor employed is of the horizontal petroleum-spirit type; it is capable of developing about 3 h.p. at 800 revolutions per minute. The cylinder is fitted with radial discs for cooling purposes, while the ignition is by means of an electric



THE MORISSE MOTOR-VOITURETTE.

spark. The motor, which is located in the rear portion of the carriage, transmits its power through one or other of three pairs of spur wheels—three speeds, 6, 15, and 24 kilometres per hour, being provided—to an intermediary shaft. The latter also carries a chain wheel which is connected by a chain to another sprocket surrounding the differential gear on the front road wheel axle. To enable the transmission mechanism to be put out of gear a friction clutch mechanism is adopted. With the variable speed gear provided, and by varying the number of electric sparks, the makers claim that they are able to run their vehicle at any desired speed up to 30 kilometres (18½ miles) per hour. The speed-varying lever, the friction-clutch controlling lever, and the handles controlling the carburettor and the electrical ignition are all placed within convenient reach of the left hand of the driver. The vehicle is fitted with wheels of the cycle type, 65 mm. in diameter, and pneumatic tires. The width between the wheels is only 95 mm. (3½ ft. 1 in.), but the makers claim that by reason of the front-driving arrangement and the low centre of gravity the vehicle is perfectly stable, and that it can turn in a circle of only 14½ ft. in diameter. The motor can be set in operation, from the driver's seat, by means of a small hand-wheel, not shown in the illustration. The carriage complete only weighs a little over 3 cwt.

## MOTOR-CARS ON THE CONTINENT.

### Recent Motor-Cycle Races on the Continent.

ON August 27th a motor-cycle race of 100 versts was decided on the roads in the vicinity of St. Petersburg. The weather was magnificent, but the route proved very heavy owing to the recent rains. All the competitors rode machines of French construction. The winner was M. L. Masi, who completed the distance in 2 h. 43 m. 33 s., and he was followed home by Cournel, Merle, Simon, Jansky, Kinsky and Babkin in the order named. On August 28th, at Kiel, a 4,000 metres race for motor-cycles was won by Niebuhr and Münster, riding a tandem. Their time for the distance was 5 m. 4 s.

### Automobilist Mulcted.

THE Court of Tours has awarded a carter named Cordien the sum of 200 francs for injuries sustained by him in a collision with a Bollée voiturette belonging to M. de Louvencourt, who was in addition fined 100 francs.

### Paris-Boulogne Race.

THE conditions of this race, which is set down for decision on the 17th inst., have been considerably modified. The programme as now arranged is as follows: The start will be given at Saint Germain and the route will be by way of Pontoise, Méru, Beauvais, Grandvilliers, Poix, Abbeville, Montreuil-sur-Mer and Samer, a total distance of 230 kilometres. The value of the prizes is 4,000 fr., and the categories are: (1) Carriages and voiturettes of 6 h.p. and upwards; (2) carriages and voiturettes of less than 6 h.p.; (3) motor-cycles of two places, *both occupied*. This latter class is an entirely new feature in an automobile race and should be of particular interest to manufacturers of speed change gear for motor-cycles.

### Automobiles at the French Army Manœuvres.

EACH day during the progress of certain army manœuvres in the neighbourhood of Bordeaux General Varaigne, commanding the 18th Army Corps, traversed the fifteen kilometres between that town and the scene of action in an automobile piloted by Lieutenant Lannelue-Sanson. Brigadier Winther, driving his own car, also assisted at the manœuvres and the military authorities were most favourably impressed with the speed and convenience of both vehicles.

### The Stanley Steam Car in Paris.

WE understand that the American Automobile and Motor Company, Limited, of Paris, has just concluded an important contract with the Locomobile Company of America, whereby they acquire all the patent rights in connection with the "Stanley" car. The latter Company is said to have a large number of cars in course of construction in America, and it is hoped that several will be sent over for exhibition in Paris by the end of the month. The Paris Company's address is 47 Boulevard Hausmann, but additional premises are being obtained for show-room purposes.

### The Exhibition at Berlin.

LAST Saturday the International Exhibition of Automobiles at Berlin was formally opened by Herr Podbielski, in the presence of a great number of high officials. Four thousand guests attended the opening ceremony, which passed off most successfully. The installation of the show was far from being finished, as many firms had not been able to complete their list of exhibits; but this is a defect common to most exhibitions, and has since been remedied at Berlin.

### Nice-Puget-Théniers Race.

other for motor-cycles.

### Public Motor-Car Services in Spain.

UNDER the patronage of the Automobile Club of Nice, this race has been organized for the 10th instant. The distance is only 65 kilometres, and there are but two categories, one being for carriages and voiturettes and the

### Motor-Car Races in Germany.

WE learn from a Spanish correspondent that a company has just been formed in Coruña to establish and work public motor-car services between Caldis and Calin, *via* Estrada and Cuntis.

IN addition to the two races mentioned in our last issue the authorities of the Berlin motor-car exhibition are organizing a long-distance race from Berlin to Munich, a distance of about 630 miles. The race will be divided into three categories: (1) Cars seating at least three passengers; (2) cars seating at least two persons; and (3) small single-seated cars and motor-cycles. The start is fixed for the 28th inst.

### Electric Omnibuses in Berlin.

ON Sunday last public electric omnibuses began to run in the streets of Berlin, the fare for about one mile being 20 pfennige (about 2d.). The speed is nowhere to exceed eight miles per hour. The car will run for the present in connection with the motor-car exhibition, which opened on Sunday; but should they prove a success the police authorities are prepared to permit their general use.

### The Projected Paris-St. Petersburg Race.

MESSRS. THEVIN AND HOURS, the two members of the Automobile Club de France who have been delegated by that Club to inspect the route of the proposed Paris-St. Petersburg race of 1900, have reached Königsberg, Prussia. They describe the road into Berlin as being fearful for the sixty miles nearest Berlin, but they are delighted with the Prussian roads generally.

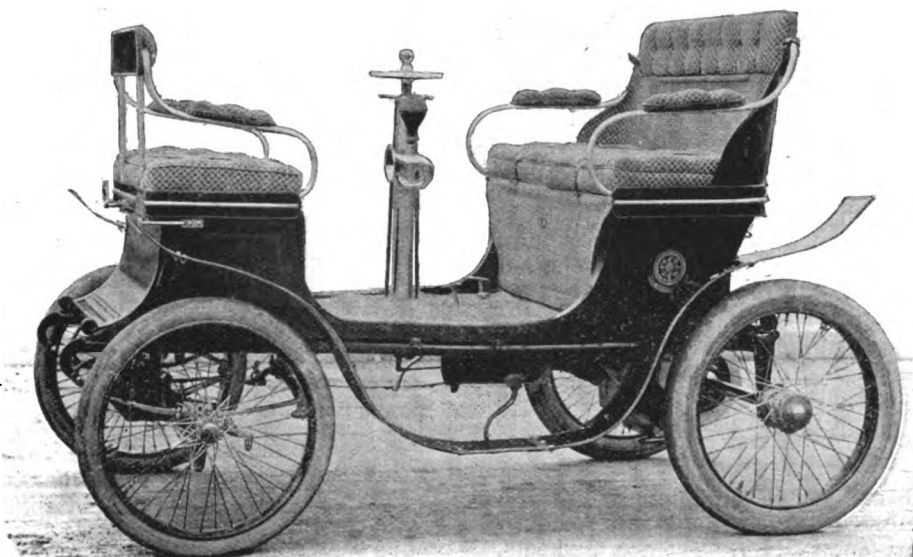
### German-Daimler Racing Cars.

WE learn that the Daimler Motoren Gesellschaft, of Cannstatt, Wurtemberg, has just taken up the construction of motor-cars specially adapted for racing purposes. The new German-Daimlers are to be fitted with motors of 24 h.p., and will be, it is expected, ready in plenty of time for next year's racing season on the Continent.

Of late all sorts of impossible names have been suggested for a self-propelled vehicle in lieu of the words "motor-car" or "automobile." A recent writer to an American daily paper urges, apparently without any special reason, that the name "tomole" be adopted.

IT is announced that the United States Automobile Co. is working on a new type of electric motor-vehicle. Preliminary tests are said to have been very satisfactory. One of the features lies in the motor, which is so designed that there is no occasion for employing the usual differential gear, or "jack-in-the-box," as this device is sometimes called. It is said that the motor weighs less than one-half the weight of an ordinary electric motor commonly used for automobile vehicles. A 2½-h.p. motor of this new construction weighs 77 lb., and one of 5 h.p. weighs less than 125 lb. The steering handle is so constructed that it is always held firmly in whatever position the operator may put it, and the steering wheels cannot change the position in which they are set by the steering lever, no matter what strain is put upon it.

## The De Dion Motor-Voiturette.



A FEATURE of the recent motor-car exhibition in Paris was the large number of light motor-cars to seat two or three persons, and chief among the exhibits of this class of vehicle was the new two or three seated voiturette of Messrs. De Dion & Bouton, of Puteaux (Seine), of which we are able to give an illustration herewith. As will be seen, the car has a very attractive appearance. The motor is of the well-known De Dion vertical type, but of a larger size than usual, it being capable of working up to 3 h.p.; the ignition is electrical, while a new departure is the provision of a water-jacket. A small pump is employed to maintain the circulation, the heated water being passed through a condensing coil in front ere it returns to the storage tank. The carburettor employed is of a new form, and is of the spraying (pulverising) type. Two speeds are provided—12 and 30 kilometres per hour—controlled by a hand wheel on the steering column. Any intermediary speed can be obtained by regulating the sparking device in the usual way. The motor is situated at the rear of the car, and drives the rear road axle through centrally-located gear wheels, a friction clutch, controlled by a foot pedal, being provided, by means of which the motor can be instantly cut out from the transmission gear. For the rear axle Messrs. De Dion & Bouton have adopted the Cardan method of construction as used in their heavy steam cars, the axle being built up in several pieces connected by four universal joints, all vibration due to uneven roads being in this way, it is claimed, overcome. The frame of the car is constructed of steel tubing, while the road wheels are of the suspension type, of equal size, and fitted with pneumatic tires. The motor is arranged to be started by means of a detachable handle; two band brakes, controlled by foot pedals, are also provided, one acting on the intermediate shaft and one on the differential drum. The variable speed gear is enclosed, and works in an oil bath. The car, which weighs about 600 lb., is mounted on springs fore and aft, and is described as being a most comfortable vehicle. Another feature to which attention is drawn is that very few parts of the motor and transmission gear are visible, and that all the control gear, except of course the pedals controlling the friction clutch and band brakes, is mounted on the steering column. The makers claim that even at the high speed the car will mount gradients of from 5 to 6 per cent., and that on the low gear any hill can be negotiated. The new car is being introduced into this country by the United Motor Industries, of 3 Rue Meyerbeer, Paris.

It is reported that the Austrian Small Arms Works at Steyr, Bohemia, intends to add to its existing cycle factory workshops for the construction of motor-cars.

A LIVERPOOL daily states that the Parks Committee has provided a motor mowing machine at Newsham Park, and for over a fortnight this machine has been in use.

A PATENT has been taken out by Mr. H. C. Stephen, of Torbay, Western Australia, for an auto-motor "jinker," intended principally for conveying heavy logs.

BROOKLYN, N.Y., is to have an Automobile Club. The objects of the organization will not, it is reported, be social, but devoted rather to the study and improvement of motor-vehicles.

MR. VAN TOLL, late of the Daimler Motor Co., is now a partner in the Orleans Motor and Cycle Co., Twickenham, who are repairers of all kinds of motor-vehicles. Probably early in next year a new type of car will be introduced called "The Orleans," which will be fitted with a two-cylinder motor and driven by belts.

MESSRS. F. SAVAGE & Co., Ltd., of King's Lynn, one of the firms which have undertaken the construction of Pennington motors, are establishing a large new shop for the work, in which special plant is to be laid down. Only the motors themselves are to be manufactured at Lynn, the cars being constructed and completed elsewhere.

THE National Association of Gas and Gasolene Engine Manufacturers has just been formed at Columbus, O., U.S.A., for the purpose of bringing together at stated intervals manufacturers of gas and gasolene engines, to discuss such matters as are of interest to them. The Association will hold its first meeting in Chicago the first Wednesday in November.

AT the last meeting of the Westmoreland County Council, Mr. C. J. Cooper drew attention to the excessive speed at which motor-cars were run in some cases. He doubted whether it was known that they must not legally run at a rate exceeding fourteen miles an hour, and questioned whether even the police were aware of this. On his motion, seconded by Mr. Puckle, it was resolved that the joint committee give instructions to the police as to fourteen miles an hour being the outside limit, and that they have instructions to act thereon.

## SCOTTISH NOTES.

**Exit the  
Dust Fiend.**

THE rain which has fallen here lately has been welcomed by all classes of motor-carists. The long drought which practically lasted throughout the whole of August was responsible for very dusty roads. In fact, in some parts of the country it lay inches thick, with the result that when driving over roads where this state of affairs prevailed a perfect whirlwind of blinding dust was thrown up, and on reaching the end of one's journey a resort to soap and water, not to speak of a good brush down, was always the first thing to be thought of. A friend of mine who drives out a good deal himself has had an overcoat made for no other purpose than to try and hide the dust. It is of a light grey colour, made long to keep the legs warm, and the jacket pockets can be reached without unbuttoning the overcoat. After travelling several miles on dusty roads one's appearance is apt to get very disreputable unless due precautions are taken, and I think a garment of this sort has much to recommend it.

**Liveries for  
Motor-Car  
Drivers.**

TALKING of clothes reminds me that a doctor writes asking information about a livery for his driver. Of course, top boots, knee breeches, and silk hat, as he points out, are quite out of the question. A friend of mine who was exercised about this same question himself when he first procured his motor-car has adopted a uniform for his driver which I think looks very well. The coat is of very dark green cloth, high in the neck like a military tunic, and with brass buttons. The flap pockets are buttoned down, and the material is edged with a very narrow yellow line. The trousers are ordinary livery ones, very dark green but relieved like the coat with a narrow yellow stripe. The hat worn is a species of forage cap, dark green with yellow line round rim, and enamelled leather skip. The result is, in my opinion, very good, the livery looking decidedly smart, and matching the colour of the car, which has dark green for its foundation.

**The Care of  
Motor-Cars.**

THERE would certainly be some excuse for the prejudice entertained by some people against motor-cars if many such as I saw recently at a certain Clyde watering-place are to the fore. The car itself, as far as construction went, was all right, but can any one believe that it went "plugging" along with one tire off on the front wheel and one on, while the back wheels were the proud possessors of one steel tire and a well worn rubber one? The car was grey with dirt and dust, and had apparently not seen water for some considerable time. It made as much "racket" as a hay-cutting machine as it moved along the road to a noisy accompaniment of loose bolts, rattling chains (striking gear case), etc., etc., and one could not wonder at the derisive epithets hurled at the "chauffeur's" head by envious (?) Jehus. Private owners of motor-cars need no advice to keep their carriages in perfect condition, but in a few instances the advice is undoubtedly needed in the case of some owners of cars plying for public hire.

**The Motor-Car  
and Nobility.**

As anticipated the other week, the Duke of Hamilton, who arrived at Hamilton Palace at the end of last month, has once more shown his partiality for the horseless carriage. Every day during the past week two or three automobiles have been in requisition to convey his Grace's shooting party to the Moors, which are situate a little beyond Strathaven, some ten miles away. Naturally the fact that the premier Duke of Scotland should prefer the new method of locomotion to the old has given rise to a good deal

of talk, and that is what the movement usually benefits by. Safety bicycles, especially for ladies, were well "tabooed" for a long time by many people until members of the Royal Family and titled aristocrats took them up, and then what a rush was made by the "Misses Brown, Jones and Robinsons" to follow suit! Verily, there is a good deal of the snob in human nature! So will it be with the motor-car. So soon as automobilism becomes a fashionable craze, as it promises now to become, the crowd will imitate the example set by society leaders and quickly become the proud possessors of motor-cars. What struck me more forcibly than anything, however, this week was to see a certain popular master of foxhounds riding in a motor-car on the Carlisle Road, and at a smart rate, too. The gentleman in question does not own a car, and the one he occupied was hired; but who knows what the result of his experience may be? A great many sporting men would scorn to look at a horseless carriage, far less ride in one; and it says something for the common-sense of this gentleman that he does not believe in condemning a thing untried, as is almost invariably done by many, who decry motors without knowing anything about them.

**With Law  
and Order Aboard.**

I WAS more than pleased on Monday to see Captain Despard, the Chief Constable of Lanarkshire, and Captain Monro, H.M. Inspector of Constabulary for Scotland, bowling merrily along on a motor-dog-cart, the latter gentleman inspecting the various police-stations *en route*. I will not guess at what speed they were travelling when the car flashed by me on a quiet country road between East Kilbride and Stonehouse, but I had to creep behind a hedge to conceal the grin which overspread my countenance as I thought of what this meant. To have the leading police officials in the county scor—I mean riding about in a motor-car was productive of many thoughts, not the least pleasant of which was that, knowing what a car could do and could not do, it would be only reasonable to suppose that the interests of Scottish autocarists would not suffer in consequence.

"BROWN HEATHER."

MR. JAS. SHEPHERD, of Somerset Place, Boscombe, Bournemouth, who is taking an active part in the motor movement in the South of England, has, we learn, decided to establish an electrical plant in connection with his works, for the charging of the accumulators of electrical-vehicles, etc.

MR. WINTON, of the Winton Motor-Carriage Company, Cleveland, has recently completed what is probably the first motor-carriage designed wholly for racing purposes ever built in America. Placed beside the ordinary pattern Winton carriage, the racer is described as being a perfect monster, being heavier and larger in every way.

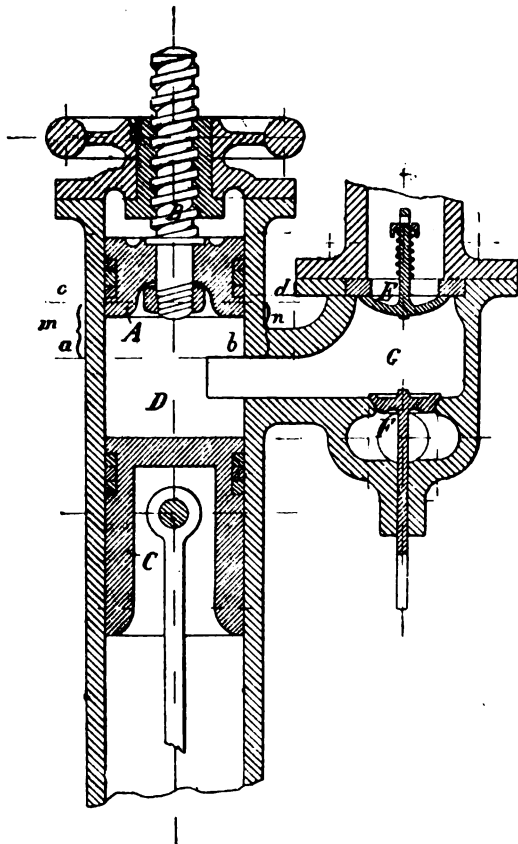
MR. PERCIVALE BOUCH, who resides in Dorsetshire, was recently driving from Lyndhurst to Southampton. A motor-car came along; his naughty horse reared, and pitched Mr. Bouch out of his buggy. Mr. Bouch has sent an account of the accident to the Local Government Board, and written to a contemporary to say: "It is most certainly time that something should be done either to see the present law rigorously enforced or some more stringent rules placed upon motor-cars."

AN important organization in the western section of the United States is the Mississippi Valley Automobile Transportation Co., of St. Louis, with a capital of £100,000, which will operate electric and other vehicles, principally in St. Louis. They have made arrangements with the Woods Motor-Vehicle Co., of Chicago, for a supply of their cabs and carriages, the latter to be leased to private parties and the former to be introduced for public hire. Delivery wagons will also be leased to local merchants under the care of the Company's experts.



## THE MALÉZIEUX COMPRESSION REGULATOR FOR PETROLEUM-SPIRIT MOTORS.

THE accompanying illustration gives a section of an arrangement which has lately been devised by M. F. Malézieux, a French engineer, for regulating the compression of the explosive mixture in petroleum-spirit motors between the maximum and minimum degrees permitted by the motor. Referring to the illustration, *A* is the regulating piston, which is controlled by the hand wheel and screw *B*, *C* is the piston of the motor, *D* the explosion chamber, *E* the admission valve, and *F* the exhaust valve. As regards the method of operation of the regulator, if *a b* represents the position of the piston *A* for maximum and *c d* for minimum compression, it will readily be seen that any desired



degree of compression between the two may be obtained by means of the regulator, the compression of the carburetted gas varying inversely with the space in which it is contained. Thus by increasing the capacity of the explosion chamber by means of the movable piston the effect of the explosion is reduced and the motor slowed down. In a petroleum motor-carriage the regulator can be arranged to be controlled from the driver's seat, so that not only can he increase or diminish the power of the motor, while running, according to the character of the route being traversed, but when it is necessary to stop the position of the compression piston can be readily so regulated as to reduce the speed of the motor to the minimum.

MESSRS. OWEN, BRAZIL & HOLBORROW, of the Vulcan Iron Works, Bristol, inform us that in consequence of the great increase in their business and of their having entered into partnership relations with Mr. Sidney Straker, A.M.I.C.E., of London, they have found it necessary to convert their firm into a limited company. The style of the new company will be Brazil, Holborrow & Straker, Ltd. The conversion will not affect the conduct of the business.

## MORE PROSECUTIONS IN SCOTLAND.

IN Edinburgh Police-Court on the 30th ult., before Acting Sheriff-Substitute Sym, William Henry Ewing, driver in the employment of the Edinburgh Autocar Company, Limited, was charged with having, in Regent Road on the 8th ult., driven the car under his control recklessly, furiously and carelessly. The accused, who was defended by Mr. Isaac Connell, tendered a plea of not guilty. From the evidence it appeared that on the day in question Ewing and another driver who was in charge of a second motor were proceeding with their cars to Portobello. According to the witnesses for the prosecution, both cars were travelling at a speed varying, according to the individual computations, from fifteen to seventeen miles an hour when the one driven by Ewing was stopped by the constable at Abbeymount. Two tram-car inspectors were among the witnesses for the prosecution. For the defence, Leishman, the second driver, an engineer named Wallace, and the accused himself, stated that it was impossible, owing to the setting of the speeds, for the motor to be travelling at the rate mentioned. Further, a tram-car which left Waterloo Place shortly before the motor-cars remained in front all the way. They estimated the speed at which the motors were travelling as under seven miles an hour. A gentleman who had timed the tram-cars on the incline, and afterwards taken the measurements, said that their speed was nine miles an hour at this point. The Sheriff found the charge proved, and fined accused £1, with the alternative of fourteen days imprisonment. A similar charge against Leishman, the second driver, was deserted *pro loco et tempore*.

## MOTOR-CAR ACCIDENT.

ON Wednesday evening, the 30th ult., a party of three gentlemen named Messrs. W. Truscott and J. R. Hopkins, of Stonehouse, and Herbert, of Bristol, were journeying by motor-car from Gloucester to Stroud, when at the cross roads leading towards Haresfield the car collided with a conveyance which was driven at right angles across the road. The car ran against the horse and was considerably damaged. Mr. Herbert, who was sitting in front, sustained the full force of the impact, and unfortunately broke a rib. The horse was also injured, but the other two occupants of the car escaped unhurt. The sufferer was medically attended at Stonehouse, and then removed to Stroud.

## MOTOR-CAR ACCIDENT AT PORTSMOUTH.

DURING the trial at Portsmouth of a new motor-car to be used on the light railway about to be constructed between Cosham and Horndean, an accident occurred on the 1st inst. The motor-car, with two bogie cars behind it full of passengers, had made a satisfactory run to Cosham, and was returning to Portsmouth, when, in going on to the siding at North End, it suddenly left the rails and crashed into the garden wall of Mr. A. W. White, the promoter of the light railway, knocking down eight or ten yards of the brickwork. Mr. Neave, a captain in the merchant service, was thrown under the car, which was brought up by a tree. On being got out, Mr. Neave was found to be only bruised and suffering from shock. The bogie cars in the rear were thrown off the lines, and some of the passengers fell on to the road, but escaped injury. The front of the motor-car sustained some slight damage.

## FURIOUS MOTOR-CYCLING.

AT the Stonehouse Petty Sessions on Thursday, the 31st ult., Ernest Henry Wright, tobacconist, of Cheltenham, was summoned for furiously driving a motor-cycle at Cainscross on August 5th. Mr. Langley Smith, who appeared for the defendant, said that his client wished to plead guilty. He was undoubtedly going at more than twelve miles an hour, but owing to a mishap the machine to a certain extent had become unmanageable. He expressed regret. Police-Constable Garner stated that defendant appeared to be going like a train. Defendant, who remarked that he had driven motor-cars for four years and had not before been spoken to regarding the speed at which he travelled, was fined £1, and 7s. 4d. costs.

THE Rev. A. S. Parsons, Berkeley, California, is having a motor gospel-wagon built by a San Francisco firm, with which he will tour the State.

MESSRS. MAJOR & GILKES, of 20 Broad Street, Reading, is another of the many cycle firms of the country which are keeping well to the front in the automobile movement. They have secured the sole agency for Beeston motor-tricycles for Reading, Wokingham, Henley, and Wallingford. They have ample storage accommodation for motor-cars, and can undertake prompt repairs to the same. Needless to add, they are carrying a stock of petrol and other motor-car accessories.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

TRICYCLE FOR SALE at a low figure. Practically new and latest pattern; genuine De Dion throughout; with all accessories; can be seen in London.—Box 72, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

TWO MOTOR DELIVERY VANS, in good condition; can be altered into wagonettes; one £70 and one £100.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

MOTOR-QUADRICYCLE, interchangeable to tricycle, by De Dion and Bouton, very little used, exceptional bargain, in grand running order; price £67 10s.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DE DION TRICYCLE, 1½ h.p., electric ignition, in first class order, £35. Also 1-h.p. De Dion Tricycle, in splendid running order, £30; and Two Werner Bicycles, in running order, £20 each.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

COVENTRY MOTETTE FOR SALE, in first class running order, fitted with new back tires; £55.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-WAGONETTE, 5½ h.p., grand carriage, in perfect condition, new tires, repainted and upholstered, to carry four or six, free trial to buyers; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-WAGONETTE, 5½ h.p., to carry eight passengers besides driver; geared low for hill climbing, suitable for passenger service, in perfect running order, hardly been used; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

BENZ INTERNATIONAL, to carry three; beautifully upholstered, very powerful, all latest improvements, in grand order; price £120.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

WELLINGTON'S "MOTOR-CAR REGISTER AND ADVERTISER" posted free to any address; send post card for copy to Frank F. Wellington, Proprietor, 36 St. George's Square, Regent's Park, N.W.

NEW GENUINE MOTOR-TRICYCLE by De Dion & Bouton; latest 1½ h.p., guaranteed perfect order; can be seen any day.—Paris Singer, 165 Manor Street, Clapham, S.W.

COVENTRY MOTETTE for Sale, in splendid working order. New 3½ cylinder. What offers?—Grose, Limited, Northampton.

MOTOR-CAR DRIVERS WANTED.—Must be experienced and of good character. Write stating wages expected to Box 24, *Motor-Car Journal* Office, 39-40, Shoe Lane, London, E.C.

SITUATION VACANT.—Thoroughly good Mechanic required to superintend a number of Panhard and Daimler cars. Only experienced men need apply. Good salary to really expert man.—Apply, Box No. 41, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

DE DION TRICYCLE (second hand), 1½ h.p., for Sale. Very fast machine; lowest price £38.—May, 417 Brighton Road, Croydon.

DE DION MOTOR-TRICYCLE, 1 h.p., splendid goer; in perfect order; price £28.—Motor Works, Brighton Road, Croydon.

BENZ FOUR-WHEEL DOG CART, 5 h.p., latest type, for Sale. Written guarantee. Thoroughly reliable; good reason for selling; price £210, or offer.—A. Dowson, Widcombe House, Brislington, Bristol.

TWENTY PER CENT. INTEREST OFFERED.—Wanted to Borrow £40, on the security of 110 fully-paid £1 British Motor and Motor Manufacturing Companies' Shares.—Address, Box 50, *Motor-Car Journal*, 39-40, Shoe Lane, London, E.C.

FOR SALE.—Excellent four-seated Benz Car, 5½ h.p. motor; price £150; can be tried.—Apply, Box 67, *Motor-Car Journal*, 39-40, Shoe Lane, London, E.C.

BACK NUMBERS "MOTOR-CAR JOURNAL."—Numbers 1 and 4 are out of print. Of other back numbers we have but a few left. Those desirous of completing their files should make immediate application for missing copies. Usual price, 1d.; post free 1½d, or through any news-agent.—Cordingley & Co., Proprietors, 39-40 Shoe Lane, E.C.

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797. 24

MOTORS ON HIRE.—Daimlers, Panhards, Benz, New Beestons, etc., in good order, by day, week, or month.—The Yorkshire Motor-Car Co., Ltd., Bradford.

NORTH OF ENGLAND AGENTS for Phébus-Aster Motors, best Motor Accessories, Horns, Toolbags, Ignition Plugs, Valves, Piston Rings, etc. Repairs thoroughly done.—J. A. Bennett & Co., 3 Exchange Arcade, St. Mary's Gate, Manchester.

BENZ.—Millimetre Pitch Chain Wheels, Pinions, and Chains. Several sets for Sale, second hand; low price.—Apply Motor Works, 417 Brighton Road, Croydon.

"THE MOTOR-CAR MANUAL," by R. Moffat Ford, deals with every type of oil motor in a plain and simple manner, for lay readers. How to buy a motor-car, and how to treat it when bought. Why is a motor when it stops? How to make an excursion, and so forth. Treats fully of Daimler, De Dion, Benz, Bollée, Panhard, Mors, Peugeot, and other motors. Post free in exchange for Postal Order value 2s. 6d.—The Motor-Car Co., 168 Shaftesbury Avenue, London, W.C. 26-39

## TO CORRESPONDENTS.



All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 28.]

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## COMMENTS.



DURING the last few weeks the daily and weekly papers have given publicity to the statement that "in consequence of the number of serious accidents which have occurred through the excessive speed of motor-cars in the suburbs, the Chief Commissioner of Police has sanctioned the employment of a number of mounted men for special

duty on the main western roads which are most frequented by motor-car drivers." To those acquainted with the actual state of affairs the paragraph appeared silly and absurd, but so persistent was the publicity given that we placed ourselves in communication with the Chief Commissioner of Police on the subject, and have received the following reply:—

NEW SCOTLAND YARD, S.W.

September 13th, 1899.

SIR,

With reference to your letter of the 6th inst., I am directed by the Commissioner of Police of the Metropolis to acquaint you that, so far as the Metropolitan Police District is concerned, there is no foundation for the report as to special men having been posted on the main western roads, etc.

I am, Sir,

Your obedient servant,

D. H. NORTH,

For Acting Chief Clerk.

THE EDITOR,

THE MOTOR-CAR JOURNAL.

All automobilists thought as much; the fact is that the proportion of accidents caused by motor-cars is, proportionately to the number in use, far below the number of those caused by horse-drawn vehicles.

Accident to  
Mr. J. A. Bradshaw.

His many friends will regret to hear of the serious accident that recently befel Mr. J. Arnold Bradshaw, a well-known Liverpool automobilist, who lately resigned his directorship of the Daimler Motor Co. He had a shooting

party at Llangollen, North Wales, where he has a country house, and was kicked while in the saddle by his daughter's horse, which suddenly lashed out. Dr. J. McMurray, ex-Mayor of Bootle and Mr. Bradshaw's own medical attendant, who was one of the party, did all that was possible with improvised splints and bandages and some carbolic acid dressing which he fortunately had with him. Mr. Bradshaw insisted on going home, and was carried to Llangollen Station on a gate, whence the journey to Liverpool was performed by train. Only this week the doctors announced that the fear of amputation being necessary was passed. Mr. Bradshaw lies at his residence, The Downs, Blundellsend, near Liverpool. We are voicing the feeling of all our readers in hoping for his rapid recovery from a very serious accident,

Hope for  
the Farmers.

AGRICULTURISTS have long been compelled to submit to the exorbitant rates imposed by railway companies on their produce. Agitation has succeeded agitation, but the rates have continued their unfair pressure upon British agri-

culture. At length the advent of the motor-vehicle offers a competitor which may not yet have the effect of reducing the rates, but which will provide an alternative that may serve the farmer. Mr. W. H. Lever, the chairman of the Wirral and Birkenhead Agricultural Society, has been cheering the members of that organization by telling them of the possibilities of the motor-car not only in conveying produce from localities now served by the railway, but also in tapping new districts as yet inaccessible to the railway. In our issue of July 28th we referred to the enterprise of Mr. W. F. Lockeking, of Weybridge, in ordering three vans for the transport of farm and dairy produce from that place to London, and if agriculturists would seriously consider the suitability of horseless vehicles they would quickly realise their usefulness.

The Motor-Car  
on the  
Plantations.

In this connection some innovations are being made on the cotton fields of the Southern States of America, where several large owners have been investigating the possibility of successfully introducing the steam wagon for

the transportation of the cotton crop from the fields to the market. Apparently they have hailed it with satisfaction so far as the outlying districts are concerned, for one of the leading firms is reported to have ordered six motor-wagons, to be employed in moving the cotton crop between Augusta, G.A., and Charleston, S.C. From Cuba comes another interesting report with regard to the war having caused such a scarcity of oxen that the sugar planters would willingly adopt motor-vehicles if they were procurable. So, at least, states an American paper.

Ladies  
and  
Motoring.

MRS. BAZALGETTE, with a lady friend, has just concluded a pleasant trip on her Benz motor-car through Essex. They were accompanied by a lad to clean and look after the car; but the outing fully demonstrated the

capacity of ladies to go a-motoring and thoroughly enjoy it. Leaving her house in Portman Square one day half an hour after noon Mrs. Bazalgette reached Chelmsford at 6.30 p.m. via Hatfield, through mile after mile of lovely lane, and crossing two small rivers ere they reached Bishop Stortford on the way to their destination. The only hindrances were the great harvest wagons that occupied most of the narrow lanes and necessitated stoppages here and there. Among the other trips recently enjoyed by this expert lady-motorist have been runs to Henley, to Brighton, and to Oxford. Most probably she will motor to Dover next week. These trips cannot fail to do much to popularise automobilism among the fair sex, who are being rapidly won to the seat of the motor-car.

### Away with Bluff.

"OPEN confession is good for the soul" and creditable to the conscience of those who make known their delinquencies. Therefore we heartily congratulate the American *Horseless Age* upon the following declaration:—

"Nowhere else in the world have so many 'fake' inventions and promotion schemes in the motor line been brought out as right here in the United States, and to-day the whole country and the honest workers in the field are suffering from the effects of the exaggeration, bluff, and, in some cases, dishonesty which have too often been associated with American motor-vehicle promotion in the past." But a better day is dawning, and, "happily," continues our contemporary, "the speculators, bluffers, and cranks who brought us into bad odour have been displaced by engineers and manufacturers who will show tangible results and convince our foreign friends that the American motor-vehicle industry is not all bluff by any means." After such a confession we must patiently, and in silence, wait the advent of something that is not "bluff by any means." That it may be a long time might be inferred from a statement by Mr. G. H. Brown, the secretary of the Winton Motor-Carriage Company, of Cleveland, who recently said it would be "some years before we can make good machines fast enough to supply the domestic demand, or export motor-carriages."

### British Carriage Builders and Automobilmism.

In the ancient City of York, the twelfth annual autumnal meeting of the Institute of British Carriage Manufacturers was opened on Tuesday, under the presidency of Mr. S. G. Turner, of Bristol. In his presidential address

that gentleman urged the adoption of a far-seeing policy by British carriage builders, who had been too prone to be content with things as they were, without any apparent



MR. A. O. STOPE'S MOTOR-CAR IN THE LIFE-BOAT SATURDAY PROCESSION AT COLCHESTER.

desire for progressive work in the interests of the industry. Mr. Turner acknowledged that there had lately been a great improvement in the designs of carriages, but confessed he was unable to note any improvement in their manufacture. With reference to the motor-car industry, there was undoubtedly a great future for such vehicles, both in the matter of passenger and goods traffic. But this could only be achieved through the combined efforts of the coach builder and the engineer. We are glad to see the president of the British Carriage Builders assume a position we have always regarded as indispensable to the welfare of carriage builders, who cannot afford to be indifferent to automobilism, since future developments will necessitate their close study of motor-vehicles if they do not want to be left behind competitors.

### Mo(o)re Motor-Cars.

ALREADY Old Moore's almanacks are being issued, and the predictions for 1900 are being studied in rural districts. According to one of these publications "scorchers" will appear on the highway in April, and "we hope that the

police will be provided with swift and reliable motors, capable of overtaking these reckless dust-raisers." Another Old Moore's almanack—there are several varieties of the calendar—predicts that in June next "motor-cars will increase in thousands, and many fatalities occur through them." To those acquainted with the motor-car industry this will hardly appear of the nature of prophecy.

### Motor-Cars for Hire.

IN our issue of June 16th last we referred to the motor-car hiring business which is being carried on by the British Motor-Coupé Co., and illustrated two of the types of vehicles employed for the purpose. The other

day we called at the Company's depot in the Euston Road, N.W., and were glad to find that the cars are being taken advantage of to an encouraging extent, the users in every instance being more than pleased with their experience of motor-vehicles. The Company has now quite a large fleet of cars available, including victorias, broughams, family omnibuses, and chars-a-bancs, and can undertake to carry parties up to fifty in number. At the time of our call one car was being washed ready to carry a party of four up as far north as Leeds, while another car was being prepared for a journey to Devonshire and back. We were quite surprised at the extent of the Company's premises in Euston Road. Some important alterations are shortly to be taken in hand with the view of converting the front portion into a spacious depot where a large number of motor-vehicles will be kept both for sale and hire. The locale is unusually well situated for the purpose, as, being close to Regent's Park, any intending purchaser or hirer can promptly be given a trial trip, the result of which, with the comfortable and reliable vehicles available, cannot but be satisfactory.

### Glasses for the Police.

THE police are indulging in glasses—no offence meant, as the glasses are for the eye and not for other purposes. This enterprise has been inaugurated at Yarmouth, where the Chief Constable, a sergeant, and two minor constables from various points of vantage on the piers and beach observed the alleged furious driving of Mr. Bertie Miller. With a pair of glasses Police-Constable Fisher watched the progress of the vehicle while a colleague took the time of the car which, they said, gave a speed of thirteen miles an hour. Against a quartette of policemen Mr. Miller declined to call witnesses, contenting himself with a denial of his furious driving and paying the fine of 40s. Are we to anticipate the addition of field glasses to the policeman's accoutrements?

### Motor-Bicycles.

THE application of the motor to the bicycle has been often tried, but so far with no great success. The opinion appears to be very generally held that a vehicle that cannot stand alone is not adapted to self-propulsion. Notwithstanding this, however, it is noteworthy that quite a number of new motor-bicycles have lately made their appearance in France, but whether they will prove more successful than their predecessors remains, of course, to be proved. Messrs. De Dion & Bouton, the well-known motor-tricycle builders, only make motor-bicycles to order, and only recommend the machine to be ridden in fine weather, as they consider it is dangerous to ride on wet or slippery surfaces.

**A  
Perfect  
Fiend.**

WE once heard Sir Wilfrid Lawson declare that there was only one perfect thing in this world—a perfect fool. Mr. W. E. Geddes, who resides at Cambridge House, Coventry Park, Streatham, S.W., has discovered

another, and, writing to a contemporary, says “the average driver of a motor-car seems to be a perfect fiend.” The motor-car itself he defines as a “big, ugly, evil-smelling



THE PARIS-OSTEND RACE.—M. LEMAITRE'S CAR, WITH GIRARDOT'S AT REAR.

thing.” Having heard the opinion of Mr. Geddes with regard to the “average driver of a motor-car,” it would be interesting to hear the latter's opinion of Mr. Geddes, who drives “a pair of fine, high-mettled horses” in tandem fashion.

**Who Killed the  
Turkeys?**

THERE is some feeling evidenced in the Norfolk papers against motor-cars because the other day “some one a few miles from Norwich drove one of these motor-cars at a furious rate through a flock of turkeys being driven across the road, killing some and injuring others.” Without waiting to count the killed and wounded, the driver hurried along and passed from sight. The effect of motor-cars on various forms of life will form an interesting subject for the philosopher in the future, and we shall be glad to receive the experiences of our readers on the subject, so that ample evidence can be obtained upon which to base accurate conclusions.

**The Motorist  
of the  
Future.**

THE *Irish Cyclist* does well to remind intending owners of motor-tricycles, etc., that some knowledge of mechanics and a few hints for friends will be of material service to them in managing their machines. Much discredit can attach to any new development by the want of knowledge on the part of those who associate with it; hence the need for guidance in such matters before experience comes. Having pointed out that years of acquaintance with equine quadrupeds are required to make a man “horsey,” the Editor of our contemporary seems to have gone to his dictionary before describing the motorist of the future as “fitted with a stoker's face, presbyoptic vision, abnormal acrobatic flexibility of the spine (for diving under the car), cyclometric aberration of the speed-reckoning nerves (a branch of the mendacity department), oily, liquid eyes (s. g. 0.70), great tractive powers, with the proper muscles correspondingly well developed (useful for hauling home derelict cars), deranged smelling powers (bouquet de benzoline a favourite perfume), peculiar garrulity of speech, with a predilection to monosyllables; the motor-car voice (something akin to that of a steam syren

smothered in naphtha). The dress will be reminiscent of a polar bear brought up in an oil tank. Other interesting little traits will make their appearance in time, but we have given enough to enable any lay person to identify the motor-man.” We quote this without prejudice.

**Another New  
Car.**

WHEN calling on Messrs. F. Jackson & Co., Ltd., of Oxford Street, London, W., the other day we were shown the drawings of a new four-seated motor-car the Company has at present in course of construction. The motor and transmission gear will be carried on a steel tubular frame to which any type of body can be attached. There will be two motors giving together about 5 h.p. and located in the front portion of the car; they are of the vertical type, working on to the same crank-shaft. Two forward speeds and one reverse motion are to be provided, the transmission to the rear axle being by means of belts. Sloping hand-wheel steering will be fitted, while the handles controlling the electrical ignition device and the carburettor will be mounted on the steering standard. We are promised further particulars of the new car on its completion.

**An Ex-Mayor of  
Richmond on  
Motor-Cars.**

THE ways of the pioneer are not always easy, as Mr. Hollier is discovering in his effort to promote a motor-car service in and around Aberystwyth. Firstly, he should have been furnished with a copy of the bye-laws, and secondly the police authorities should have warned him before proceeding to two successive summonses. Apparently anything beyond four miles per hour is regarded as furious by the slower minds of certain wiseacres in that little town. We must confess to a feeling of surprise that Sir James Szlumper should have taken the attitude he has, for was he not Mayor of Richmond and is he not an engineer of note? Apparently he overawed his three colleagues on the bench, and was wishful to brand motor-cars as a nuisance. We will not say what we think of Sir James Szlumper.

**An Enterprising  
Croydon Firm.**

QUITE a number of the cycle firms in the London district have been quick to recognise the possibilities of the motor-car movement, and not a few are already laying themselves out to engage in the new industry on a more or less large scale. Among these is Mr. C. F. Miles, of the Onward Cycle and Motor Works, 417 Brighton Road, Croydon, at



whose works we called a few days ago. Mr. Mills has spent considerable time on the Continent in order to make himself *au fait* in automobile matters, with the result that he is now able to undertake repairs to any type of motor-car or cycle. Not only so, but he is making a feature of stocking motor-car



parts of every kind, from a screw to a complete motor. In fact, we were shown, amongst others, parts of every kind for De Dion tricycles, Benz carriages, and Daimler cars, including sparking plugs, springs, pinions, and chain wheels. The works are conveniently situated on the main Brighton Road, and as motor-cars increase in popularity Mr. Mills informs us that he intends to keep his factory open day and night, so that small repairs to motor-cars and cycles can be effected at any hour. Needless to add Mr. Mills keeps a stock of motor spirit on hand to meet the requirements of automobilists.

### The Popularisation of Automobillism.

NEXT to the prominence given to motor-cars in the streets, the attention given the industry in the Press is most likely to popularise it with the public. That being so, the intention of the *Daily Mail* to devote a column every Wednesday to automobilism must be regarded as a noteworthy recognition of the growing number of people interested in horseless vehicles. Our contemporary commences these weekly notes with a general review of the position, and recognises that automobilism "has the advantage of the help of a weekly journal called *The Motor-Car Journal*, a remarkably good pennyworth either from the journalistic or the automobile point of view"—a fact that we are pleased to say has been universally recognised since the first number.

### From Pekin to London.

A MONTH ago we incidentally mentioned a prospective trip from China to London by an enthusiastic motorist who, we may now say, is none other than Dr. Lehweß, of the Automobile Association. He proposes to start from Pekin on a specially-constructed car, the "Koch," burning ordinary petroleum and fitted with a specially-designed burner for the ignition. After leaving China Dr. Lehweß intends to follow the line of the Trans-Siberian railway to the Ural mountains, and thence into Europe. He calculates the journey of 8,000 miles will occupy three months, and the start will be made early next March. We wish this venturesome motorist a good trip, with a minimum of mishaps. But what will John Chinaman think of a foreigner on a motor-car?

### Motor-Cars in the German Army.

It was only last week that we referred, under the heading "War Office and Red Tape," to the refusal given by our military authorities to the request of a number of officers at Aldershot for permission to test the capabilities of motor-vehicles as an adjunct to military equipment. That the question is looked upon in quite another light by the chiefs of the German military department is shown by the fact that both four-wheeled automobiles and motor-tricycles have figured in the manœuvres near Stuttgart during the past week. It is also reported that during the coming winter a conference of competent military experts will be held in Berlin to discuss the question of the introduction of motor-cars into the army, and to issue a report to the Emperor and the War Minister concerning the new departure.

IN the London Road, Southwark, on Friday morning last week, a large motor-van heavily laden with goods collided with a New Cross tram-car and then with a Brixton car. The first accident was but slight, but in the second case the front of the tram-car was much damaged.

MR. FRANK E. BEETON, the secretary of the Dover Show, informs us that the motor race meeting on Wednesday next, the 20th inst., promises to be of an interesting character, as in addition to all the leading English racing men quite a number of French champions are expected to take part.

## JOTTINGS BY A WORLDLING.



IT is all very well to "jot" when you have got something to "jot" about, but it is by no means easy to evolve notes from the results of a week's sojourn at Sunbury. First of all, my local motor observations are *nil*, because I have not seen one car since I have been down here. Indeed, I do not think any one in the neighbourhood has a car except Mr. West, to whom I referred last week; he has been staying here for the summer, and has his tricycle with him; but he does not use it very often, and I have to chronicle the sorry fact that I saw him on a bicycle—the ordinary leg-motor variety!

My own De Dion quadricycle has been a joy to the small boys of the village, who throw their caps on the road before it, shouting "Motah!" the while. Why does the youth of England spoil its head-gear in this way?—a question I have asked many people, but I have not yet found a satisfactory solution to this ethnical mystery. The boys themselves say "Yah!"—or words to that effect. This does not help the student of aboriginal customs. The best suggestion that has been made to me is that it is a form of primitive fetish worship; but my own impression is that it is innate courtesy, and that these caps are thrown on the road to make the path of the motor-car more soft, as Sir Walter Raleigh's cloak was spread under the feet of Queen Elizabeth.

ON Sunday last I was taking a friend for a run when suddenly, just outside Hampton, I saw that one of my tires was down. Now, I am as "keen" as anybody, but if there is one job in this world that I detest it is mending a tire. I hurt my fingers getting it off, I make them dirty and sticky patching the puncture, and I hurt them again putting it on. So I determined to go on and find the village cycle doctor. He was a savage old man, who refused point-blank to help me, and proceeded to give his assistance to an oaf in a Jaeger cycling suit—a frowsy creature who said he was sorry but that he was "on the road," whatever that means. I had to repair the tire myself. *L'èse-automobile* should be punishable by death!

I HEAR that the work at the Automobile Club de France is progressing rapidly and that the splendid building will soon be completed. I have not been in Paris since June, but even in its unfinished state it struck me as the ideal of a modern club house: the best position in the world, a splendid building *meublé* in perfect taste, and a representative membership. What more can one want? I will tell you: A good kitchen and a good cellar for—let me whisper it!—*la cuisine et les vins laissent*, or perhaps I should say *laissent à désirer*.

AND now I have "jotted" to my full.

THE Steam Wagon and Carriage Co., Chiswick, has received an order from Messrs. King & Co., of the Ingersley Vale Bleach Works, Bollington, for three steam lorries for their traffic between Bollington and Manchester, which at present is mostly done by horse-drawn vehicles.

A MOTOR race meeting will be held on the Clarence Park track, St. Albans, on the 27th inst. The well-known English champions, Messrs. Edge, Wridgway and Jarrott, are taking part, as also many other motor-cyclists. We understand that attempts will be made to beat the present English records. The races will be run under Motor-Car Club rules.

# THE RENAULT MOTOR-VOITURETTE.



**A**N example of what can be done with the De Dion motor in its application to light motor-vehicles is to be found in the neat little car which has lately been introduced by Messrs. Renault Frères, of 139 Rue du Point-du-Jour, Billancourt (Seine), of which a general view is given in Fig. 1. The motor, of the latest 2½-h.p. type, is located in the front part of the vehicle, where the air has free access to the radial discs of the cylinder, the ignition being as usual electrical, and the carburettor of the Longuemare type

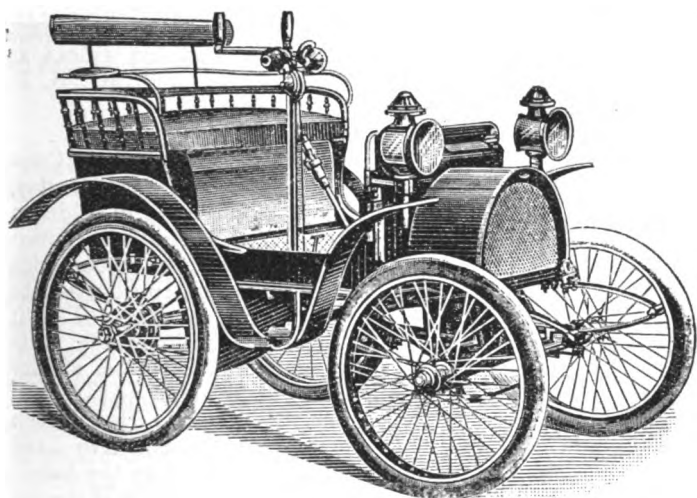


FIG. 1.—GENERAL VIEW.

Three forward speeds are provided, all controlled by one lever, while a reverse motion actuated by a foot pedal is also available.

As will be seen from the plan (Fig. 2), the motor transmits its power through a friction clutch *B* by a longitudinal shaft which extends through a box containing the variable speed-gear, and by the shaft *H*, which is provided with two Cardan universal joints, to a bevel pinion *g* (Fig. 3) which gears with a large bevel wheel surrounding the differential *J* on the rear road-wheel axle. A view of the variable speed-gear is given in Fig. 4. At the high speed there is very little friction to overcome, for the power of the

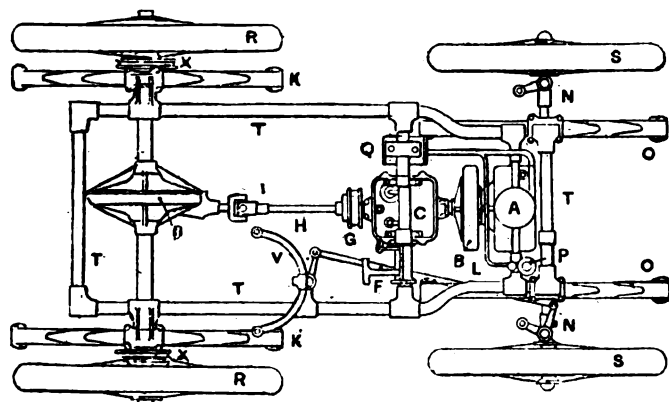


FIG. 2.—PLAN OF RENAULT VOITURETTE.

motor is then transmitted directly through the friction clutch *B* and the shaft *M N* (Fig. 4) to the shaft *H* (Figs. 2 and 3). The shaft *m* (Fig. 4) solid with the cone *F* of the clutch *B*, carries a pinion *i*; the latter is, however, free to be moved along the shaft, and is connected with a stepped clutch *E*, permitting the connection between it and the pinions *7* and *8* to be made or broken as desired. With the pinions in the position shown in Fig. 4, the power is being directly transmitted to the rear axle. To obtain the intermediate speed it is only necessary to turn to the right the handle *V* (Fig. 3), which projects up through the floor of the vehicle, near the

driver. This causes the two parts of the shaft *M N* to be separated, and the eccentric shaft *H* to turn on its axis; the result is that the pinions *2* and *3*, loose on the shaft *H*, are brought into gear with the corresponding pinions *1* and *7*, so giving the requisite reduction in speed. By turning the handle *V* to the left the eccentric shaft *I* is rotated, the power being then transmitted through the pinions *1*, *4*, *6*, and *8*, this giving the low speed. It will thus be seen that three speeds, 30, 16, and 8 kil. per hour, are available. A backward motion is also provided, this being obtained by means of a bevel wheel, controlled by a foot pedal, which can be interpolated

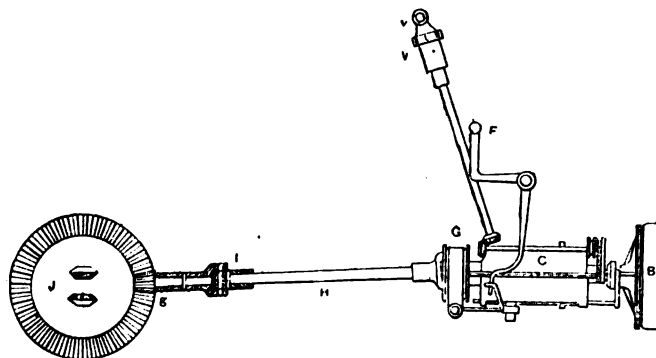


FIG. 3.—VIEW OF RENAULT TRANSMISSION GEAR.

between the level pinions *P* on the shaft *I* (Fig. 4). The clutch *B* is controlled by a foot pedal, by means of which also when the motor is thrown out of gear a band brake is tightened on a drum *G* on the longitudinal shaft. Band brakes on the rear wheel hubs, and controlled by a hand lever, are also provided. Steering is effected through the front wheels in the usual way. The wheels are of the cycle type, fitted with pneumatic tires; the body is entirely separate from, and is suspended on, through plate springs, the tubular steel frame. A petrol tank having a capacity of 8 litres is provided in the front of the vehicle; while provision is made for the starting of the motor from the driver's seat. The car has

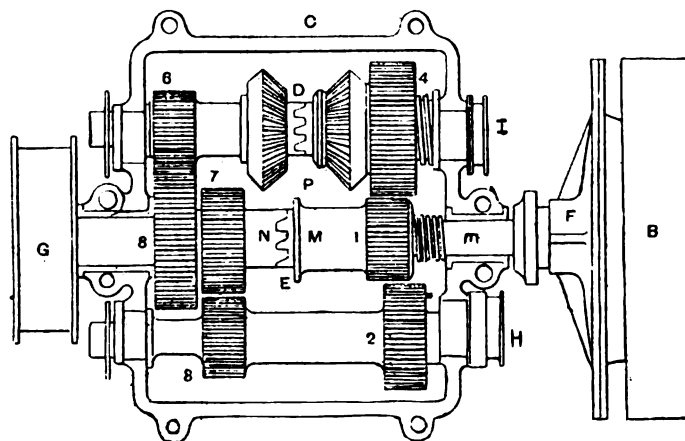


FIG. 4.—VIEW OF RENAULT VARIABLE-SPEED GEAR.

accommodation for two persons, measures only 5 ft. 10 in. by 3 ft. 4 in., while its weight is given as 4 cwt.

As regards the speed and endurance qualities of the Renault cars, it may be mentioned that they took part in the recent Paris-Trouville and Paris-Ostend races, in each case taking first place in the voiturette class, the time in the latter race being only 9 h. 31 m. Messrs. Farman & Co., of 25 Rue de la Paix, Paris, hold the concession for these cars, and are, we understand, arranging with a firm to take up the sole agency for England.



The Swiss Postal Department is reported to be making experiments with reference to substituting motor-cars for the diligence service in the carriage of mails and parcels.

## MIDLAND MOTOR NOTES.

By "HERCULES."



### The English Car in the Paris-Ostend Race.

I HAD the opportunity of examining the British Daimler 12-h.p. motor-car belonging to the Hon. J. Scott Montagu, M.P., which occupied such a creditable position in the Paris-Ostend race. The vehicle arrived at the Daimler Works at Coventry during the week, and I felt it would be interesting to know how it had borne the strain of such a high rate of speed as was maintained throughout the race. The vehicle has come through the ordeal splendidly. I saw the bearings and other vital parts, and found them to be none the worse for the great amount of work which the car has accomplished since its construction. All that was required was a little attention to the adjustments. The car, I understand, is to be thoroughly overhauled, and its motor-power will in all probability be increased. Mr. Montagu's fine performance with the car, and the favourable impression it has created amongst automobilists in regard to English motors, is a subject of much comment in trade circles. It is stated that one of the gentlemen who accompanied the Hon. J. Scott Montagu, M.P., in this race said at the conclusion: "Well, I have been in for every form of sport—hunting, boat-racing, yacht-racing, big game shooting, sleighing, and so on, but I have never experienced anything so thrilling or perfectly delightful as motor-racing."

### A New Motor Firm.

MESSRS. LINFORD AND WILLSON, of Bellbarn Road, Birmingham, have started in the manufacture of motors, and have, I am informed, orders on hand which will keep them busy for a considerable time. Their factory is an extensive one, and contains a full complement of machinery necessary for the construction of motors, and in addition Messrs. Linford & Willson have laid themselves out for repairs of every description in connection with motors and motor-cars. In short, they are in every way prepared to meet the developments which are bound to come in the motor industry. Both partners are well known as men of extensive experience in cycles and cycle construction. Mr. H. C. Willson gained a thorough practical knowledge of engineering work whilst engaged with one of the largest cycle firms in the United Kingdom, and he has for several years occupied the responsible position of works manager at Bellbarn Road. The commercial side of the business is ably carried out by Mr. Linford, who is in very close touch with most of the cycle agents in the United Kingdom. With such capable management there is no doubt that the firm will enjoy the success which their enterprise deserves. It is a well-known fact that their tricycle was one of the most popular in the trade, and its excellence was such that the firm experienced a fine run of business.

### Rims for Motor-Vehicles.

I MET Mr. T. H. Woollen, manager of the Jointless Rim Co., Ltd., of Longacre, Aston, Birmingham, the other day, and had a long chat with him. This Company have made a speciality in cycle rims for several years past, and have enjoyed a large measure of success; and as Mr. Woollen is a member of the Institution of Engineers, and so well known in connection with the cycle trade, I was not surprised to learn that he is watching the motor industry very closely. It may therefore be confidently believed that as soon as the development of the trade presents the opportunity, the Jointless Rim Company will introduce a rim suitable for the various types of light motor-vehicles. And there is everything to warrant the conviction that the Company will spare no expense to produce a rim which will serve the motor trade as well as their cycle rim has served the cycle industry.

### Motorists at Stonebridge.

IN my notes last week I referred to the popularity of Stonebridge Hotel. When I was there Mr. Oxborrow, the manager, promised to keep a record of the number of motors calling at his house during one week. He now informs me that last week no fewer than forty "put up" at the hotel. The motors were of all descriptions, and many of the motorists were old cyclists who had visited the hotel on many an occasion. Amongst these was a gentleman who was on his way to Manchester with a brand new Daimler car. In reply to my inquiry, Mr. Oxborrow informed me that not one motor throughout the week required the least attention in the way of repairs—a fact which some writers will do well to ponder over. Such well-known riders as Mr. Charles Sangster, Mr. J. W. Stocks, and Mr. S. F. Edge are frequently to be met at the hotel.

### The Beeston Motor-Car.

CALLING at the Beeston Motor Company's works, Coventry, the other day, I was pleased to find that in addition to manufacturing the De Dion motor-tricycles and quadricycles, upon which there has been a great run during the present season, the Company have begun to build light motor-cars. I had the opportunity of examining the parts for their first car, which, when completed, will be a very handsome turn-out. The motor will be of about  $3\frac{1}{2}$  h.p., and the weight of the car something like 5 cwt. It will be a motor "built for two." There will be two effective band brakes—one applied by the foot, and the other by the hand; two speeds, electric ignition, and it is claimed that the car will be able to climb any hill which can be negotiated by a horse and trap. The form of the vehicle appears to give a very comfortable position to the passengers, whilst the steering apparatus, gear clutches, etc., are very neatly arranged, and in such small compass that no inconvenience will be felt by either of the passengers. The car will not be ready for a little time yet; when it is, I have been promised a run in it. In its construction aluminium is used as much as possible in portions where there is no strain. The run I made round the Beeston works was exceedingly interesting. Everything connected with their motors is manufactured on the premises, and every point in motor construction is touched. There are turning, casting, enamelling, plating, and finishing shops; whilst another portion of the extensive premises is devoted to experiments. I observed a motor-tricycle which had come in for some slight repair, and was informed that this tricycle was owned by a gentleman of independent means, who practically passes the whole of his time in making tours through the country. During the past two months, he told the firm, he was in North and South Wales and the West of England, and within the period named he covered something like two thousand miles. The motor, he added, had given him very little trouble indeed, and he was perfectly satisfied with its behaviour.

### Trouble Brewing.

IT is well known that the Beeston Motor Co. were the first firm in England to look favourably upon motor-propelled machines, or, in other words, had sufficient pluck to venture upon their construction. Most people are ready to give the firm the praise which is due to the pioneers in any industry, and to acknowledge that the motor-machines they have turned out right from the start are a credit to the makers. That, I venture to assert, is the general opinion of those who have had any experience with the motor-tricycles manufactured by the Beeston Motor Co. But, like other pioneers, this Company has not escaped attack. One discordant voice has at length made itself heard, or, to be accurate, one rider has seen fit to enter into a correspondence in a contemporary in reference to a machine

which he says was made by them. Mr. Gorton reverted to this correspondence whilst I was with him the other day, and said he thought it was most ridiculous for any man to compare the machines made three years ago with those turned out at the present time. The motor-tricycle made three years ago was an exact facsimile of the then French model, and, in his opinion, one might just as well compare the bone-shakers manufactured by a high-class firm of twenty years ago with the up-to-date bicycle of a high-grade maker to-day. The assertions made by a writer who had not the courage to append his name to his letter will most probably form the subject of an action in the law courts. It is gratifying, however, to know that the firm are constantly receiving letters from customers whose experience of the Beeston motors have been exactly the reverse of those of the writer referred to.

#### The Fleet Specialities.

I HAD A run over the premises of the Fleet Carriage and Wheel Company, Fleet Works, Coventry, a day or two ago, and found the firm exceedingly busy. The Company deal very largely in solid rubber tires, the wearing surface of which is guaranteed for a period of twelve months. They claim that their tire does not strip, and that the "tread" cannot be easily damaged or cut by the thousand and one things which are to be met with on all roads. It is made in all sections and sizes. This Company also make a speciality in wood wheels, to which either solid or pneumatic tires can be fitted. Rubber mats and trimmings generally for motor-vehicles are dealt with in another department. I noticed in one of their shops that several cars had been sent in by motor manufacturing firms to pass through the finishing process—for which the firm have excellent facilities—and amongst these was the body of a vehicle for Mr. W. K. Welch. Although this firm has been in existence scarcely more than six months, their business is growing rapidly, and the management is, I am told, already being compelled to look out for larger premises. This is not surprising, seeing that the partners have had large experience as coachbuilders, and are intimately acquainted with the requirements of the motor industry, with which they have been associated from its introduction into this country.

#### Clipper Tires.

THE Clipper Tire Company, Ltd., (Aston Cross, Birmingham), who have been connected with the cycle trade for a considerable period, and during the past few years have gone into the front rank of cycle tire manufacturers, are now supplying tires suitable for light motor-vehicles. From the appearance of the tire, which is of the Clincher type, and the principles on which it is constructed, there can be little doubt of it giving every satisfaction. The rubber used is of the very best, and it has gone through the best test possible—actual wear and tear on thousands of cycles. The Company have shown much foresight in thus preparing to meet the demand which will undoubtedly be experienced next year for good tires for motor-vehicles.

#### A Cycling Authority on Motors.

FOR A number of years Mr. W. F. Ball has been the special correspondent for the *Birmingham Daily Mail* on all matters connected with cycle construction, tires, racing, etc., and he is well known in the Midlands as an authority on these things. On Saturday the daily referred to above contained an article from the pen of Mr. Ball describing "A Ride on a Big Motor-Car." He had the pleasure of a fifty mile run with Mr. Bird, of Moseley, one afternoon last week. "Mr. Bird is," he says, "above all things a careful driver, and wended his way up the busy, tram-lined main street of King's Heath at a slow speed, but in a manner which showed perfect command over the car, that seemed

to lack nothing in its equipment which could be added to the safety of the public." His attention was arrested by the brakes with which the car was provided, and the effective way in which they were used by Mr. Bird. "Two of the brakes," he says, "were quite sufficient to hold the car in and take the somewhat heavy vehicle down Parson's Hill into Kings' Norton at a walking speed. Later on, however, we shot up a short, steep rise and over the top so fast that I thought for a moment we must certainly be launched into space. Gravity, however, held its own, and so, although I for one felt as if I had left my soul floating above, our bodies and the car under them dropped like a bolt from the blue into the dip; and here again, on approaching a corner, the car was slowed down to six miles an hour in no time, and that without any jerk or sensation of the brake's effect at all. Out in the open country and on wide, easy highways they ran beautifully. The pace was fairly fast at times, but the steadiness and smoothness of the motion were wonderful. The good springs of the full roadster pneumatic tires completely absorbed all ordinary inequalities of the road. Some of the horses met on the road displayed marked signs of fright, and others regarded the new-fangled vehicle with indifference." The best bred and best driven horses, as it appeared to Mr. Ball, were the least disturbed by the approach of the car. Some of the rougher animals ridden by tradesmen's youths or farm hands gave some trouble, but, adds the writer, "it is evident from the number of animals which already have lost all fear of motor-cars that a very short time must elapse before all horses will be as little disturbed at the appearance of one of these vehicles as they are now at a bicycle." The ease with which the car was steered was also noted by the writer, who goes on to describe how the four speeds were utilised with best possible results. The famous ascent at Gorgot was easily mounted at "the slow but useful pace of about six miles an hour." After speaking of the experience and judgment which is required in the use of the speed gears, Mr. Ball concludes: "Looking out from the 'box seat' of the car, with cyclist eyes, I could not fail to be struck with the fact that a big motor-car does not have to encounter a tithe of the difficulties with pedestrian travellers which fall to the lot of the more lowly wheelman. The car enjoys quite all the advantages of the carriage and pair on this point, for when either of these vehicles makes its appearance people on foot immediately give way. They forget all about their 'first right to the road,' and run if need be rather than risk either collision or argument with such substantial drivers. The boys do not throw their hats at you when you are sweeping down the road on a big motor, neither do the roughs form a line across the street, or try to put sticks in your wheel. To set against these advantages motor-driving calls for a far greater concentration of attention than is necessary in open country when steering a bicycle. Motoring, too, is undoubtedly an expensive hobby, but, for all that, it is a rational and sensible as it is an interesting, not to say fascinating, art and amusement for those who like it and can afford it."

#### The New Grappler Pneumatic Tire Company, Ltd.

WITH reference to the paragraph in last week's issue, I am informed that it was written under a misapprehension. The "New" Grappler Pneumatic Tire Company, Ltd., are old vehicle and motor-tire manufacturers, and have, I understand, been dealing with this class of work for a period of seven years.

At the last meeting of the Arundel Town Council Alderman Rolls called attention to the danger attending the passage of motor-cars through the narrow part of Tarrant Street, near the square. He suggested that the Works Committee be entrusted with the task of putting up a notice warning motor-car drivers regarding the manner in which they entered that part of the town, and moved a resolution to this effect, which was carried unanimously.

## THE BRITISH MOTOR INDUSTRY.

**G**REAT things have happened in the British motor-car industry since the British Motor Daimler Company's carriage appeared in the Lord Mayor's procession in 1896; but despite all the changes the British Motor Company has developed with a steady consistency that has surprised many opponents and certainly gratified every supporter.

The list of motor manufacturers now under licence to this Company is a very imposing one, comprising most of the English firms who are going ahead as leaders in the industry. They all recognized the value of the British Motor Company's patents, and the number of machines running under its licenses is increasing every day. Not only are they thus demonstrating the commercial efficiency of the British motors, but in obtaining medals and other distinctions on the racing track the licensees of the British Motor Company have been most successful, and last week the window of the Company's establishment on Holborn Viaduct was, for the time being, not unlike a jeweller's display with its assortment of gold and silver plate won by Messrs. Jarrott and Edge on machines built under the Company's patents. Their marvellous speed in racing has created a great sensation. At the Crystal Palace, on Wednesday, Mr. Jarrott won the championship, beating all records.

Of course, the reason of the success which has attended the Company's operations is found in the hundreds of patents which it holds—a number greater than that owned by any other British firm, and the value of which may be inferred from the records held by machines built under the Daimler, Pennington, De Dion, Bollée, and other British motor patents. Owning so many patents, small wonder is it that it has had to defend its rights in the law courts. During the last two years nine different actions for infringing patent rights have been brought and won; the last judgment alone being equivalent to an injunction against some hundreds of users and infringers in this country. Unfortunately, many innocent purchasers have been affected by this case. So far the British Motor Company has had a steady career of success, and the caution with which its progress is now being directed indicates that a strong position is being built up—based upon conditions that the foresight of the promoters have steadily borne in mind from the beginning of the industry:—

Following upon the boom which all are anticipating to take place in the last year of the old century, great developments are likely, we learn, to be made by the British Motor Company, and their advent will assuredly be watched with interest by all concerned in the advance of a business whose extent will shortly have no limitations.

## THE AUTOMOBILE CLUB'S AUTUMN TOUR.

**W**E have already published a rough outline of the autumn tour of the Automobile Club which starts to-morrow. We are now able to give the final programme.

Saturday, September 16th: London to Folkestone, *via* Maidstone, 77½ miles. 10 a.m.—Leave Club, proceeding *via* Westminster Bridge Road, Kennington Road, then (on crossing the Clapham Road) to the left along the Brixton Road, to a little beyond Brixton Station, then to left up Effra Road and Tulse Hill, across Norwood Road, along Thurlow Park Road, and to right along College Road, past Dulwich College to Crystal Palace, thence to left down West Hill, over railway bridge at bottom and straight on to South End (*not* Southend-on-Sea), where the Sevenoaks main road is reached; turn to right along Sevenoaks Road and on to Bromley (13 miles). (R. 47) Farnborough (17 miles), Riverhead (25 miles). At "Amhurst Arms," Riverhead, turn to the left. (R. 134) Seal (27½), Ightham (31 miles), Wrotham Heath (34 miles), Maidstone (42½ miles). 2 p.m.—Luncheon

at the Royal Star Hotel at Maidstone. 3 p.m.—Leave Maidstone for Folkestone (R. 32), 35½ miles, *via* Charing, Ashford, Hythe, and Sandgate. 8 p.m.—Dinner at Wampach's Hotel, Folkestone. Sleep at Wampach's Hotel, Folkestone.

Sunday, September 17th: Leave Folkestone by boat (11.5) for Boulogne to see termination of the automobile race, Paris to Boulogne, organized by the proprietors of *La Vie au Grand Air* in connection with the Congress at Boulogne of the French Society for the Advancement of Science. Leave Boulogne 7.55; arrive Folkestone 9.50. Supper at Wampach's Hotel, Folkestone. Sleep at Wampach's Hotel, Folkestone.

Monday, September 18th: A day tour. Suggested tour, liable to variation: To Canterbury, 22 miles; Canterbury to Margate, 16½ miles; Margate to Sandwich, 8½ miles; Sandwich to Deal, 6 miles; Deal to Dover, 8½ miles; Dover to Folkestone, 7½ miles; total, 68½ miles. Dine and sleep at Wampach's Hotel, Folkestone.

Tuesday, 19th September: Drive to Dover, and there take part in the inauguration of the Automobile Exhibition (organized by the Mayor of Dover, with the co-operation of the Automobile Club) in connection with the meeting of the British Association at Dover. There will be motor-cycle races on the track. Dine and sleep at Folkestone.

Wednesday, September 20th: Return to London.

Some members may possibly prefer to attend the Congress of the Automobile Section of the French Association at Boulogne, on Monday, the 16th inst., instead of taking part in the day tour. The programme is as follows: 8.30 a.m.—Congress opens; discussions on the question of "Automobilism"; M. Pasqueau, Inspector-General of Bridges, will read a paper on "The Transport of Automobiles on Railways"; M. Bricka, Inspector-General of Public Works in the Colonies, will read a paper on "The Employment of Automobiles in the Colonies"; and M. d'Abartigue a paper on "Wheel Gauge of Automobiles." 10.30—Visit to the Automobile Exhibition. 2.10 p.m.—Procession of Concours d'Elegance. A paper will then be read before the Fourth Section by MM. Mesnager and Cuénod, the subject being, "Automobilism on the Road, as regards the Motor, the Vehicle, and Traffic"; the subject is to be treated from three standpoints: (1) historic, (2) study of the elements of automobiles, (3) the future of automobilism—the reforms to be wished for.

Members are particularly requested to see that motor-vehicles taking part in this tour are on no account driven at a speed exceeding the legal limit—twelve miles an hour—and that the vehicles are driven slowly in traffic, in passing through towns and villages, and especially where children are playing near or on the road-ways. Petrol may be obtained from E. Allcorn, 30 Stone Street, Maidstone; William Francis, 66, High Street, Folkestone; while accommodation for the storage of motor-vehicles will be provided by C. Huntley, Bouverie Mews, Folkestone, at 1s. 3d. per night.

THE Gordon Cycle and Motor Co., of 140 Seven Sisters Road, Holloway, is to be added to the list of firms in the London district holding a stock of motor-car spirit. The Company is also in a position to undertake repairs to motor-vehicles, and has ample accommodation for the storage of motor-cars.

MR. CHAS. T. CROWDEN, Motor Works, Leamington, informs us that he has now an extensive stock of parts and fittings, such as valves, springs, pumps, governors, piston-rings, etc., for motor-cars by the best known makers (Daimler, Panhard, Benz, De Dion, Mors, etc.), together with a selection of electrical sparking apparatus, including batteries (both primary and secondary), coils, sparking plugs, switches, insulated wire, lamps, and binding screws; platinum tubes, burners, etc., for lamp ignition are also kept. Mr. Crowden is now prepared to undertake the prompt execution of repairs and renewals to all makes of cars.



# CORRESPONDENCE.



## UP AND DOWN CUMBRIAN FELS ON A MOTOR-CAR.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—I thought last week's record of our achievements would be the greatest I should ever have to tell, but the past week's experiences certainly go one—nay, two, or even three—better than its predecessor. Kirkbride Marsh will ever be a memory to me of what a Daimler motor can do, but our hill-climbing since that adventure is, I am quite sure, phenomenal. The route after leaving Egremont, Cumberland, was Calderbridge, Eskdale Green, Ravenglass, and Broughton-in-Furness, and of this journey I would like to give you some particulars. At Egremont, thanks to the excitement caused and advertisement obtained by the first appearance of a motor-car, my receipts in one night nearly equalled those of two nights on a previous visit, the hall-keeper remarking that it was the biggest house he ever saw there.

The journey to Calderbridge was only five miles, and we stopped *en route* at Beckermest in order that I might renew my acquaintance with the worthy schoolmaster, Mr. Brown, who marshalled his scholars to the windows of the school to see what he termed "the carriage that went without a horse," and, apart from this, the journey of that day was void of further interest; but Calderbridge to Eskdale Green was the journey that established yet another record, and of our ascent and descent of Irton Fell no word-painting of mine could give an accurate idea. When I approached it at Santon Bridge I confess I felt it would be impossible. The "fell" was sandy, sharp and nasty-looking flints protruded here and there, but either we were to climb it or lose the night. We all three dismounted, thinking the car with its 8 cwt. of baggage was quite enough. On—on we went, slowly yet surely, Mr. Sinclair guiding the steering-handle from the ground, Mr. Lax and myself gazing sympathetically from either side, and gradually we neared the top. At last the summit was reached, and, as we gazed back, we had a lovely view of an enormous expanse of country—the Irish Sea

fully three-quarters of an inch in the rubber. Eskdale rewarded us with a "record" house.

The next day, to get to Ravenglass, we were told that a worse place than Irton Fell stood between. A dreaded spot, justly termed "Sandbank Hill," where quite recently a traction engine, in attempting its ascent, stuck fast in the middle, and had to ignominiously return. An alternative was suggested, viz., "Would Lord Muncaster allow us to use his carriage drive, and so avoid this terror of a place?" I wired his agent, Mr. Watt, of Ravenglass, to grant



permission, but he regretfully refused, saying some of the bridges were weak—he evidently thinking the wagonette was a much heavier affair than it really is; but I must do him justice to say that when I saw him afterwards at Ravenglass he was sorry he did not consent.

Well, off we went: either we must climb Sandbank Hill or miss a night. When we reached its base the cause of its terrible condition was quite apparent: they were erecting a new building there, and "leading stone," as it is termed, had helped considerably to make it in such a state. I went forward and prospected, and came to the conclusion that it would be madness to attempt it without assistance, so I went to the foreman on the works, who fortunately had witnessed our entertainment the previous evening, and, being very pleased, had quite an interest in us. He instructed two of his men to unyoke their horses and hitch them tandem-wise to the car. With motor working, horses pulling, Mr. Sinclair at the helm, and myself ahead shouting orders how best to miss the huge boulders embedded in the sandy ground, and projecting in many instances at least six inches above the surface, we soon were on the top. Thence to Ravenglass was easy sailing, and at night another "bumper."

I notice the Daimler Motor Co., Ltd., in their advertisement, speak of the 79½ stones taken up a hill during the hill-climbing contest; but surely these hills that we have done must be mountains indeed in comparison to the one selected for the contest, and my motor—their motor 1122—should be proudly referred to by them, as to what it can accomplish. If we go on as we are going throughout the tour, I think I must try and arrange to bring my car and show it at your next exhibition—"A magnificent proof of the merits of the motor."

I must not trespass on your space to detail more this week, only to say that I enclose a number of photos taken by Mr. Daire, of Silloth. The first will be of interest as showing the original Carmont's shielded rubber tires, which I had replaced by "Clincher" new section 227 at Edinburgh. It was taken just before I started with my family to Linlithgow for an afternoon trip; the second photo is interesting as showing our appearance when loaded up for present tour. One item I ought not to forget. A doctor, near Millom, as we passed, said when he saw the car, "That's what I want, and what I will get." Yours, etc.,

T. J. WEST,

Broughton-in-Furness,  
September 11th, 1899.

Manager, "Modern Marvel"  
Co., Ltd. (of Edinburgh).



glistening on our right, and the Isle of Man clearly defined in its midst. Near the top of the mountain was a charming residence, which appeared to be full of guests, and quite a bevy of ladies watched our progress, and one gentleman, who said he was much interested in motor-cars, warned us as to the wretched nature of the declivity we now had to negotiate ere reaching Eskdale. It was really worse than the ascent, but down we went "all aboard," and at the bottom picked out of one of our front tires a piece of flint that had buried itself

## A SURFACE INDICATOR FOR MOTOR VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the notice and illustration of a surface indicator in your issue of September 1st, the description you give of its method of registering is, I think, hardly correct.

If you will just look at the hand and the way it works you will see that a hill of one in eight is indicated less steeply than one in twelve, and that one in two is actually a still slighter gradient than one in eight or one in twelve.

I have one of these instruments myself, and when I first got it I could not understand how it was supposed to read, but I find it is divided into hundreds, and when the indicator points say to eight it means eight in a hundred, which is, roughly speaking, about one in twelve, and so on right through the figures shown on the dial. It is very reliable, and interesting in action.

7 Tavistock Chambers,

Hart Street, W.C.

September 9th, 1899.

Yours truly,

S. F. EDGE.

## AN EARLY STEAM CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I call your attention to an error in your issue of September 1st, in which you give an engraving of what is said to be Mr. Loftus Perkins' steam carriage. This is not, however, correct, as it is a copy of a block in the autobiography of Mr. Richard Tangye, entitled "One and All," and represents the steam carriage built by him in 1862, as you will see by reference to Mr. Fletcher's well-known work, "Steam on Common Roads," page 165. Thanking you in anticipation,

Cranbrook,

September 11th, 1899.

I am, yours faithfully,

"PRECURSOR."

## A DANGEROUS HILL.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A timely warning may perhaps save some of your readers who are likely to be touring in this district from severe accidents. On the road from Thirsk to Helesley there is a hill known as "Sutton Bank." Last Sunday I attempted its ascent on a 6-h.p. Panhard car, and only with the help of another man and frequent rests were we able to get to the top.

In my road book it is described as "a very dangerous, rough, and precipitous bank," with an average gradient of 1 in 8. This hardly describes it, as on several of the steepest parts the clinometer needle on my car went right off the scale; the surface is abominable—very rough, and loose. It is about a mile long, coming right off the top of the Hambleton Hills, and its descent is a thing to be avoided. The natives on the top informed me that only one car had been down before, and it broke the brakes in the first hundred yards and had to be cautiously let down with ropes tied on behind. It is the worst and most dangerous hill I have ever seen, and it cannot be too assiduously avoided.

Northallerton,

September 11th, 1899.

Yours faithfully,

J. ERNEST HUTTON.

## PROSECUTION OR PERSECUTION AT ABERYSTWYTH.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I beg to call your attention to a prosecution that has taken place here this week. In the first place I must start from the time of arriving in Aberystwyth with my motor chars-a-banc. This was August 7th, on which day I took out my licences, but was not supplied with any copy of the bye-laws. From August 8th to August 22nd I worked without any complaint or hindrance; on the night of August 22nd the sergeant of police told me to ask my driver to go

slower round corners and also on crossing street-ends or squares. In the presence of the said sergeant I told Doig, my driver, not to exceed seven miles per hour on the straight, and not to turn corners at a greater speed than three miles per hour, and at this rate we continued to work.

To my surprise my driver was served with a summons on the night of September 2nd, this summons being made out for August 22nd and returnable for September 6th. The summons was worded as follows:—"That on the night of August 22nd, 1899, you did wilfully, wantonly, and furiously drive a motor-car, to the danger of life, limb and property, at a rate exceeding four miles per hour."

I, of course, defended the case, but to no use. On the bench were four J.Ps.—two of them drapers, one a retired painter, and one gentleman, Sir James Szlumper, late Mayor of Richmond. The first three had nothing at all to say, and before any defence was properly allowed Sir James Szlumper practically sat on us, and it was plain to be seen we should not get justice. The verdict was 10s. and costs, with a strong expression of feeling from Sir James that motor-cars were a nuisance, and that the public would do their best to put them down. Now I ask you, Is this justice? and can a bye-law, made in 1884 by a small town of then about 5,000 inhabitants, over-rule the newer laws relating to light locomotives? I was going on to say more, but—judge of my surprise again—they have now just come and served a second summons for a similar offence, *i.e.*, furiously driving a motor-car to the danger of life and limb on a certain highway at Goginian. This is a small scattered village on the mountain side, seven miles from Aberystwyth, and in this case the offence took place on September 4th, but will not be heard till the 28th inst., and then at another village nearly five miles away from where the alleged offence took place!

The question I ask is: Is it prosecution or persecution—which? I have now resided here seven years, and have done my best to improve the place in all ways, and when last summer I saw here a small, worn-out Benz car, which snorted and smoked abominably, I made up my mind to have a good car, one to be a credit to the town and owner and patrons alike. After visiting the various shows I decided on one of the Motor Manufacturing Company's chars-a-banc, to carry eight passengers. On arrival in Aberystwyth with the car I was congratulated all round, and have carried over 3,000 persons on it without complaint; and yet a narrow-minded bench bring an obsolete bye-law to bear, and convict without furnishing bye-laws or warning, and again follow up by issuing a second summons for an offence taking place seven miles away on a highway where at any time not more than twenty persons would be seen for three or four miles!

It is very annoying, and I shall be pleased to hear from you or any one else interested what are the best steps to take.

Thanking you in anticipation,

Aberystwyth,

September 9th, 1899.

I am, yours truly,

W. H. HOLLIER.

## THE LONDON ELECTRICAL CAB CO., LTD.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—It is time the shareholders in this Company were furnished with information as to its position and proposals regarding its future. I wrote to the managing director a long while ago to this effect, and received in reply an intimation that a statement would be sent to the shareholders "in a few days." After waiting about a fortnight, I again wrote (nearly three weeks ago), but have had no reply to my letter; neither have I seen any statement in *The Motor-Car Journal*. Surely it is time the shareholders took the matter up; and I trust some of the more influential members will combine and see what can be done. We were led to understand that the directors were running the small number of cabs at a profit, and the extension appeared to indicate rosy prospects, so the unexpected collapse seems to call for explanation. It would appear that the Company have splendid technical manage-

ment but is somewhat deficient in business capacity; with the two combined, success should be assured.

Apologising for troubling you with this letter, which is necessitated only by the want of attention by the officials of the Company,

Bristol, I am, yours truly,  
September 11th, 1899. A SHAREHOLDER.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### Automobile Wrecking.

THE miscreant who amuses himself by attempts to wreck trains—attempts which, unfortunately, are often only too successful—would appear to be extending the sphere of his operations.

Quite recently we have had the accident at Deauville, caused by a youth maliciously placing large stones in the road, while but for the timely discovery of the horrible contrivance on the roadside near to Cabourg some terrible mishaps would undoubtedly have occurred. And now we learn of the attempt against a well-known Grenoble automobilist, M. Duchemin, on the 3rd inst. M. Duchemin and his mother and brother were returning in an automobile from Saint Gervais to Grenoble, and when travelling at a speed of about twenty miles an hour they observed three men on the roadside ahead of them. One of these men, as the car passed him, hurled a pole nearly six feet in length at the head of M. Duchemin, who would have been seriously injured had not his mother guarded the blow. Promptly stopping the car the MM. Duchemin, aided by two cyclists who had witnessed the attack, succeeded in capturing two of the men, the actual perpetrator unfortunately making good his escape. He is, however, known, and will doubtless be speedily arrested.

### The Department Seine-et-Oise and Motor-Car Races.

THE general council of the department of Seine-et-Oise have requested M. Poirson, the préfet of the department, to prohibit automobile races taking place in his district. Monsieur Poirson has, however, since then granted authorisation for the race Paris-Boulogne, but solely on condition that during their passage through Conflans, Saint-Ouen-l'Aumône, Pontoise and Eragny the competitors rigidly observe the law. The chief engineer of the department will also attend the start on Sunday next at Saint Germain, and will permit no vehicle to compete without bearing a number conspicuously displayed.

### M. Lemaitre's New Racing Car.

WE learn on good authority that at no far distant date M. Lemaitre will be seen racing on his new Peugeot car fitted with engines developing no less than 52 h.p.!

### Recent Races.

ON Sunday last fourteen amateur motor-cyclists took part in the Paris-Péronne race. The start was effected at Saint Germain at 10.10 a.m., and the first man arrived at Péronne at 1.55.12, having thus covered the course of 180 kilometres in 3 h. 45 m. 12 s. The order was:—1, Ducom; 2, Ricard; 3, Collignon; 4, Régnard; 5, Tonrao; 6, Nevers. Ducom also won the race of 10,000 metres held on the track later in the day, being followed home by Reynier and Bathiat in the order given. On Monday Sebilleau won the Dinard-Saint-Brieuc course, the other placed men being Bertin, Berthon, and Poirel. The distance was 135 kilometres, and the winner's time 2 h. 51 m. 28 s.

### Motor-Cycle Accidents.

WHEN one considers the enormous number of motor-cycles in daily use in France it is at once evident that the sport is singularly free from accidents. Occasionally mishaps occur, however, and during the last few days two motor-cyclists have suffered rather serious injuries. At Saint-Etienne, M. Sirdey collided with an omnibus, and had both an arm and foot badly injured, while in the case of M. Godchaux, at Vittel, the unfortunate rider is suffering from a broken arm and severe contusion.

### The Hour Motor-Cycle Record.

ON the Tuesday following the Paris-Ostend race, at the Parc des Princes, Baras succeeded in beating Osmont's record for the hour, which has stood since August 5th, by 781 metres. But his glory was only short-lived, for four days later on the same track Osmont recovered his title of record man, but only by the narrow margin of 35 metres. Baras rode a Perfecta tricycle with De Dion motor and Osmont a Phébus with Aster motor. We append the two sets of figures for the purpose of comparison:—

| Kil.                 | Baras. |     |                      | Osmont. |     |
|----------------------|--------|-----|----------------------|---------|-----|
|                      | m.     | s.  |                      | m.      | s.  |
| 10                   | 9      | 24½ | ..                   | 9       | 24½ |
| 20                   | 18     | 47  | ..                   | 18      | 38  |
| 30                   | 28     | 10½ | ..                   | 28      | 7½  |
| 40                   | 37     | 44½ | ..                   | 37      | 45  |
| 50                   | 47     | 27  | ..                   | 47      | 10½ |
| 60                   | 57     | 12½ | ..                   | 56      | 34½ |
| Hour—63 kil., 622 m. |        |     | Hour—63 kil., 657 m. |         |     |

### Bordeaux-Biarritz Race.

THE committee of the Biarritz fetes have just issued particulars of the automobile race which they are organizing for September 30th and October 1st, and although somewhat far afield, we hope that the inclusion of a category for tourists may tempt some of our English "chauffeurs" to compete. We know of one English car, a 12-h.p. Daimler, which runs regularly in the delightful country surrounding Biarritz and San Sebastian, so we may possibly again see this type of car in competition with those of continental manufacture. The category for tourists is divided into three classes: A. Cars of 6 h.p. or less (1) carrying at least two persons, or (2) carrying at least four persons; B. Cars of more than 6 h.p. (1) carrying at least four persons, or (2) carrying at least six persons; C. Motor-cycles and voiturettes, weight not exceeding 400 kilos., (1) carrying one person, or (2) carrying at least two persons. For the racers provision is made for cars weighing more than 400 kilos., motor-cycles not exceeding 250 kilos. in weight, and voiturettes weighing less than 400 kilos. The course of 281 kilometres is by way of Langon, Auros, Grignals, Casteljaloux, Mont-de-Marsan, Saint-Paul-les-Dax and Bayonne, the tourists traversing the distance in two stages while the racers are required to complete in a single day. Entries should be sent to M. Henry Borotra, 4 Avenue de Grammont, Biarritz, the latest date being the 23rd instant. After the race there will be a series of automobile fetes, etc., at Biarritz.

### Nice-Puget-Théniers Race.

FAVoured by magnificent weather, this course, promoted by the Automobile Club of Nice, was decided on Sunday last. After the showers of the previous evening the roads were in excellent condition, but the competitors were somewhat impeded by the presence *en route* of a herd of cattle. The result was as follows:—Carriages: 1, Meyan, 1 h. 41 m. 12 s.; 2, Andréis, 3 h. 7 m. 10 s.; 3, Garin Clovis, 3 h. 10 m. 42 s.; 4, Laward, 3 h. 16 m. 54 s. Motor-cycles: 1, Portal, 1 h. 37 m.; 2, Garinén, 1 h. 54 m. 22 s.; 3, Girelli, 2 h. 4 m. 50 s.; 4, Régis Gayraud, 2 h. 21 m. 12 s. The distance was 65 kilometres, or 40½ miles.

### Automobiles in Italy.

At Turin there has been held recently a meeting of capitalists at which it was decided to form a company for the purpose of instituting public service of automobiles in various parts of the country.

### The Paris-Boulogne Race.

This race, which is fixed to take place on Sunday next, the 17th inst., is divided into three categories—cars, voiturettes, and motor-cycles. Amongst the entries to date are: Cars—Antony (Mors) and Girardot (Panhard); voiturettes—Popp, Dulac, Lefevre, Filtz, Debacker, V. 4, Vallée, Layeye, and Epheniere; motor-cycles—De Madec, Caron, Cormier, Gars, Marot, Bardin, Gleizes, Nicolas, Baras, Lenaux, Beconnais, Petit Jeanet, Sevette, and Ovary. The entries in the voiturette class include two “Stanley” steam cars, which are making their first appearance in a French course. Their performance will be watched with much interest, as in many quarters high opinions have been formed of their capabilities.

### The Late M. L.-V. Lockert.

We regret to learn of the death at Berck-Plage on the 6th inst. of M. Louis-Victor Lockert, the Editor of our French contemporary, *Le Chauffeur*. The deceased, who was only 56 years of age, was a well-known engineer and a member of the French Automobile Club.

### A Trip through Europe.

CORRE, the well-known Paris-Brest record-holder, started a few days ago for a long tour through Germany, Switzerland, Austria, and Italy. A curious incident happened to Corre, who is now at Milan. While going over the Simplon Valley he was arrested, for it is forbidden to cross the Simplon on a motor-car, and it was only with great difficulty that he was allowed to proceed. This long excursion is being attempted on a Renault car, described in other columns of the present issue.

### The Next French Heavy Motor-Car Competition.

THE third *poïd lourds* or heavy motor-car competition organized by the French Automobile Club is to be held from October 5th to 11th next. The competition is open for (1) vehicles capable of carrying ten passengers each with 33 kilogrammes of luggage, exclusive of the driver; (2) delivery vans capable of carrying at least a ton; and (3) vehicles capable of carrying both passengers and goods of a total minimum load of 1 ton.

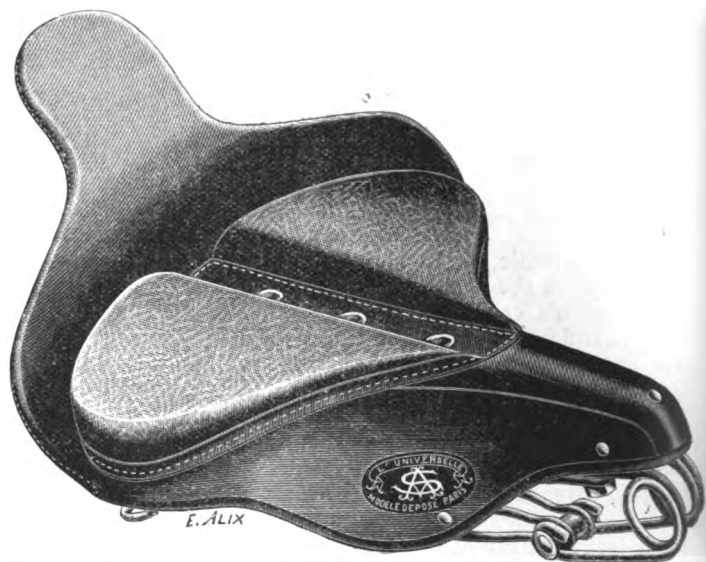
At the last meeting of the Great Marlow District Council the Public Works Committee brought forward the following resolution: “That this Council regret that cycles and motor-cars are driven a great deal too fast through the town, thereby causing danger to the inhabitants and visitors. We therefore ask the special co-operation of the police to prevent the same, and that a letter be written to Sergt. Marks embodying this resolution.” The resolution was adopted.

It appears that there are now sixteen motor-cars plying for hire in Newcastle, and that more are expected, as twenty-eight licences have been obtained from the authorities. The Watch Committee at their meeting last week agreed to recommend the Council to fix the following motor-car stands:—At the end of Blakett Street, near the Presbyterian Church; in Neville Street, between the hotel and the large lamp leading to the portico of the Central Station; on Scotswood Road at Greenhow Place; at Hamsterley Road near Northbourne Street; at the top of Westgate Hill; one on Brighton Grove, and another in Lily Avenue, Jesmond.

## THE UNIVERSAL MOTOR-TRICYCLE SADDLE.

—8—

QUITE a number of saddles specially adapted for use on motor-tricycles have lately been put on the market. Among these is the “Universal,” of which we give an illustration herewith. As will be seen the saddle gives a wide seat, while a special feature is the



provision of a support for resting the rider's back. The new saddle is of French construction, and is, we understand, being largely used by motor-cyclists in France. It is being introduced into this country by the United Motor Industries of 3 Rue Meyerbeer, Paris.

MR. C. HAMMERSLEY, cycle agent, 9 Hospital Street, Nantwich, would like to receive catalogues and price lists of horseless vehicles.

In addition to firms mentioned in our last issue we learn that the Hurtu car will be exhibited at the Dover show next week by Messrs. Marshall & Co., of Manchester.

MESSRS. HAYES AND THOMPSON, of the Griffiths Cycle Corporation, Limited, Prince of Wales Road, Norwich, have purchased a large 5½-h.p. Daimler motor-wagonette, with all the latest improvements, and are now running the same between the market place and Thorpe at a popular price. This is the first motor-car in Norwich to run for public service.

WITH reference to the De Dion motor-voiturette described in our last issue, and the statement that the United Motor Industries of Paris are introducing the car into this country, the Automobile Association of Prince's Road, W., write us to say that this is not quite exact, as Messrs. De Dion & Bouton are under contract with the Association to let them have the first voiturette which is shipped to England.

AN automobile gun-carriage, upon which a Colt automatic rapid-fire gun will be mounted, is now being constructed at the Duryea factory in Peoria, Ill. It is being made to the order of Major Davidson of the Highland Park Military Academy. The vehicle will be a three-wheeled affair, seat four men, provide for 1,000 rounds of cartridges and weigh about 1,000 lb. Major Davidson intends to run it overland to Washington, where an effort will be made to interest the U.S. army officials in the vehicle. In connection with the subject of automobile gun-carriages, we understand that the Pennington “torpedo” is being fitted with a Colt rapid-fire gun, and will be shown at Dover next week.



## THE BERLIN INTERNATIONAL MOTOR-CAR EXHIBITION.



WITH the exception of one or two firms, very little was for a long time done in connection with motor-vehicles in Germany as compared with the attention given to the movement in France and in this country. That a change has taken place within the past twelve months and that at no distant date Germany will cut a very prominent figure in the motor-car industry is evidenced by the large collection of vehicles which have been got together



FIG. 1.—THE KRIEGER VICTORIA.

by the Mid-European Motor-Car Club at the international exhibition which opened on the 3rd inst. and will remain open till the 28th inst. Applications for space came in so rapidly on the organizers that several additions to the available area originally provided for were rendered necessary. Altogether there are 101 stands, 81 of which have been allotted to German firms, 4 to Belgian firms, 13 to French, 2 to Swiss makers, and 1 to an Austrian concern. The exhibition is divided into seven different sections, viz.: Class A—Motor-cars and vehicles for the transport of persons.

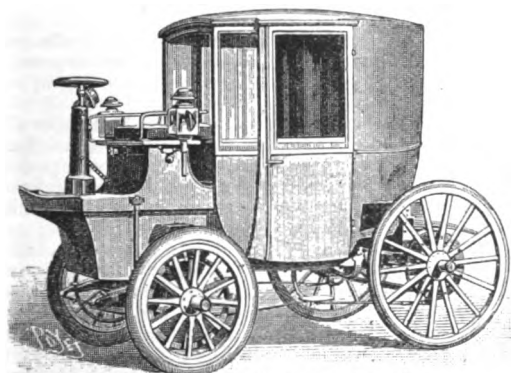


FIG. 2.—THE KRIEGER COUPÉ.

Class B—Motor-vehicles for the transport of goods. Class C—Motor-cycles and trailers. Class D—Motors and accumulators for automobiles. Class E—Frames and wheels for motor-vehicles. Class F—Miscellaneous accessories for motor-cars, tools, etc. Class G—Motor-car literature, drawings, models, etc.

We have only space to briefly refer to the many interesting exhibits, but we hope to be able to fully describe and illustrate the principal novelties in subsequent issues. A striking feature of the exhibition is the importance of the electrical vehicle section, no less than about fourteen different firms displaying vehicles of this type. The Allgemeine Betriebs Gesellschaft für Motor-Fahrzeuge, of Cologne, show three or four vehicles built on the Krieger

(French) system, these including a victoria, a closed coupé, and a delivery van. Of these we are able to illustrate two, Fig. 1 showing the "mylord" or victoria, and Fig. 2 the coupé. The general features of these vehicles are already fairly well known, but it may be briefly mentioned that in M. Krieger's system the driving power is applied to the fore-carriage by means of an electro-motor geared to each wheel. To the armature shaft of each motor is attached a pinion with helical teeth engaging with a similar wheel rigidly attached to the corresponding driving wheel. The use of an independent motor to each driving wheel enables the steering to be effected electrically. For instance, if the armature of the motor on the inside of the curve it is desired to traverse be short circuited, the fore-carriage will turn to that side. The short circuiting is brought about by means of a special commutator arranged for this purpose. The fore-carriage turns to an angle equal to that made by the steering handle. Hand-steering gear of the usual type is also fitted to the carriage, the whole electrical apparatus constituting an electric "servo-motor" of an ingenious kind. The average speed is  $11\frac{1}{2}$  miles per hour, the maximum being  $15\frac{1}{2}$  miles per hour. It is claimed that the Krieger vehicles can cover about fifty miles of average road without it being necessary to recharge the accumulator. The battery is generally composed of 44 Fulmen elements weighing 9 cwt., and storing up a useful energy of 12 kilowatts. Six different speeds, ranging from three up to  $15\frac{1}{2}$  miles per hour, are obtainable by the manipulation of the commutator or controller. The motors and the gearing are completely enclosed in a sheet

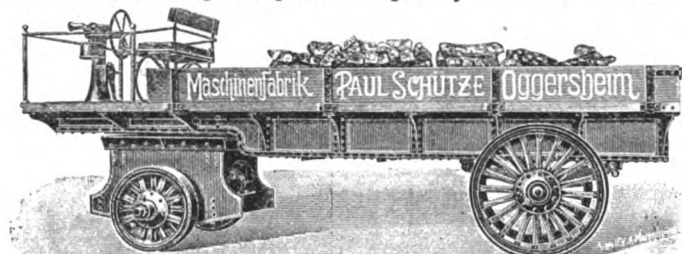


FIG. 3.—THE OGGERSHEIM 10-TON ELECTRICAL WAGON.

iron casing. The body of the vehicles is completely separated from the frame, on which it is carried by strong springs. The conductor has two brakes: one (electric) acting on the motors in front, and the other, a band brake, on the rear axle. The motors, which are of the Postel-Vinay type, develop 3 h.p. at 2,500 revolutions per minute. The wheels are all fixed with pneumatic tires.

The Electrotechnische Fabrik und Accumulatoren Bauanstalt (Hladik, Grunewaldt & Co.), of 56 Stallscheiberstrasse, Berlin, S., show an electric victoria, very much on the lines of the Oppermann vehicles, but fitted with a battery and accumulators of the firm's own special type. A large stand is that of the Gesellschaft für Verkehrsunternehmen, 43 Unter der Linden, Berlin, N.W., the exhibits including the electrical omnibus illustrated in our issue of August 11th last, an open omnibus of the same type, two electric "droschken," and an electric delivery van capable of carrying a load of one ton.

One of the most striking features of the exhibition is the electric wagon (Fig. 3) shown by the Giesserei und Maschinenfabrik Oggersheim (Paul Schütze) of Oggersheim (Pfalz), and which has a carrying capacity of no less than ten tons. The vehicle is of the front driven and steered type, the electro-motor being geared to the front axle. The battery consists of a number of "Colonia" accumulators, having a capacity of 200 ampere-hours, or sufficient, it is stated, for a run of thirty kilometres, at an average speed of eight kilometres per hour. The controller is arranged to give a large range of forward speeds, as also a reverse motion. The vehicle, whose length is nearly twenty feet, can transport its load at speeds of from six to ten kilometres per hour, according to the road traversed, and can mount—slowly, of course—gradients of 1 in 10.

(To be continued.)



## SCOTTISH NOTES.



## A Sign of the Times.

A FRIEND of mine who is greatly interested in motors had occasion recently to drive his automobile round to the stables attached to the house of a "factor" on a large estate. He was met there by the factor's coachman, who eyed him in a very surly manner. Wishing to conciliate the man, whose looks showed he bore no great love to the horseless carriage, he asked him if he had ever seen a motor-car before. The coachman admitted he had, but declared he did not like them at all, because one had been the means of "doing him out of a job." He was formerly, he said, coachman to a doctor in Cupar Angus who kept horses and traps; but who had now gone in for a motor-tricycle which undertook the work formerly done by horses, and he had consequently dismissed his driver and sold off his horses and carriages. My friend remarked he did not appear to have been long in getting another billet, and urged him, if ever he got the opportunity, to learn motor-car driving, and so have two professions at his finger-ends.

## Lord Belhaven.

ANOTHER nobleman in the West of Scotland—to wit, Lord Belhaven and Stenton—had an automobile up at his Lanarkshire estate, Wishaw House, last week, and on the trimly-kept paths of his fine estate was experiencing all the exhilarating effects of a swift motor-car ride. The roads winding in and out the beautiful policies were of varied slopes, and no more ideal spot could have been chosen for a preliminary trial. The surface was smooth, and absolutely no vibration was felt as the car literally flew at top speed up and down the leafy avenues of trees. Whether his lordship becomes an owner of an automobile or not is a moot point, but the mere fact of the ride will cause talk in likely quarters, and such talk is usually followed by some inquiries regarding the cars. It is surprising how many noblemen appear staggered when £350 is mentioned as something like the sum required to purchase a powerful car. They immediately tell you they could buy a carriage and pair of fine horses for that sum; and so they could; but they will not see that once the initial outlay is over the difference of cost is all in favour of the motor-carriage. There are no horses in the stables to eat their heads off when they have no work to do; there is no necessity when out driving to make sure that there is stabling accommodation at the journey's end; there is no need to wash down and groom horses when returning late at night from a long drive over muddy roads; there is no harness to put away. This is only mentioning a few of the advantages of the horseless carriages.

## A Flare Up.

ON Friday evening last, in Great Western Road, Glasgow, a little excitement was caused through something of the nature of "a motor-car on fire." A car in use by a commercial traveller in the employment of one of the well-known tea companies was returning from its week's work in the country, and was proceeding at a moderate rate along the Great Western Road, when the driver was suddenly startled by a hot flame bursting up through the motor cover in front of him. Evidently some of the petrol supply pipes had snapped, and the stream of petrol was easily ignited at the burners. The driver, who was a youth with a comparatively short experience, did not open the pressure cock at once, and in consequence the front of the carriage was badly burned. On examination it was found that the petrol pipe had snapped at a brazed joint immediately under the burners, with the resultant "flare up." In experienced hands such a breakage, which is of very rare occurrence, would have been of trifling moment; the pressure cock would have been

immediately opened, and the supply of petrol cut off, and nothing damaged beyond the painting slightly smoked. It is a reasonable and always a wise thing after a lot of driving over rough roads or bad streets to carefully examine the petrol connections or a motor, as naturally the vibration is somewhat trying on joints of every kind.

## Motor-Cars on the Moors.

THE advent of the Duke of Westminster's (another convert to the horseless-carriage movement) automobile on the Scottish moors has naturally given rise to considerable talk, and "society talk" is the "breath of life" to the motor-car industry so long as it is in its favour. I recently urged the claims of the motor-car in the sporting world, and it is pleasing to see that His Grace of Westminster considers it a valuable adjunct to his sporting box. No housing or feeding of horses in sheltered position (if stables are not procurable) to consider, but simply the convenience of the sportsmen. The car may be pulled up anywhere and left to its own devices while the sporting party are intent on their "bag." I hear of several cars being requisitioned for this purpose in various parts of Scotland this season, and that a number of converts to the new method of locomotion will be made in consequence is a foregone conclusion.

"BROWN HEATHER."

## MOTOR-CAR CLUB RACES.



ON Wednesday evening the above Club held a successful race meeting at the Crystal Palace, before a small but appreciative audience. The racing was of a most exciting description, those keen racers, Messrs. Edge and Jarrott, again fighting their old battles over again, with results, after one dead heat, showing Mr. Edge the victor of the one-mile handicap and Mr. Jarrott the winner of the club championship in the English record time of 8 min. 11 3-5 sec. Mr. Wridgway was unfortunate, and could not get nearer than third in each event. Mr. F. F. Wellington was judge; Mr. Coleman, timekeeper; and the meeting was under the management of the hon. secretary of the Club, Mr. F. W. Bailey. The following were the results:—

Handicap (open).—Final heat: S. F. Edge (De Dion), scratch, 1; C. Jarrott (De Dion), scratch, 2; C. G. Wridgway, 3; J. Buck, 200 yards start, 0. In the first attempt Jarrott and Edge were quickly to the fore, and, after a hard finish, the judges decided a dead heat for first place, with Wridgway third. On running off Jarrott led from the start, but Edge, making a big effort, won an exciting race by a yard. Time, 1 min. 45 2-5 sec.

Five-mile Handicap (roadster machines).—J. Buck, 280 yards start 1; M. Moyle, 280, 2; F. Eason, 1,000, 0. Eason's machine was evidently out of order, and he retired at half-distance, Buck winning by over a lap. Time, 9 min. 41 1-5 sec.

Five-mile Race (for the Championship of the Motor-Car Club).—C. Jarrott, 1; S. F. Edge, 2; C. G. Wridgway, 3. Jarrott led for the first mile, when Edge went in front, and maintained premier position up to fifty yards from the finish, where Jarrott got the best of the final struggle and won by a few inches; there was a big gap between second and third. Time, 8 min. 11 3-5 sec.

Two-mile Handicap (open).—Final heat: M. Moyle, 1,050 yards start, 1; C. Jarrott, scratch, 2; C. G. Wridgway, scratch, 3; V. Lee, 1,050, 4. Lee was well ahead two laps from the finish when something went wrong with his machine, and Moyle, having a good start, won comfortably by thirty yards; fifty yards between second and third. Time, 3 min. 21 3-5 sec.

After the racing was over a number of members and friends sat down to dinner in one of the new rooms overlooking the illuminated gardens. Mr. C. Cordingley was in the chair, and among those present were Mr. H. J. Lawson, Mr. and Mrs. Edge, Mr. and Mrs. Wridgway, Messrs. Bartleet, Napier, Munn, J. H. Smith, Wotton, F. W. Bailey, etc. A pleasant evening was spent, the toast list being commendably short, the principal one being "Success to the Motor-Car Club." Judging from the response by Messrs. Lawson and Bailey, it appears that the club is in a flourishing condition, and its programme for the future is a most ambitious one and if carried out will help to make the Club of such value that every motor-vehicle owner will desire to co-operate.

A COMPANY has just been formed in Paris (46 Rue de Provence), with a capital of £40,000, to be known as La Compagnie des Transports par Automobiles au Soudan Français.

## THE BLACKPOOL MOTOR-CAR COMPANY.

In the action of *Hamilton v. the Blackpool Motor-Car Company, Limited*, an application was made on Wednesday, in the Vacation Court, for the appointment of a receiver. Mr. Macnaghten appeared for the plaintiff, a warehouseman, of Leeds; and Mr. Story Deans opposed. The case arose out of a guarantee to the bankers given by the plaintiff, but the security was not actually given at the time—that is, in August, 1897. Shortly after the resolution for voluntary liquidation was passed the security was given. Mr. Story Deans said that the liquidator really only wanted advice as to when he should pay over the balance under the director's guarantee. He had been advised that it would be a preference. He did not object to being put on terms of keeping an account. There was £520 in hand—plenty to pay. Mr. Macnaghten agreed that the total required was only some £300, and the whole of this sum he was entitled to charge against the liquidator. He wanted to secure that the cash should be free from unsecured creditors, who had only to issue execution to the Sheriff and they could get the money. He did not wish that they should have the power to dispute his security. Mr. Justice Cozens-Hardy suggested that the money should be paid into court; that would be the least expensive course. Mr. Story Deans agreed to this, and the money was ordered to be paid into court within seven days.

## THE SALE OF MOTOR-CARS.

In the City of London Court on Wednesday, Mr. George W. Rice, cycle manufacturer, Surbiton, sued Friswell, Limited, Holborn Viaduct and New Bridge Street, E.C., to recover £49 10s. in reference to a motor-car. The plaintiff bought a Benz Ideal motor-car from the defendants, and paid £153 for it, intending to let it out on hire for £3 10s. a week. After he had had it for a month one of the tires bulged, and rendered the car useless. The plaintiff now wanted the defendants to pay £7 10s. for a new tire and £3 10s. a week for twelve weeks for the loss of hire money. The defence was that the car could not have had fair wear and tear; but the defendants' counsel first took a legal objection that the plaintiff could not recover because, under the Sale of Goods Act, there was no implied warranty in respect of patent goods or those having a trade mark description such as the car in question. Mr. Kays, plaintiff's counsel, contended that the goods must be of merchantable quality, which they were not. Mr. Commissioner Kerr said the plaintiff could not recover. He had had inspection of the car, and the law gave him no remedy, even if he had a grievance. The plaintiff must pay the costs of the litigation.

## THE HACKNEY VESTRY AND MOTOR-CARS.

At a meeting of the Hackney Vestry on Wednesday evening, Mr. G. Yarrow Baldock moved as follows:—"That, in consideration of the large and continually increasing amounts paid by the Vestry for horse hire and cartage, and with a view to facilitate the work of 'slopping and dusting' being undertaken entirely by the Vestry without the intervention of a contractor, it be referred to the General Purposes Committee and to the Public Health Committee jointly to report as early as may be—(a) As to the practicability and possible economy of employing for the purposes of the Vestry carts and vans driven by electrical or other automatic motors. (b) As to the advisability of fitting suitable motors to the water carts and other vehicles—all or any—at present the property of the Vestry. (c) As to the advisability of the purchase by the Vestry, for experimental purposes, of a motor-van or vans of the most approved pattern designed, for the collection of refuse and scavenging, either or both. And, further, that the said Joint Committee be and is hereby authorised to obtain all such necessary estimates, plans, drawings, and specifications as will enable the fullest possible information (specially as to probable capital outlay and cost of maintenance) being embodied in the report for the guidance of the Vestry."

In moving this Mr. Baldock said it had been admitted at a previous meeting that for a comparatively small sum they could have motors fitted to run the water carts, provided that there were the proper works in existence to supply the necessary electric power. Other municipalities throughout the country had adopted motors with marked success, and it was to be hoped that Hackney would not be behind the age in this respect. It was at least their duty to see if they could save money. They would in due course have their works for supplying electric light, and during the day the plant could be used for generating the necessary power for the motors.

Mr. Denham seconded the motion, because he had great sympathy with the general idea and believed that in a few years a good deal of work would be done by motors very cheaply and expeditiously.

Finally, Mr. Baldock accepted a suggestion made by Mr. Grant to refer the question to a joint committee consisting of four members from each of the following committees: General Purposes, Public Health, and Electric Lighting; the same to report to the Vestry on the subject.

## EXCESSIVE SPEED OF A MOTOR-CAR.

MR. BERTIE MILLER was summoned at Yarmouth last week for driving his motor-car at improper speed. Sergeant Mason said that on Sunday afternoon defendant left the Britannia Pier at 4.9 p.m.; he passed the Wellington at 4.12, went beyond the barrack wall, returned to the

Wellington Pier at 4.17, and was back to the Britannia Pier at 4.20 p.m., which would give a speed of over thirteen miles per hour. Defendant denied that he travelled at that speed, and said he could not go from pier to pier in three minutes. The Chief Constable said he was on the Wellington Pier and saw defendant pass at a furious rate. Police-Constable Fish said he and Sergeant Mason were on the Wellington Pier, and while he looked through a pair of glasses Mason took the time. Police-Constable Brown said he was at the foot of the Britannia Pier, and saw defendant start at 4.9 p.m. He ran on to the Britannia Pier and saw defendant pass the Wellington Pier. There was a great many people about, and defendant returned in eleven minutes. Defendant said it was no use calling witnesses, but he denied that he could do the journey in eleven minutes. He was fined 40s. and costs, or one month.

## THE ALTRINCHAM MOTOR-CAR ACCIDENT.

A COUPLE of months ago George Barnes, employed by Messrs. Bond and Co., soap manufacturers, Salford, was summoned for furiously driving a motor-car at Altrincham. Owing to his having met with serious injuries the hearing of the summons was adjourned. Superintendent O'Kell, at the Altrincham Petty Sessions on Monday, asked that the summons might be withdrawn, as the man was still under medical treatment. The application was allowed.

## FURIOUSLY DRIVING A MOTOR-CAR.

At Eastbourne, last week, Mr. Percy Brennan was charged with furiously driving a motor-car in Cavendish-place on September 6th. George Stockman stated that at noon on the day in question, he saw the defendant coming with the car over the Cavendish Place Bridge. He was travelling at the rate of twenty miles an hour. He himself owned a motor-car, and therefore understood them. The defendant could not have stopped the car in 100 yards. Defendant asserted that he could have pulled up in two yards. Mr. Stockman observed that defendant travelled 150 yards before he could pull up. David Hollands corroborated. Defendant denied the possibility of his having travelled at a rate of twenty miles an hour. A fine of 10s. and costs was, however, imposed.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

TRICYCLE FOR SALE at a low figure. Practically new and latest pattern; genuine De Dion throughout; with all accessories; can be seen in London.—Box 72, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

TWO MOTOR DELIVERY VANS, in good condition; can be altered into wagonettes; one £70 and one £125.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

MOTOR-QUADRICYCLE, interchangeable to tricycle, by De Dion and Bouton, very little used, exceptional bargain, in grand running order; price £67 10s.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-WAGONETTE, 5½ h.p., grand carriage, in perfect condition, new tires, repainted and upholstered, to carry four or six, free trial to buyers; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-WAGONETTE, 5½ h.p., to carry eight passengers besides driver; geared low for hill climbing, suitable for passenger service, in perfect running order, hardly been used; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

BENZ INTERNATIONAL, to carry three; beautifully upholstered, very powerful, all latest improvements, in grand order; price £120.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DE DION TRICYCLES (two).—1½ h.p.; electric ignition; in first-class order; £35. Also Werner Bicycle, in running order, £20.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

MORS CAR to be Sold.—Very fast; splendid condition; 8 h.p.; to carry eight persons.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

WELLINGTON'S "MOTOR-CAR REGISTER AND ADVERTISER" posted free to any address; send post card for copy to Frank F. Wellington, Proprietor, 36 St. George's Square, Regent's Park, N.W.

WANTED.—Good second-hand Trailer, to suit De Dion Tricycle.—Full particulars to Aalbrecht & Co., Ramsgate.

NEW GENUINE MOTOR-TRICYCLE by De Dion & Bouton; latest 1½ h.p., guaranteed perfect order; can be seen any day.—Paris Singer, 165 Manor Street, Clapham, S.W.

COVENTRY MOTETTE for Sale, in splendid working order. New 3½ cylinder. What offers?—Grose, Limited, Northampton.

FOR HIRE.—Daimler Wagonette; seats seven (besides driver); by day, week, etc.; or as delivery van.—For particulars apply to Frank Sheppard, 122 Merton Road, Wandsworth, S.W.

SECOND-HAND BENZ CARS for Sale from £100 upwards; great reductions.—Speedwell Co., 83 Oxford Street, Reading.

BENZ IDEAL CAR for Sale; 3 h.p.; in thorough going order; going in for larger car.—Free trial at 12 The Avenue, West Ealing, Middlesex.

PANHARD-LEVIASSOR PHÆTON for Sale; property of a gentleman. Latest improvements; very pretty carriage; perfect condition. £400.—Address, B. B., c/o Goss, 460 Oxford Street.

WANTED.—Second-hand Motor-Tricycle or Voiturette, good condition, but cheap. No. 66, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

CAPABLE MECHANIC, 28 (abstainer), wants Berth in Motor trade; would drive; low wages to commence.—Address, Chesterfield, *Motor-Car Journal* Office, 39-40 Shoe Lane, London, E.C.

BACK NUMBERS "MOTOR-CAR JOURNAL."—Numbers 1 and 4 are out of print. Of other back numbers we have but a few left. Those desirous of completing their files should make immediate application for missing copies. Usual price, 1d.; post free 1½d. or through any news-agent.—Cordingley & Co., Proprietors, 39-40 Shoe Lane, E.C.

GIBBONS BROS. have been appointed Representatives of the Butler Motor Co., of Paris, and the new model 2½-h.p. Motor Tricycle can be seen at the Dover Show.—Note address: Gibbons Bros., Belmont, Surrey.

GIBBONS BROS. beg to inform you that the Butler Tricycle will pull a trailer with two people in it at 20 to 25 miles an hour. See it at the Dover Show and try for yourselves.—Gibbons Bros., Belmont, Surrey.

BUTLER TRICYCLES can be had with detachable front seat, with two extra wheels to convert into Quadricycle; also Quadricycle not convertible. Plenty of power, reasonable in price.—See samples at Gibbons Bros., Belmont, Surrey.

LOOK OUT for the Butler Motors, enamelled in black and red, at the Dover Show.—Gibbons Bros., Belmont, Surrey.

TO AGENTS.—Write to GIBBONS BROS. for quotations for Butler Tricycles, and immediately you will want our agency. Our Tricycles only want to be shown, you will then find that they sell themselves.

GIBBONS BROS. supply two-speed gears, to fit to other makers' Tricycles that haven't much power in them. You don't want them with a Butler.

DO YOU WANT TO BUILD YOUR OWN TRICYCLES? Because we supply component parts. Everything complete except tires and rims. All you have to do is to build frame and wheels, fit on motor and accessories and your own transfer.—Gibbons Bros., Belmont, Surrey.

GIBBONS BROS. are also representing Mr. J. BURNS, of Berners Street, W., and will stock a full line of their very highest grade Electrical Equipments for Tricycles and Cars.

GIBBONS BROS. supply Reserve Spirit Tanks, with separate compartment for lubricating oil, complete with tubes to carburettor and crank chamber; Dry Batteries, Accumulators, Volt-meters, Ampère-meters, Coils, and Sparking Plugs.

ARE YOU A GREAT DISTANCE FROM LONDON? Because we will endeavour to call on you, or send you name of nearest agent.—Gibbons Bros., Belmont, Surrey.

MR. W. J. GIBBONS, of GIBBONS BROS., will be calling at all towns on the South Coast on his BUTLER Tricycle pulling a trailer, and showing complete set of Motor-Tricycle Components, commencing directly after the Dover Show. Write and ask him to call on you.

GIBBONS BROS.' preliminary Catalogue is now out. Write for it and if you don't see what you want, let us know, and we will quote by return.

PARTNERSHIP.—Practical Engineer, having designed and made improved Motor-Tricycle, which can be sold at large profit, desires to meet with Partner or Capitalist with not less than £1,500 to start manufacturing; or would arrange with firm to manufacture on royalty. Machine well reviewed; several orders and inquiries. Good opportunity of forming Syndicate.—For appointment, write Box 31, J. E. May, Advertisement Agent, 68 Fleet Street.

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797. 24

NORTH OF ENGLAND AGENTS for Phébus-Aster Motors, best Motor Accessories, Horns, Toolbags, Ignition Plugs, Valves, Piston Rings, etc. Repairs thoroughly done.—J. A. Bennett & Co., 3 Exchange Arcade, St. Mary's Gate, Manchester.

HIRE-PURCHASE OF CARS.—The Midland Motor Agency, Acocks Green, Birmingham, can supply Motor-Cars and Cycles of any description, for cash, or on easy terms arranged to suit individual customers.

"THE MOTOR-CAR MANUAL," by R. Moffat Ford, deals with every type of oil motor in a plain and simple manner, for lay readers. How to buy a motor-car, and how to treat it when bought. Why is a motor when it stops? How to make an excursion, and so forth. Treats fully of Daimler, De Dion, Benz, Bollée, Panhard, Mors, Peugeot, and other motors. Post free in exchange for Postal Order value 2s. 6d.—The Motor-Car Co., 168 Shaftesbury Avenue, London, W.C. 26-39

# THE Motor-Car Journal.

Vol. I.]

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## COMMENTS.



LAST week's *Spectator* contained an article on "The Resurrection of the Road" which must be welcome as one of the most sensible and suggestive utterances on the subject of automobilism that have lately appeared in English journals. Recognising that "carriages can be built which will travel along the roads with safety

and comfort, and carrying heavy loads," the *Spectator* sees "that the rise of the motor-car must restore the use of the roads." Till now very little general interest has been taken in the roadways of this country, and the advent of cycling, while it necessitated some improvements on the surface, had no effect upon the widening and straightening of some of the main thoroughfares. The improvement of the road simultaneously with the development of automobilism will restore the prosperity of many an old village inn; while the adoption of motor-vehicles for the marketing of produce should lead to increased prosperity among small agriculturists. Around London, too, there is need for great reform. Almost all the high roads out of the Metropolis run through a narrow neck perpetually blocked by traffic. Our contemporary instances Hammersmith Broadway, into which the Hammersmith Road, the Hounslow Road and other great thoroughfares converge. Mention might also be made of the narrow streets leading from Aldgate into the City, through which pours the traffic from several districts of Eastern London. If automobiles become popular with the people these narrow streets will have to be widened, for it is not wholly visionary to think of the time when the dwellers in particular streets will be taken to town in one motor-vehicle calling for its passengers at successive houses.

### Doctors and Automobiles.

WISER than the *British Medical Journal*, many doctors have ordered their automobiles before reading the advice of that journal in its last issue "to wait for further developments."

Our contemporary recognises the advantages of mechanical locomotion on ordinary roads, and realises how strongly its merits should appeal to medical men; but "it must be remembered that they have a fatal facility for breaking down at the wrong or most critical moment," while "a motor-car, we are quite sure, would not be looked on with much favour in a hunting country, where a large proportion of better-class patients would be sporting people, who would certainly look askance on any one who did not pay due reverence to the fetish of horseflesh." To the latter point, the fact that many sporting men and lovers of horses are most enthusiastic automobilists should be sufficient answer; and as to breaking down at the wrong time, does not that happen to 99 per cent. of the doctors' patients, and even in the case of horses—let alone the mechanical, unthinking motor-car? But we will not be hard upon the

*British Medical Journal*, for it furnishes some excellent reasons why doctors should find the motor-car a boon.

### Horse v. Motor-car.

"IN many country practices," says our medical contemporary, "a doctor is obliged to keep three or four horses at least, besides traps, and this is a constant drain on his income, whereas one motor-car will suffice for all his work, is always ready at a moment's notice, and costs next to nothing to keep. Take the case of a doctor in the country with a large and scattered practice: four to six horses, a couple of men, stabling, shoeing, forage, wages, repairs, vets' bills, etc., will cost him at least £300 a year. A motor-car, on the other hand, after the first initial expense (they vary in price from 150 to 300 guineas) only requires the services of a lad to keep it clean, and it will cost considerably under £100 a year, including wages, repairs, and the fuel or motor power required. All country practitioners have experienced the worry of an urgent night call and the time wasted before the trap makes its appearance at the door. With a motor-car the doctor goes direct to the stable, or wherever he keeps his conveyance, no assistance is required, he applies a light or turns a lever as the case may be, sets the machinery in motion, and within a very few minutes of his first receiving the summons is off on his journey at full speed."

### Motor-Cars Wanted in Brighton.

A WRITER in the *Brighton Guardian* tells, with great satisfaction, his experience of the motor-car service at Newcastle-on-Tyne, and wonders why Brighton is so laggard in this respect. It appears the local authorities have "repeatedly laid it down that a 'satisfactory' motor-car could not be got in the town"—a statement that seems to lack either a want of enterprise or of observation. At such a place as Brighton a motor-car service should be as important a feature as bathing machines.

### Extensions Wanted.

ALTHOUGH it was imagined in some quarters that the difficulty in connection with motor-car services would be the lack of passengers, that has not proved to be the case. In fact, experience has shown the reverse to be true, and already grumblers have appeared who complain of the caterers for public conveyance by motor-car because they do not extend their system at once. At Sunderland, for instance, the local motor-car company has been told that "there are plenty of routes open to them which they have not yet exploited." So popular is the new system of getting to town that those who cannot avail themselves of it are envious of those who can.

### A Southport- Built Motor-Car.

WE learn from a correspondent that a new light motor-car is in course of construction at the works of Mr. Oliverson's, Queen's Road, Southport. The vehicle will be provided with a petroleum-spirit motor with water-jacket and electrical ignition. A new variable-speed gear is

being adopted, the latter being Mr. Oliverson's own design. The car is constructed to carry two persons, and weighs under 7 cwt. It is fitted with ball bearings throughout, not only in respect to the wheels, but also in regard to the shafting, and a feature of the car is the fact that it is supplied with a special water-cooler, which enables the car to travel 200 miles without changing the water.

#### Another Parliamentary Automobilist.

THE Hon. A. J. Balfour, M.P., has been displaying a keen interest in the motor-car. While staying at Whittinghame recently he was seen out driving on several occasions in an automobile in various parts of East Lothian. When at North Berwick also, whither his love of golf had drawn him, as likewise a host of other political and social celebrities, he engaged in animated conversation with the driver of one of the Edinburgh Autocar Co.'s vehicles, and asked a great many very pertinent questions regarding the automobile. We wonder if he will be the next M.P. to possess a motor-car.

#### Automobiles for Municipal Work.

APART from the increasing popularity of motor-vehicles from a sporting point of view, the advantages of self-propelled vehicles are already receiving the attention of municipal bodies in various parts of the country. Only last week we dealt with the discussion which took place at a meeting of the Hackney Vestry regarding the employment "for the purpose of the Vestry carts and vans driven by electrical or other automatic motors." The Chiswick Vestry led the way in this country in the adoption of motor-vehicles for the removal of dust from houses, and also for the removal of road scrapings. The vehicles first started about two years ago, and, as stated by Mr. J. I. Thornycroft in the course of his paper at the British Association this week, they have since been in continuous daily service. In connection with this matter it is interesting to note that at the recent Congress of the Cleansing Superintendents of Great Britain, at Glasgow, a resolution was unanimously passed to the effect that "in view of the great improvement recently demonstrated by the trials held at Liverpool and elsewhere, this meeting of the Cleansing Superintendents of Great Britain recommend that all municipal, urban, and other authorities shall encourage the introduction of motor-vehicles for street cleansing operations."

#### At the British Association.

ONE of the papers read before the Mechanical Section of the British Association was by Mr. J. I. Thornycroft, F.R.S., on "Recent Experiences with Steam on Common Roads." As we propose to publish this paper in the *Journal* there is little necessity for detailed comment, save to congratulate Mr. Thornycroft on provoking a very useful and animated discussion. Sir Frederick Bramwell referred to the earlier inventors and said he thought that of the various methods of propulsion now being tried steam would survive the competition. Mr. W. W. Beaumont advocated that automobilists should have the same reasonable liberty of judgment as drivers of horse-drawn vehicles in regard to speed and weight, and pointed to the necessity of legislation regulating the width of tires by the total load carried. In reply to this, Sir Alexander Binnie, engineer to the L.C.C., pointed out that though the London streets would stand very heavy loads the bridges and culverts on country roads were often not capable of carrying excessive weights. During the further discussion it was asked whether it was practicable to fit road motor-vehicles with rubber tires. Mr. Thornycroft, in the course of his reply, admitted that rubber tires were very desirable, but the present cost of rubber precluded their use for heavy vehicles. Iron or steel tires might suffice for goods vehicles going at a moderate speed; for passengers' conveyance or fast motors rubber tires were very desirable.

#### Motor-Cars in the German Army.

IN our last issue reference was made to the fact that a number of motor-cars and cycles had figured in the recent German military manœuvres. According to the daily papers the military authorities studying this question are fully convinced that the introduction of motor-vehicles will do much to revolutionise the transport and train services. During the manœuvres eight vehicles of various types were, it is reported, subjected to most trying experiments both in day and night service. Although the weather was bad and the roads deeply rutted, the machines worked perfectly. They were chiefly employed in postal service and for carrying packages. It is said that the Kaiser takes the greatest interest in this new development. A number of officers are to be set apart to study motor-vehicles and impart instruction to their subordinates. It is to be trusted that our military authorities will be induced to reconsider their recent decision not to permit experiments of motor-vehicles as an adjunct to the military equipment of the British army.

#### Ladies and the Automobile Club.

Do Mr. W. T. Stead and his young ladies want to run the universe? We all know how the enterprising journalist has run agitation after agitation these last few years, booming many good and useful things in his own inimitable style. But why his "sanctum" should be made the place of meeting for the ladies who motor we know not. And yet Miss N. G. Bacon writes to the *Daily Chronicle* to declare that "As ladies are not permitted to become members of the Automobile Club of Great Britain, the formation of a 'Mowbray House Automobile Club' has been suggested, and a meeting will be held in Mr. Stead's sanctum at an early date to discuss the matter. An invitation to attend the preliminary meeting will be forwarded to all ladies interested in motors and motoring on receipt of stamped addressed envelope." And then, after quoting the rules of the Automobile Club as to ladies, she asserts: "Surely the time has come for ladies in this as in other matters to act for themselves." All the valiant men motorists will quake and quiver at the thought of the organized band of lady motorists meeting in the sanctum of Mr. Stead to concoct some plan of campaign against the presumption of the Automobile Club in only permitting ladies on its premises from 3 to 6 p.m. What will they do? Perhaps attempt to effect an entrance during the mysterious hour of dinner, in which case we suggest that the steward should be provided with a "hooter." It would scare them, and perhaps prevent a second endeavour of the ladies to be obtrusive.

#### Partinium—a New Aluminium Alloy.

SOME weeks ago we referred to the fact that Messrs. De Dion & Bouton, of Puteaux, France, are having built in Paris a new "body" for a twenty-four seated steam omnibus entirely constructed of "partinium." In giving publicity to the same paragraph, a contemporary in its last issue raises the query: "Should not this be platinum?"—being apparently unaware of the fact that partinium is used very largely by motor-car builders in France in place of aluminium, it being very much cheaper than this metal, is nearly as light, and possesses greater resistive qualities. Partinium is, as a matter of fact, an alloy of aluminium and tungsten, the percentage of each being varied as desired. Cast partinium has a specific gravity of 2.89; in the rolled form it is 3.09, the elongation varying from 6 to 8 per cent, while its tractive resistance is given as 32 to 37 kilogrammes per square millimetre. It is interesting to note that the "body" of M. Jenatzy's well-known record-breaking car "La Jamais Contente" is constructed of the new alloy, which is being employed for a variety of other purposes by automobile builders on the Continent. Messrs. De Dion & Bouton



are using it to a large extent both for the oil-containing crank case in their tricycle-motors and for gear cases in their large steam vehicles. It is satisfactory to note that the advantages of the new alloy are receiving the attention of motor-car builders in this country; indeed, it was the head of a large English automobile firm which drew our attention to the query raised in our contemporary.

#### Motor-Cars on Tees-side.

WE referred in our issue of the 1st inst. to the proposals of a new concern—the North York and South Durham Motor-Car and Bungalow Syndicate—to start a series of motor-car services in that district. The company has, we learn, already got to work. For the last fortnight a service of cars to hold twelve persons has been running between Middlesborough and Redcar, the journey each way taking about twenty-five minutes, and the fare being less than that charged by the railway company. It is anticipated that a complete service will be organized by next season.

#### The Automobile Situation.

UNDER this comprehensive title Mr. Hiram Percy Maxim contributes an article to the current number of *Cassier's Magazine* which looks at the matter through American spectacles, although it is plentifully illustrated with French and English as well as Yankee cars. "It is possible to buy to-day in America," says Mr. Maxim, "an electric carriage which will carry either two or four passengers a distance of thirty miles, over ordinary grades, at an average speed of eleven miles an hour, on one charge of its storage battery." Not only in America but also in Europe can this be done. However well acquainted with American automobiles the writer may be, he is clearly not quite up to date with regard to those of other countries, for the firm of Panhard-Levassor is referred to as Perin, Panhard & Co., its old designation, and last year's steam wagon of the Steam Carriage and Wagon Co., Ltd., is illustrated as a type of the present "situation."

#### The Royal Institute of Public Health and its Motor-Car Exhibition.

WE regret to learn that the efforts of the officials connected with the Congress of the Royal Institute of Public Health to organize a motor-car exhibition in connection therewith have met with very little success, the only vehicle putting in an appearance at Blackpool at the opening of the congress yesterday (Thursday) being a Coulthard steam wagon, fitted with a tipping body for dust and refuse removal purposes. When the announcement of the exhibition was first made we expressed our doubts as to its value from a business point of view, which doubts have apparently been shared by the various motor-car building concerns in this country.

#### Motor-cars in the Isle of Man.

WE recently referred to the arrival of a motor-chairs-a-banc at Douglas. During the past few weeks the car has run trips morning and afternoon from Douglas, carrying full loads every journey to Peel or Glen Helen for the popular 2s. 6d., return fare. The car so far has, we are glad to learn, given every satisfaction. Its reception, from all accounts, by the car proprietors on the front has not been altogether favourable, and a report that the passengers had to get out and push the car up the hills possibly emanated from that quarter. We need hardly say the report was absolutely groundless, as the car has taken all the hills in capital style, and when it comes to a bit of level road or down hill horses are quickly left behind. If all landaus and traps on the front could be run without horses it would, remarks the *Isle of Man Times*, very much improve the promenade from a sanitary point of view; and the time may now, perhaps, be said to be within a measurable distance when this change will be effected.

#### A Motor Fire Engine.

WE have for some time been looking for the introduction of a motor fire engine by some enterprising British concern. The blank has now been filled by Messrs. Merryweather & Sons, of Greenwich, who have just completed a self-propelled steam fire engine. The vehicle, which is intended for use in India, resembles in general appearance an ordinary fire engine; it is, however, fitted with an arrangement of spur gearing which enables the engine to drive an intermediate shaft when put out of gear with the fire pumps. This countershaft is fitted with balance gear, and drives the rear wheels by means of strong pitch chains. The steering is effected by means of a hand wheel actuating a vertical shaft which is connected to the fore carriage, a small sprocket wheel and roller chain being provided for this purpose. The pumps are capable of delivering 300 gallons per minute, and of throwing a jet to a height of 150 feet. When the fire engine was tested in London it was found that such hills as Blackheath could be mounted at a speed of ten miles per hour, while upon the comparatively level roads over Blackheath to Shooter's Hill a speed of from fifteen to twenty miles per hour could be easily maintained. The steering wheel, steam regulating lever, reversing lever, and brake are all within easy reach of the driver sitting on the off side on the front, and an auxiliary brake is provided to work with a



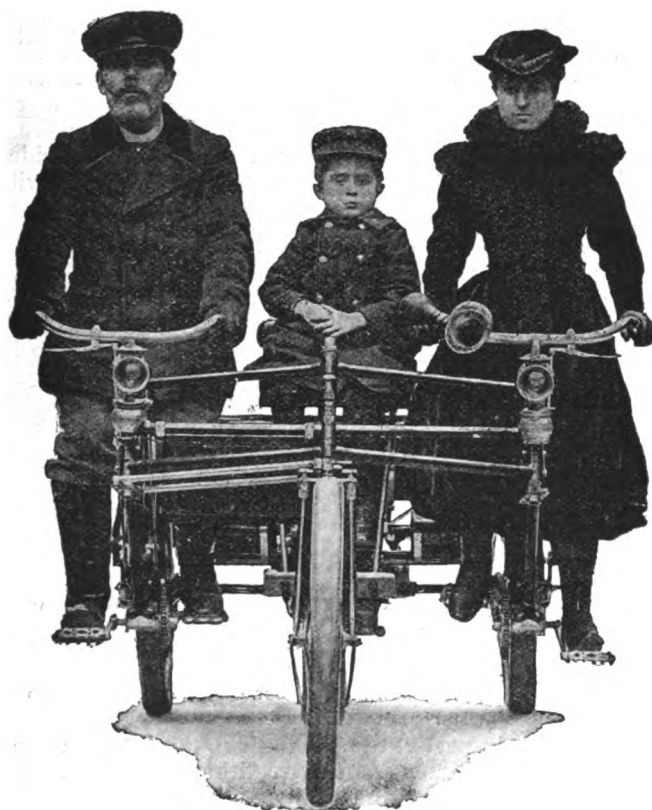
MR. DAN ALBONE ON HIS MOTOR-CAR AT SUTTON, AN OLD PICTURESQUE VILLAGE NEAR BIGGLESWADE.

screw and hand wheel at the back. The machine is arranged to carry the usual complements of firemen, hose and gear, and the entire weight when fully equipped with fuel, coal, water, and the firemen is under three tons. The boiler is of the same pattern as that used in the construction of the engines supplied by this firm for the Metropolitan Fire Brigade. Steam can be raised from cold water to working pressure in six minutes from time of applying the match to the fire; but if a heater with self-locking couplings and automatic disconnection is fitted in the engine house, steam can be raised in so short a time that the engine can start at full speed from the fire station in from three to four minutes from time of receiving the call. When the scene of conflagration has been reached the fire pumps can be at once thrown into gear. In connection with this question of automobile fire engines, we may mention that, at the instigation of the Leicester fire brigade authorities, the Daimler Motor Co. has undertaken to turn out a fire service wagon which will be ready to start on its journey within thirty-two seconds from the time of call. Other fire brigade authorities will watch the Leicester experiment with considerable interest.

MESSRS. KESTERTON'S, LTD., the well-known coach-builders of Long Acre, W.C., have taken up an agency for the sale of the "Marshall-Hurtu" car, and will always have one in stock to show customers.

## THE "INSEPARABLE" THREE-SEATED MOTOR-TRICYCLE.

AN outcome of the increasing popularity of motor-cycles and motor-cycling in France is the "Inseparable" two or three-seated motor-tricycle made by M. P. Dorrigny, of 28 Rue Leseur, Paris, and illustrated herewith. The frame of the machine consists practically of two ordinary safety bicycles coupled together, the two front wheels being cut away and replaced by a single front wheel, which acts as the steerer, the frame being strongly braced with tubing. In reality, the machine is a tricycle, with a differential driving axle placed at back and fitted with a  $2\frac{1}{4}$ -h.p. De Dion motor. The feature of the machine is that the frame each side is made on the lady bicycle style, this being done (1) in order to facilitate dismounting, (2) so that a lady can mount in ordinary bicycle costume without looking unsightly in the least.



The two saddles are located directly above the rear wheels, while a small seat can be fitted in the centre of the two riders, as shown in the illustration, to seat a child in perfect safety, or for the conveyance of luggage.

The manipulation for the mixture of gas, carburation, etc., is exactly on the same principle as the "De Dion" tricycle, the levers being arranged so that they are controlled by the person sitting on the right. Two powerful band brakes are fitted, acting upon the differential gear and back driving axle, but one alone is claimed to be sufficient to pull the machine up in two yards. The speed obtained on the level is about eighteen miles per hour. On moderate hills pedalling is said to be absolutely unnecessary, but on very steep grades both riders can assist the machine by gentle pedalling. The machine is not intended for racing purposes and is therefore not geared up high; it is described as being a vehicle for family use, for short, quiet spins and excursions. The width of the machine is about 3 ft.

Our contemporary, *Industries and Iron*, which devotes space every week to motor-car matters, has been reduced in price, while all its interesting features have been retained. It is now published at 4d.; annual subscription, 15s.

## JOTTINGS BY A WORLDLING.



As I was driving near Richmond the other day a hen rushed from the side of the road in among the wheels of my quadricycle. Result: death of the bird and yells from the occupant of my front seat. I stopped, and an ignoble varlet came out of a neighbouring house and said concisely, "That hen was

worth half a crown," without the usual accompaniment of blasphemy. This so astonished me that I paid him without a murmur. But should I have done so? People have no right to allow fowls suffering from homicidal mania to wander on the Queen's highways without a guardian.

BUT, to be more serious, the hen is rather dangerous to the tricycle or light voiturette, as it is a stupid creature that rushes any way when frightened, as soon into the object it fears as away from it. And a hen in among one's wheels and mechanism is most undesirable. I had a curious experience of this nature in the spring between Castellane and Digne. We were going at full pace round one of the spiral roads which wind up and down the Alps, when suddenly an old ram who was standing by the way side *butted* at us and tried to toss 500 kilogrammes of motor-car over the precipice—happily without success. The wheels broke its spine, but the shock threw us on to a heap of flints, and "pop!" went one of the back tires. My "bag" is now one dog, one ram, one duck, two lizards, one hen, and the tail feathers of a pigeon that I dragged from its owner as it "got up" by my side one day on the Corniche Road—"un de ces pauvres pigeons qui fréquentent Monte Carlo."

I WISH I had been able to go on the Automobile Club's trip to Folkestone. I should have liked to see the show at Dover, and the trip across the Channel, for the arrival of the Paris-Boulogne race must have been most interesting. I wonder if it occurred to any body to go out to Pont de Briques, the crucial point of the run from the hill-climbing point of view. There is a stupendous rise there with an ideal down run into the town, past "Johnny" Pourre's pen factory.

MR. NORMAN SINCLAIR is one of the latest proselytes to the creed of automobilism. He tells me that the roads in his county—Caithness-shire—are perfect for motoring. His brother's (Sir John) house is only fifteen miles from John o' Groats.

THE United States Motor-Vehicle Co. has been incorporated under New Jersey laws with £300,000 capital, and has purchased valuable patents on both gasoline and electric systems. The Company will manufacture electric and hydro-carbon vehicles of new design for both pleasure and business purposes. They have purchased T. W. McCullough's petroleum-spirit motor and motor-vehicle patents (Back Bay Cycle and Motor Co., Boston, Mass.), Harry E. Dey's electric system and others.

THE Anglo-American Oil Company, Ltd., of 22 Billiter Street, London, E.C., send us a copy of their new pamphlet relating to Pratt's motor-car spirit now so largely used by automobilists. The list of agents stocking spirit has been revised and enlarged, it now extending to eight pages. The Company are about to issue a useful small waistcoat pocket list of agents all over the country stocking Pratt's motor-car spirit. We are glad to learn from the Company that their improved system of spirit distribution in cases of one or two-gallon cans has been most favourably received by the owners of motor-cars.

# The Paris-Boulogne Race.

(From Our Own Correspondent).

CONTESTED on Sunday last over a route of 230 kilometres, this race, as compared with some of its predecessors, was patronised by comparatively few racing men, and it is evident that many automobilists consider they have competed in sufficient *courses* for this season, and intend to take a rest. The category for two-seated motor-cycles received a fair number of entries (forty-three), and no less than thirty-four competitors presented themselves at the starting *contrôle*, situated in the route des Loges at Saint-Germain. They were duly despatched at 8.40 a.m. Twenty minutes later the twelve competing

cycle at 2.3 p.m. He was followed by M. Girardot, on a Panhard car, at 2.17. This car arrived minus a tire on one of the hind wheels, having traversed 40 kilometres in that condition. This was a magnificent performance, being only one hour more than the express trains take to cover the same distance. The third vehicle, driven by M. Levegh, arrived two minutes later, and others continued arriving at intervals during the afternoon. They all came with a tremendous rush down a steep incline and pulled up sharp at the winning-post. There was an enormous crowd stretching for over a mile beyond the post, the people being kept in check



VOITURETTES LINED UP AT STARTING POINT.



"VOITURES" LINED UP AT STARTING POINT.



EN ROUTE—GIRARDOT LEADS, FOLLOWED BY LEVEGH.



THE HON. C. S. ROLLS LEAVES TO OBTAIN WATER.

small cars, which included a couple of Stanley steam vehicles, received the signal to start, and although one or two of them showed signs of "peevishness" even at this initial stage, they were eventually persuaded by their tamers—conductors, I mean—to join their companions and amble down the road to the accompaniment of a noise and clatter considerably greater than that produced by a fleet of large racers. At ten o'clock precisely MM. Girardot, Levegh, Rolls, and Broc, the sole representatives of the big cars, disappeared down the road, and at the Paris end of the *course* all was finished. The Hon. J. Scott Montagu did not start owing to an accident. M. Baras was the winner, arriving with his wife on a motor-

by the 8th Regiment of Infantry, which mounted guard on either side of the road.

The ultimate classification at Boulogne was as follows:—  
(1) Motor-Cycles—1, Baras, 5 h. 23 m. 17 s.; 2, Demester, 6 h. 13 m. 20 s.; 3, Osmont, 6 h. 24 m.; 4, Léa Lemoine, 6 h. 24 m. 10 s.; 5, Ducom, 6 h. 36 m. 6 s.; 6, Bertin, 6 h. 58 m. 43 s.; 7, Gleizes, 7 h. 27 m. 4 s.; 8, Richez, 7 h. 46 m. 10 s.; 9, Vonin, 7 h. 51 m. 13 s.; 10, Nicolas, 8 h. 5 m. 1 s.; 11, Caillois, 8 h. 9 m. 56 s.; 12, Balvay, 8 h. 37 m. 6 s.; 13, Dorigny, 8 h. 49 m. 8 s.; 14, Cormier, 8 h. 59 m. 12 s.; 15, Wattigny, 9 h. 7 m. 18 s.; 16, Deekert, 9 h. 9 m. 50 s.; 17, Chenard, 9 h. 10 m. 50 s.; 18, Gros,

10 h. 50 s. (2) Cars of less than 6 h.p.—1, Leuliette, 7 h. 9 m. 4 s.; 2, Lefèvre, 7 h. 33 m. 15 s. (3) Cars of 6 h.p. and upwards—1, Girardot, 4 h. 17 m. 44 s.; 2, Levegh, 4 h. 19 m. 20 s.; 3, Broc, 4 h. 32 m. 20 s.; 4, Rolls, 6 h. 11 m. 30 s. (punctured tire).

The average speeds maintained by the winners in each category were:—1, Baras, 45 $\frac{3}{4}$  kilometres per hour; 2, Leuliette, 32 kilometres per hour; 3, Girardot, 54 kilometres per hour.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### Daimler Motors in Austria.

REFERENCE was made in our issue of August 26th last to the formation of the Oesterreichische Daimler Motoren Gesellschaft (Bierenz, Fischer & Co.). We now learn that the new company takes over the factory of Fischer Bros., in Vienna, which is well equipped for the manufacture of motor-cars. All the Daimler patent rights for Austria-Hungary have been acquired, and Herr Paul Daimler, a son of the well-known inventor, is the manager of the new concern.

### A New Car.

A NEW type of motor hotel omnibus is being constructed at Cannes by M. G. Berret; the car is specially designed for use in the hilly districts of the South of France, such as Monte Carlo and Cannes. The vehicle will have seating accommodation for twelve persons, and will be fitted with a 12-h.p. motor.

### The Berlin-Baumgartenbruck Race.

THIS race, promoted under the patronage of the Committee of the Automobile Exhibition in Berlin, was contested on the 13th instant. Five cars and seven motor-cycles were despatched at 10 a.m., and the winner was found in the French rider Brauda, who, on a motor-cycle, covered the 65 kil. in 1 h. 36 m., including a delay of 14 m. at a level crossing. The second arrival was also a motor-cyclist (Kirchheim), but as he had not followed the correct route throughout he was not classified. The contestants finished in the following order:—1, Brauda (motor-cycle), in 1 h. 36 m.; 2, Kraus (motor-cycle), in 2 h.; 3, Bender (car), in 2 h. 14 m. 30 s.; 4, Oswald (motor-cycle), in 2 h. 23 m. 43 s.; 5, Hees (motor-cycle), in 2 h. 24 m. 40 s.; 6, Piccoli (motor-cycle), in 2 h. 36 m.; 7, Corne (motor-cycle), in 2 h. 42 m.; 8, Lob (car), in 2 h. 58 m.; 9, Ehrhardt (car); 10, Suberbie (car).

### The Automobile Club of France.

THE Club's villa in the Bois de Boulogne was closed on the 19th inst. for the season. Considerable damage was done to the trees by the violent storm of the 6th inst., and it will be some time before the grounds regain their usual aspect.

### Amateur or Professional.

THE Union Velocipedique Français, which has been for some time engaged on the question of classing participants in automobile races as amateurs or professionals, has adopted the following definition: "An amateur chauffeur is held to be the proprietor of an automobile carriage or cycle, mounting and riding a machine which belongs to him, and serving for his personal use, and also any motor-cyclist or automobilist who is popularly known as an amateur. Chauffeurs will not be permitted to take part in amateur races who make use of machines belonging to motor-car and cycle firms, or who made a profession of riding for such firms."

### Automobile Exhibition at Brescia.

ONE is somewhat apt to overlook the part that Italy is playing in the automobile industry, but as a matter of fact it is no insignificant one. In addition to recent races and fêtes an automobile exhibition has been held at Brescia and resulted, it is reported, in considerable business.

### The Bordeaux-Biarritz Race.

Beconnais, Winter, etc.

### Motor-cabs in Germany.

ENTRIES for this race will be received up to the 27th instant, on payment of double fee. Among the intending competitors in the various categories we note the names of Etienne Giraud, Albert Lemaître, Hoogland, Dulac,

### The Late M. Mayade.

ON Monday last at the church of Notre-Dame-de-la-Gare, Paris, there was celebrated a service commemorative of the death of the well known French chauffeur, Mayade, who was killed in an automobile accident at Chevanceaux exactly a year ago. Many English automobilists made the acquaintance of M. Mayade at the famous Brighton drive of 1896.

### An Alsatian Automobile Club.

ALSACE can now boast of an Automobile Club numbering already some fifty members. The headquarters will be either at Strasbourg or Mulhouse.

### Automobiles for Municipal Purposes.

THE local authorities of Schaerbeek, near Brussels, are reported to be considering the question of adopting motor dust carts and street watering wagons.

THE *Road* has a page of excellent automobile notes under a strangely and peculiarly drawn heading.

A MOTOR-CYCLE race is to be run off at Liège, Belgium, on the 24th inst., under the auspices of the Safety Club Liegeois.

MR. LOVE, founder of, and late managing director to, the Edinburgh Autocar Co., Ltd., has resigned his position in that Company.

THE Motor-Car Company, Ltd., has been registered with a capital of £25,000 to promote and protect the interests of the professions, trades, and industries engaged or concerned in or connected with the cycle, engineering, and motor-car building trades, etc.

MR. G. H. SMITH, of Anerley Park, who asks for handbooks on gas engines, is recommended the following works:—"The Gas and Oil Engine," by Dugald Clerk (London: Longmans Green & Co.); "Modern Gas and Oil Engines," by Fred Glover (Manchester: Technical Publishing Co.); and "Gas and Petroleum Engines," by A. G. Elliott (London: Whitaker & Co.).

ON Saturday, Mr. C. Hansell, of Montgomery Road, Sheffield, who with a friend was, according to a local daily, making a motor-car journey, met with an accident near Sheepbridge. The car was passing down a steep incline when the driver lost control, and it ran away. At the bottom of the incline the vehicle ran to the side of the road, pitching both gentlemen out. Although bruised and shaken, they fortunately did not sustain any serious injuries. The motor-car was badly damaged.

## The Automobile Club Autumn Tour.



IN rather chilly and threatening weather those participating in the tour of the Automobile Club to Folkestone assembled before the club-house in Whitehall Court on Saturday last. There was not a large gathering of the public, but those who had not been deterred from attendance by the climatic outlook were really interested spectators, and inspected the cars with almost critical eyes. Shortly after 10 a.m. the start was made, eight cars, a similar number of motor-tricycles, and a quadricycle starting within a few minutes of the leading vehicle. Others joined *en route*, and altogether the Club muster was a representative one, including: The Hon. John Scott Montagu, M.P., 12-h.p. Daimler, and the Hon. C. S. Rolls, 8-h.p. Panhard (joined after Paris-Boulogne race); Mr. and Mrs. Lyons Sampson, Benz Victoria; Mr. and Mrs. Edgar Soames, Daimler; Mr. Stopes, Miss Stopes, and Mr. Stopes, jun., Daimler; Mr. and Mrs. S. F. Edge and Mr. Napier, Panhard body and frame, with Napier motor; Mr. Charles Jarrott, Panhard car; Mr. Harold Heatley and Mr. Gresham, English Hurltu; Mr. Charles Cordingley, sporting dog-cart; Mr. and Mrs. Roger Fuller, Daimler; Mr. and Mrs. Kitto, 3½-h.p. Victoria; Mr. Frank Butler, Mr. Cecil Grimshawe, Mr. Robert Phillips, and Dr. Acworth, De Dion tricycles; Mr. Crampton, motor-tricycle; Mr. T. B. Browne and Mr. Dangerfield, on 4-h.p. Panhard; Mr. Friswell and friend, on Peugeot; Mr. Gretton, on new special design Iveagh phaeton, with hood. On the Club wagonettes (lent by the London Motor-Van and Wagon Co., and Daimler Co., Ltd.) were Mr. and Mrs. W. M. Hodges, Mr. Montagu Pilcher, Mr. and Mrs. Bertram Blount, Mrs. C. Johnson, Mr. T. W. Staplee Firth, Mr. Graham White, Mr. Julian, and Mr. H. Edmonds. Other participants were: Messrs. Phillips, on quadricycle; Mr. Roget, Mr. Walter, Dr. Hailey, and Mr. Wridgway, motor-tricycles; Mr. Mayhew, quadricycle; Captain Langrish and Mr. C. Johnson on Vallée; and Messrs. R. E. B. and Claud Crompton, H. J. Swindley, etc.

The roads were soon found to be in splendid condition, but very fast travelling was impossible owing to the many and sharp corners that had to be negotiated and the switch-back nature of the roads. The day was clear and breezy, and several sharp showers fell during the morning. Most unusually, and notwithstanding the careful itinerary mapped out by the secretary, a number of the cars took wrong turnings, and the majority of vehicles did not reach Maidstone—distance 42½ miles—till past two o'clock, and some arrived even later than this. Of course, the inevitable punctures happened, and delayed those who indulged in the troublesome luxury of pneumatic tires. Several cars went in error to Sevenoaks, and the passengers dined in that town, afterwards continuing their journey. A series of incidents happened on the way to Maidstone. Mr. Friswell, on a new 6-h.p. Peugeot, lost some time through his pump not acting properly, but this trouble being put right, the car travelled splendidly and at a high speed. A Daimler car ran into Mr. Wridgway's Phébus tricycle, breaking a sparking plug; while at a village called Igtham the Stanley steam car, driven by Mr. Searles and having as passenger Mr. Halsey, chairman of the Surrey County Council, ran away, the band brake having broken. On reversing, a gland broke, and the driver had no alternative (as the car was gaining speed) but to turn it into a brick wall, with disastrous consequences to the car but fortunately little injury to the riders. Unfortunately, somewhere near the same village a horse took fright; the man in charge fell, and the horse kicked him, fracturing one of his legs. He was taken to a doctor, and ultimately left in good hands. Mr. Crompton, on his tricycle, had trouble with his valves, but these having been attended to, the machine ran all right the remainder of the tour. Luncheon

was at the Royal Star, Maidstone, and was served from two to four o'clock, as the various occupants of the cars arrived. Very short stops as a rule were made, all being anxious to reach the destination, the journey being to most over unknown roads. Fortunately the surface was in splendid condition, and the gradients all seemed in favour of the motors, and fair times were made, most of the cars doing the journey within the three hours—although the route lay through the narrow streets of Hythe and Sandgate, finishing up with a nasty hill into Folkestone.

Between forty and fifty ladies and gentlemen sat down to dinner at the appointed hour, under the chairmanship of Mr. R. E. B. Crompton. Several stragglers came in afterwards, and there could not have been less than seventy of the members and friends present. Mr. Johnson, the secretary, rode on Captain Langrish's Vallée car, and that gentleman's trouble with a particular pneumatic tire must have been disheartening. At all events, the idea of repairing was abandoned, and the journey finished with the tire on the ground. Mr. Kitto's Benz also gave him trouble, causing his arrival at the hotel to be somewhat late. One of the best going cars on the road was Mr. Mulliner's Daimler, which, we understand, has been in use for thirty-one months, being the second English Daimler built. It was speedy on the level and took the hills in fine style. Mr. Edge's car, with the new Napier motor, was also speedy, and gained general approval from its smoothness of running. We have omitted to mention that just outside Maidstone there was a nasty obstruction in the road in the shape of a wagon-load of fresh-cut trees drawn by four heavy horses. The wagon must have been a very old one, for the axle and shafts were broken. The men in charge were of a very objectionable type and kept their horses right across the road, refusing to let any one pass, remarking that they had got to wait and that they intended keeping others waiting. However, after some persuasion all managed to get by.

Sunday opened breezy and dull, and, according to arrangements, Boulogne the destination to witness the finish of the Paris-Boulogne race. About forty members went aboard the steamer at mid-day, and it was noticed there were several others interested in motor-cars on the boat, including Mr. Critchley, Mr. Straker, etc. A comfortable passage was made and on arrival at Boulogne, standing on the wharf were seen a number of other friends and members, including the Hon. Scott Montagu, M.P., Messrs. Phillips, and Mr. Frank Butler, Mr. Riches and others. The scene at Boulogne was a gay one, the streets being decorated with venetian poles and flags. The point of arrival was in the town, and for a couple of hundred yards on either side of the finishing post, a rope line had been made, and this was guarded by French soldiers stationed every ten feet. A large crowd had assembled, and we learnt that one "quad" had arrived with a lady passenger on board. We walked up the hill and watched several of the competitors come in, one attracting attention by the absence of a tire on his near side driving wheel. We afterwards learnt that this rider had travelled on his rim for nearly eighteen miles. Another object to attract attention was a lady seated on the front of a "quad" in rational costume and minus a hat or bonnet. It was peculiar, to say the least, to see this lady swaying her body with the motion of the car. A machine we noticed in the race was what looked like two tricycles coupled together, with engines front and rear, two side wheels, and the two other wheels in front and rear. Both riders had to pedal hard up hill. Several of the quadricycles had two motors coupled, but these did not seem in any way better than the single motors, as in each instance the riders had to pedal hard. Only four of the big cars started, and of the three Englishmen

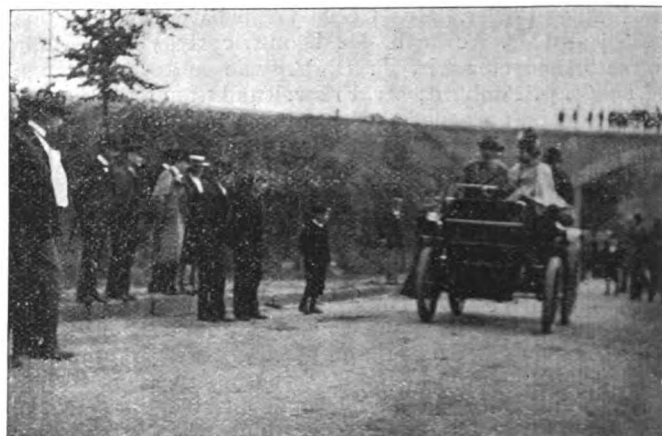


entered—Hon. Scott Montagu, M.P., "Flash," and Hon. C. S. Rolls—only the latter started. He had as passenger Mr. A. Bird, and finished last. Twelve minutes were lost through a punctured tire.

One incident was the stoppage at the bottom of the hill outside Boulogne of a car with a hood and glass front. There were four passengers, and after a lot of time spent in looking over the car the inevitable was accepted, and the crowd assisted, amidst jeers, in pushing the car up the hill. We may mention that the latter portion of the road over which the competitors travelled was of an execrable nature, and it was wonderful considering the state of the macadam that no accidents happened. Most of the English visitors got tired between the intervals of fifteen and twenty minutes waiting for the arrival of the competitors, and so strolled around, many of them taking dinner at Bailey's and other well-known restaurants. The eight o'clock boat home was caught, and after a somewhat "rocky" passage the hotel at Folkestone was reached at ten o'clock, the visitors arriving home with no very great opinion of the exciting nature of French motor-car racing.

On Monday the owners of several cars took a circular run to Canterbury, Sandwich, Deal, and Dover, back to Folkestone, a distance of about sixty miles. The run was much enjoyed by those participating, and the only incident of

Sir W. Crundall. There was a fair attendance of the public, and great interest was evinced in the parade of some twenty-five cars and motor-tricycles round the track. Hospitality was liberally dispensed, and the Mayor, in a few well-chosen words, welcomed the presence of the members of the Club, and declared his interest in automobiles. The show if small was an interesting one. In all nearly twenty vehicles were on view, and some well-known firms were exhibiting. Taking the exhibits in the order of catalogue Messrs. Arnold & Sons, of East Peckham, Kent, had two English-built Benz cars on view, the bodies being of the "dog-cart" order. Messrs. Hewetsons, Limited, of Dean Street, Oxford Street, London, had three of their Ideal Benz cars and a parcel van on view. Mr. Harding had a miscellaneous stall of accessories, Buffoline noiseless raw-hide gear-wheels, Pratt's motor-car spirit, etc. Clarkson & Capel's steam lorry was shown, also the well-known wagonette of the Liquid Fuel & Engineering Co. The same firm displayed a new lorry, as well as an omnibus fresh from the works at Cowes. This 'bus is built to travel up the dreadful Castle Hill at Dover six times a day, and is built to the order of the Dover and East Kent Motor 'Bus Co., Ltd., being the third of what is intended to be a large fleet of motor-vehicles. This new omnibus is named the "Titan," is convertible to a lorry, and comprises several improvements on previous vehicles.



THE PARIS-BOULOGNE RACE—TWO SNAPSHOTS TAKEN NEAR FINISHING POINT AT BOULOGNE.

note was the presence off Dover of two first-class cruisers, the "Niobe" and the "Diomed." A flotilla of six torpedo boats also passed while the party were having tea at the South Eastern Railway Hotel. The Castle Hill into Dover caused general concern, its steepness, winding and devious course, and looseness of surface rendering it highly dangerous. The band brakes of two cars fired, and Mr. Grimshaw's tricycle got beyond his control, running away at a great pace. He had to face the ordeal of a flock of sheep coming up the hill, but managed by letting off his exhaust in loud shocks to frighten them away and so escaped accident. It was, however, a very narrow shave. After passing through Dover two of the cars and a tricycle took a wrong turning and got on to the Downs and among turnip fields. In one field a traction engine, with several travelling cars, was met, with the result that the tricycle has to be lifted up a bank and the cars to be backed about a mile. Two hours were taken to reach Dover, whereas on another day only about thirty-five minutes were taken. Among the visitors were Mrs. Kennard, the well-known novelist, and a gentleman on a Benz car.

#### THE EXHIBITION AT DOVER.

On Tuesday the ranks of the tourists were considerably thinned, but still there was a good muster for the journey to Dover to the opening of the Automobile Show in that town, and to attend the reception by the Mayor of Dover,

It is geared low, and is specially built for the St. Margaret's journey over Dover Hill. The "reach" from back to front has been done away with, and a pivot in the centre of the angle iron frame has been introduced to nullify any vibration, while for the same purpose a new system of springs is used. In place of the  $\frac{3}{4}$ -in. tubes in the boiler,  $\frac{1}{2}$ -in. tubes are now used, and thus more power is available. This 'bus is the lowest speeded yet built by the Cowes firm, there being only one revolution of the wheels to twenty of the fly-wheel.

Messrs. Marshalls, of Belsize Works, Manchester, and the London Autocar Co. of Gray's Inn Road, London, W.C., exhibited the now well-known "Marshall-Hurtu," while the National Motor-Carriage Syndicate, of 37 Walbrook, E.C., showed the Joel electric victoria, which was on view at the Agricultural Hall in July last. This vehicle was moving round the track most of the day, and gained general approval by its silent action and ease in running. Our friends of Holland Park Avenue, the Automobile Association, Ltd., had as usual a fine exhibit, including two Orient Express cars, a "Tourist," a small Mors, a Barrière tricycle, and a handsome Waverley electric phaeton.

Messrs. Gibbon Bros. (of the Butler Motor Co.), Belmont, Surrey, had on view a fine show of accessories, and at the time of our visit Mr. Gibbon was anxiously awaiting the arrival of four Butler motor-tricycles which were on a steamer fast stuck on a mud bank! However, late on Wednesday, these duly reached the grounds. The Steam Carriage and Wagon

Co., Ltd., of Homefield, Chiswick, exhibited a large van, built to the order of Messrs. Schweppes, the well-known mineral-water manufacturers. Also on the ground was Mr. Harmsworth's Columbia electric car, which had been lent to the Mayor for his use during the show, and running about was the British Motor Coupé Company's 12-h.p. Canstatt Daimler charr-a-banc, constructed to carry twenty people, and several of the same Company's well-known coupés.

On Wednesday most of the cars returned to London, but a few stayed over to again visit the Dover show.

The trials in connection with the show were held on Wednesday, the judges being Major Holden, Professor Boys, Mr. Worby Beaumont, and others, the arrangements being in the capable hands of Mr. Beeton and Mr. Johnson, assisted by the local committee. For the heavy class, three vehicles were entered—the Liquid Fuel Engineering Co.'s lorry, the same firm's 'bus (entered by the Dover Motor-Bus Co.), and the Thornycroft vehicle. The distance was about fourteen miles over very hilly roads, and all the vehicles successfully went through the trials. For the light cars there were five entries, viz.: Hon. C. S. Rolls' racing Panhard car, Mr. Gretton's Iveagh phaeton, a Marshall-Hurtu (driven by Mr. Mann), an Orient Express (driven by Mr. Frentzel), and Mrs. Kennard on her Benz. Up to the time of going to press no official reports had been issued, but we understand the first two cars did the journey of three miles round the track and twenty-four miles on the road with a non-stop absolute; the Marshall-Hurtu also did well.

### THE MORS CARRIAGE.—III.

By VELOX.

(Continued from page 413.)

SUBSEQUENT investigation, however, shows that the designers in departing from the obvious method of placing the chief weight centrally were not swayed in this direction by lack of thought. The power transmission devices had to be accommodated, and apart from the question of the distribution of the weight it was found to be of greater importance to secure that the tractive effort of the belts should be exerted on the centres of the transmission shafts rather than on the ends, as would be the case were the motor centrally placed. In fact, it was obvious to the designers that it was of more importance to divide the strain of the bearings equally than to place the weight of the motor in a central position, especially as they had the power to counterbalance the uneven distribution of the weight of the latter by other heavy portions of the completed mechanism. As a matter of fact, the weight of the transmission pulleys, that of the dynamo and its gear, and that of the water reservoir attached to the left of the carriage frame, exactly balance the weight of the four cylinders of the motor and their necessary parts. The backward position chosen for the motor was also dictated by substantial considerations. In such a position no inconvenience is caused to the passengers should the motor be emitting fumes owing to want of attention or excessive lubrication. A similar reason dictated the fencing of the exhaust boxes and their final collective chamber.

On reference to Fig. 2 (p. 412 *ante*) it will be found that in front of the cylinders, a little to their right, the carburettor is placed. This is of the constant level type, controlled by the customary float mechanism, and will be fully described later. At a point a little more to the front, and a little to the left side of the cylinders, will be seen the open box which contains the four self-induction coils. It may here be remarked that throughout the mechanism and appliances it will be found that each cylinder of the motor has its own particular set of parts. The dynamo generating the current for furnishing the igniting spark is also to be seen on the left side of the engraving (Fig. 2), this being placed quite at the back of the car and on the main or motor shaft. This appliance is balanced by the self-acting lubricating device, placed also at the back

of the car, but in the extreme right-hand side. At the back also, between the rear pair of cylinders and the high and low speed pulleys, is placed the speed-reducing gear or "demultiplication" device, which works in a gear case of ceruse filled with oil.

On the main or motor shaft are placed also the mechanical devices for actuating the lubricator and the water-circulating pump. The main store of cooling water is accommodated in the tank, to be found directly under the footboard of the driving seat; it is not visible in either Fig. 1 or in Fig. 2, and can only be seen by looking under the vehicle and from the front thereof. The circulating pump sucks water from this container and forces it around the bottom portions of the cylinders after having first caused it to pass through the coil of tubes provided with radiators, sometimes described as a condenser. After leaving the cylinder walls the water is conveyed by the four tubes radiating from the cylinders, and plainly visible in Fig. 2, to the small reservoir, shown to be attached to the left side of the carriage frame. From here it falls by gravity into the larger reservoir previously alluded to, and placed under the driving seat footboard. By this arrangement the pump is assured a certain charge and a constant level of water is maintained in main reservoir.

In describing Fig. 1 we alluded to the small lever working in a ratchet placed on the right side, and outside the carriage body. In Fig. 2 this lever itself is not shown, but the gears connected to this lever are plainly seen. Through the medium of the gearing this outside lever controls the movement of the articulated rod, which is to be seen on the right-hand side of the vehicle, close to the top of the outer edge of the car body. On this rod are carried two swinging arms, which in their turn control two doubly-articulated rods connected up to small discs in such a way that the latter can be made to completely cover, or to leave entirely open, four air inlets communicating with the carburettor mixing chamber of the motor. When the outside or ratchet lever is brought quite forward the air passages are completely open, and the motor can then attain its highest designed speed. On the other hand, if this lever is moved backward the articulated rods commence to move these discs, so that they gradually close these four air inlets; if it is placed backward so far as is permitted by the ratchet, then we find that these air inlets are completely covered by the discs, and the motor is consequently "choked" by reason of its deprivation of air, and therefore stops working. It is quite easy to see how great a convenience this appliance becomes when the car is progressing through crowded traffic. The motor can be so delicately fed with air that its speed is increased or decreased as occasion demands.

Amongst other mechanical devices shown in Fig. 2 is the friction-clutch placed centrally between the two transmission pulleys and the four cylinders of the motor. It is partly obscured in the illustration by the gear case containing the speed-reducing mechanism. Although we have spoken of the transmitting pulleys on the main or motor shaft, we have not yet alluded to their respective pairs of fast and loose pulleys, to be found on the second or intermediary shaft. These are not plainly visible in Fig. 2, although some portions of them may be seen if the direction of the belt is followed.

In the succeeding portions of this description we propose to examine in detail each distinctive organ of the beautifully conceived and well designed collection of mechanical parts which as a whole make up the world-famed Mors car.

(To be continued.)

As a result of Goodwin's recent road record and the great speed attained by the motors which paced him, the Chief Constable of Huntingdonshire has issued public warning, which is widely posted throughout the county, to motor-car drivers, motor-cyclists, and cyclists to the effect that the police have received strict instructions to proceed against all who may furiously drive or ride their machines.

# The Berlin International Motor-Car Exhibition.

(Continued from Page 449.)

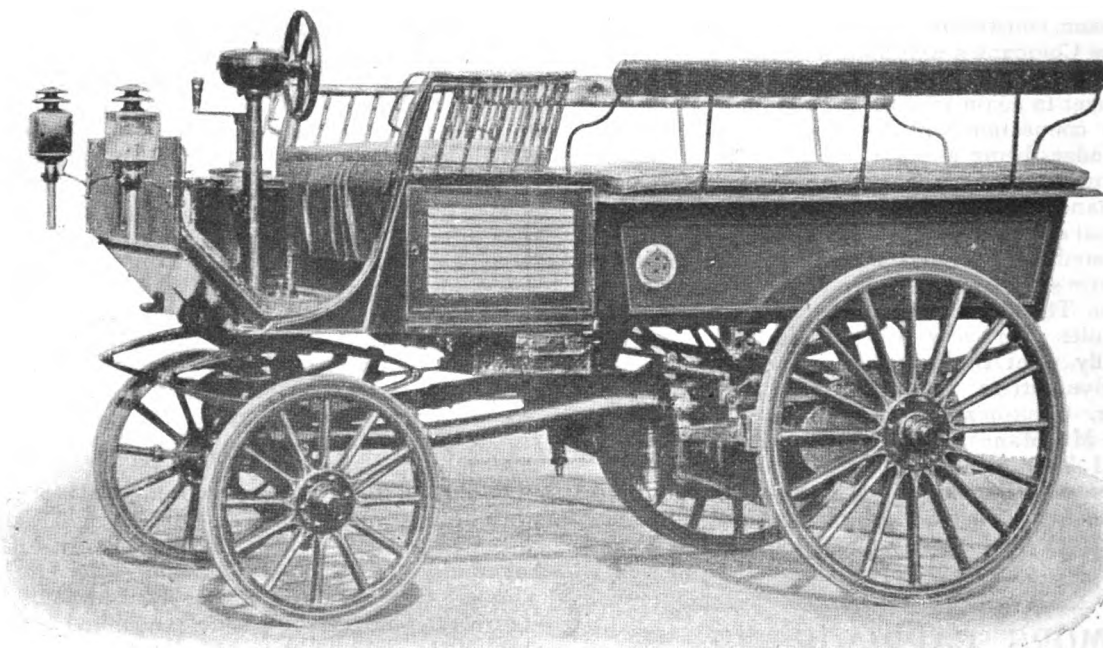


FIG. 1.—THE GESELLSCHAFT FÜR VERKEHRSUNTERNEHMUNGEN'S ELECTRICAL WAGONETTE.

AS stated last week, in addition to the electrical omnibus illustrated in our issue of August 11th last, the Gesellschaft für Verkehrsunternehmen, 43 Unter den Linden, Berlin, N.W., is exhibiting several types of electrical vehicles, including a wagonette, a 1-ton delivery van, and two droschken. The Company has decided to adopt standard frames on which different types of bodies can be mounted. A view of the tubular frame decided upon for vehicles capable of carrying a load, consisting of either passengers or goods, of from 500 kilog. to 1,000 kilog. is shown in Figs. 1 and 2, the former illustrating an eight-seated wagonette and the latter a 1-ton delivery van. It will be noticed that the bodies are suspended by strong plate springs on the frame, spiral springs being also introduced between the latter and the axles. The vehicles are propelled by a single Lahmeyer electro-motor attached to the frame through the medium of springs, and geared to the rear axle by pinions, working in a dust-proof case. A special form of differential gear is provided on the rear axle. The accumulators, which are of the Majert type, are located under the driver's seat. Doors are provided at each side of the car to permit of the battery being readily withdrawn, while the seat itself can be lifted up to allow the battery connections to be examined. We are unable to give the number, weight, or capacity of the accumulators, but it is stated that they are sufficient for a run of from 25 to 30 kilometres on one charge. Steering is effected through the front wheels by means of a vertical hand wheel. The controller switch is distinct from the steering standard, but in future vehicles it is intended to combine the two. The controller is adapted to take a number of positions, four forward speeds and one reverse motion being provided, while in one position of the switch the motor can be made to act as a powerful electrical brake. The road wheels are of strong construction, and are fitted with ball bearings, the front pair being mounted on the usual vertical pivots. The weight of the types of cars illustrated in Figs. 1 and 2, complete with accumulators, is given as 1,800 kilog., or 1 ton 1,720 lb. Shoe brakes on the rear wheel tires, controlled by a foot pedal, are provided. Fig. 3 illustrates the Company's electrical "droschken," which are mounted on

another type of standard tubular frame intended for light vehicles, such as coupés, victorias, etc. The suspension of the body on the frame is similar to the system adopted in the wagonette. In the light vehicles, however, two electro-motors are employed, one being geared to each of the rear wheels. The accumulators are arranged under the front and rear seats, and are stated to have a capacity sufficient for a run of about 40 kilometres on one charge. Steering is effected by a bar; the controller switch, which in the light class of vehicle is combined with the steering standard, is adapted to give four forward speeds, one reverse motion, and an electric brake. The droschke weighs with accumulators about 1 ton 180 lb., and can, it is claimed, attain a speed of 20 kilometres per hour.

A number of Columbia electric vehicles are to be seen on the stand of the Motorfahrzeug und Motorenfabrik Berlin Gesellschaft, of Marienfelde, near Berlin, this Company holding the licence for this type of vehicle for Germany, Austria, and Hungary. A new firm in the automobile world is Heinrich Scheele, of Cologne, which is taking up the construction of electric cars on an extensive scale, no less than four vehicles, a two-seated phaeton, a four-seated phaeton, a mylord, and a delivery van being on view at the exhibition. The mylord is fitted with two Korting electromotors, geared by chain and chain wheels to the rear axle. The battery consists of a set of accumulators of the "Colonia" type, supplied by Messrs. Leffer & Co., of the Colonia Accumulatorenwerke, Aix-la-Chapelle. The accumulators, which have a capacity of 75 ampere-hours, and weigh 560 kilog. (about 11 cwt.), are arranged partly under the driver's seat and partly at the rear. The controller is arranged to give three forward speeds and a similar number astern. The batteries in this vehicle are always in tension, the variation in speed being obtained by placing the motors in parallel or in tension and introducing resistances into the circuit. Steering is effected through the front wheels as usual. A band brake, controlled by a foot pedal, and acting on the rear axle, is provided, as also shoe brakes on the rear wheel tires. The weight complete of the mylord is given as 1,600 kilog. (1 ton 1,280 lb.). In the delivery-van only one electro-motor of 6 h.p. is used.

That the well-known electrical engineering firm of Messrs. Siemens & Halske, of Berlin, are going in extensively for motor-vehicles is evidenced by their exhibit at the show. This includes a number of electro-motors and other electrical apparatus for automobiles, but the principal interest centres on

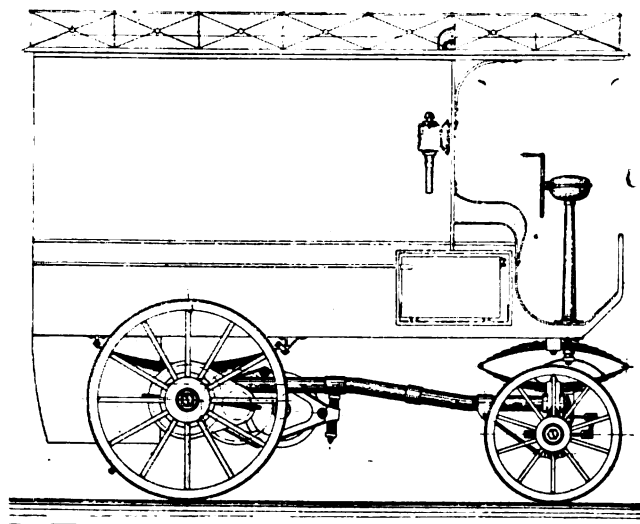


FIG. 2.—THE VERKEHRUNTERNEHMUNGEN CO.'S ELECTRICAL DELIVERY VAN.

the large electrical omnibus displayed. This car, which we hope to deal with at length in a subsequent issue, is of such a gauge that it can run on tram lines, and is also arranged that it may take current from either the overhead conductor of the "trolley" tramways or from the conduit lines.

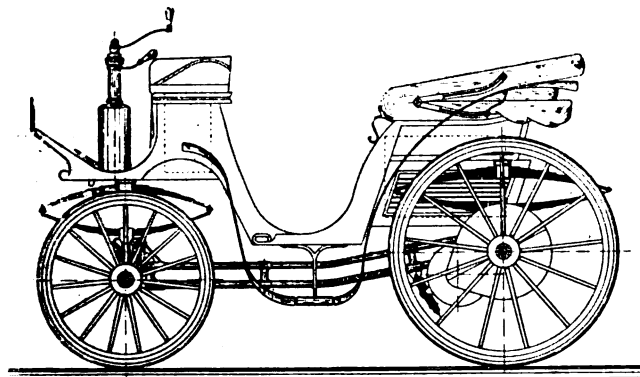


FIG. 3.—THE VERKEHRUNTERNEHMUNGEN CO.'S ELECTRICAL DROSCHKE.

Electric vehicles are also shown by Herr C. Kleimt, of 74 Neue Königstr., Berlin, N.O.; Herr A. Krüger, 8 Spittelmarkt, Berlin, C.; Messrs. Kruse Bros., 45 Gänsemarkt, Hamburg; the Kuhlstein Wagenbau, Charlottenburg, Berlin; the Vulcan Automobil Gesellschaft, 45 Ritterstrasse, Berlin, S.W.; Messrs. Jacob Lohner & Co., of Vienna; and Messrs. O. L. Kummer & Co., of Dresden.

(To be continued.)

## MIDLAND MOTOR NOTES.

By "HERCULES."

### English Workmanship.

IN an interesting article on motor-vehicles the *Daily Mail* supports the assertion I made recently in these columns—based on the authority of men who have run continental motor-cars for some time—that the excellence of English workmanship compares most favourably with that of continental makers. One of the reasons why continental-built cars are pressed for sale in this country is, says the *Mail*, because there is little effective competition at present from home manufacturers. This may have been so up to the present season, but if the writer had visited as many factories as I have during the past few weeks he would have seen that English makers are doing their utmost to remedy this. Everywhere the greatest activity prevails amongst those firms which have taken the business up, and the number is being added to almost every week by establishments which have gained a reputation for the very best work in the cycle trade.

### The "Critchley" Car.

It is pleasing to note that the Daimler Co.'s "Critchley" car is thought so highly of by the writer. He says that the "Critchley," at about £200, will be the best thing in the English market, and that a large number of orders have been placed with the Coventry firm for this car. Its manipulation, it is added, could be learnt in a fortnight, and once purchased the cost of up-keep is nothing like that of a horse.

### Automobilism in Coventry.

IN Coventry one meets with motor-vehicles of one type or another almost everywhere. The croak of the horn is well-nigh as familiar to pedestrians as the tinkle of the cyclist's bell, and is certainly more respected. A few motorists favour the motor-bicycle, but it is not often they are met with. Motor-tricycles are more popular, but the palm has to be given to machines "built for two." Cars are also numerous, and it is an ordinary thing to see two or three of these passing along the street with a full complement of passengers. Oftener still they are to be met on the fine roads leading out to Birmingham or Kenilworth and Leamington, bowling along at a merry pace, the passengers showing not the slightest sign of alarm, but, on the contrary, evidently appreciating "the fun" to the full. Cars are also running constantly between the various works and the railway station, and the larger *chars-a-banc* are coming into use for trips into the country.

### Motor-Cars and Coventry's Narrow Streets.

THE narrow streets for which the "city of spires" is noted test not only the capabilities and judgment of the motorist, but provide plenty of opportunities for demonstrating the perfect control he has over his machine. Some of the drivers wind their way in and out of the traffic at a leisurely speed, others proceed cautiously through the busier streets, whilst others, again, dash along at a rate which causes certain flutterings among the more nervous. But the drivers are thoroughly on the alert, and are perfectly confident they can bring the vehicle to a standstill the second the brake is applied. I don't remember an accident in the city which has been caused by a motor, but I have seen one or two narrow shaves. Collisions with other vehicles have only been avoided by the ease with which the motor-car is steered, and accidents prevented by the watchfulness of the driver and the promptness with which the vehicle has been pulled up. For example: A cyclist was spinning along the other morning at

a good pace, followed within a yard or two by a big motor-car. To clear a cart standing at the side of the road the cyclist ran over the tram lines, and as the water cart had been there a few moments before his wheel skidded and he was brought to the ground. This happened, it goes without saying, without the slightest warning, but so promptly did the motorist act, and so well was the machine under the control of its brakes, that the falling of the cyclist and the stopping of the motor were practically simultaneous. Had a horse and cart been behind him the cyclist could hardly have escaped so luckily.

#### The Humber Co.'s Productions.

THE Humber Co., Lower Ford Street, Coventry, will have a much more extensive exhibit than last year at the forthcoming Stanley Show, and their motor "quad" will occupy a prominent place. A number of light sociable cars will also be shown, and in fact every grade in cars up to one nearly approaching the Daimler in size. The firm are experiencing a good demand for their tandem quadricycle, of which a good number have been turned out this season, and they are also devoting a great deal of attention to a small carriage for two which will shortly be placed on the market by them. The whole of the present resources of the firm are, I understand, brought into play in coping with the orders coming to hand and in the experiments which are being made.

#### Motor-cars in Wolverhampton.

IN Wolverhampton, whilst the firms engaged in the motor industry are meeting with the success their enterprise deserves, there seems to be some hesitancy felt by those who are in a position to become purchasers of motor-vehicles. At present I only know of one gentleman outside the trade who owns one. There is, I am told, a splendid opportunity for a service of motor-cars between the Square and Penn, a thickly populated suburb. At present a 'bus makes the journey three times a day, charging 3d. for the two miles—not at all a bad rate from the 'bus owner's point of view, but even at this charge the 'bus is always crowded outside and in. Motor-car services have been running at Bedford for some months now, the charge per mile being 1d. The vehicle seats a dozen passengers, and in addition to the driver there is a boy at the back for the collection of tickets. I believe the venture has met with a gratifying success. A similar service is about to be inaugurated at King's Lynn. If at these places, why not at Wolverhampton, where there is good reason to believe a motor-service would be even a greater success?

#### A "Perry" Motor-Tricycle

MESSRS. PERRY & Co., Lancaster Street, Birmingham, the noted steel-pen manufacturers, have been for a long time experimenting with a motor-tricycle manufactured by themselves. The motor is  $1\frac{1}{2}$  h.p., and the tricycle has been running on the road for some time. Messrs. Perry and Co. have received a number of orders for motor-tricycles, and are also turning their attention to the question of constructing motor-cars. This firm has long been connected with the cycle trade, and there is no doubt that in the manufacture of motor-vehicles they will give equal satisfaction to the public as they have in all former undertakings.

#### A New Lamp.

MESSRS. COOMBS BROS., Ltd., Aston, Brook Street, Birmingham, are placing on the market a lamp suitable for motor-tricycles and cars. The lamp is neat and pretty in design, the clip is strong, and a brilliant light is obtained. All the parts are rivetted, whilst those exposed to the heat are not dependent on soldering. The lamps can be obtained in

pairs or in singles, with a spring bracket fixed at the back. Messrs. Coombs Bros. are well-known manufacturers of cycle, ship, railway, and other lamps.

#### More Cycle Firms take up Motors.

To my knowledge several firms who until recently confined their attention to cycle accessories are waking up to the necessity of catering for motor-vehicles, and are adding to their stock various articles required by motor men.

#### Motor-Cars for Hire.

THE Midland Motor Agency, Acocks Green, Birmingham, of which Mr. W. A. J. Aldred is the secretary and manager, is arranging to supply motor-cars and tricycles on the hire-purchase system "in order to meet the convenience of those to whom a car would be a boon but who cannot afford to put down the cost at once." The Midland Motor Agency holds the district agency for the Benz cars, and has also several second-hand vehicles in stock.

#### Mr. G. Iden and the "Princess" Car.

MR. IDEN, of the Motor Manufacturing Company, Coventry, was prevented from joining the Automobile Club tour on Saturday by an unfortunate mishap to his "Princess" car. The car was despatched from Coventry on Friday night in charge of a competent driver and fitter, who were instructed to be at the Company's London offices at 9.30 on Saturday morning to join the Automobile Club. Mr. Iden left Coventry for London by the last train on Friday night, and on arriving at the Avenue Hotel found a telegram awaiting him stating "Car going very well." Consequently he was quite unprepared on Saturday morning to receive a wire as follows: "Turned car into bank. Buckled back wheel. It was impossible to run. Getting it to the station." Mr. Iden immediately replied "Wait my arrival before loading," and at once repaired to Weedon, where the accident had occurred. Upon arrival he found that the front axle was badly bent, the frame twisted, wheel buckled and broken, cooler displaced, pipes bent, and the car generally a wreck. He decided that he would drive it back to Coventry, if possible. He had the wheels stripped, sent to Coventry to be rebuilt, and these were returned within four hours. In the meantime, he took the axle to a village blacksmith's shop, and made such general repairs as would enable him to drive the car back home by road. The journey, which was started soon after midnight, was accomplished without further mishap. At Coventry the car was promptly put in order, and Mr. Iden was able to drive out with it on Tuesday night, when the ten miles between Coventry and Warwick were covered in twenty-five minutes. Naturally Mr. Iden was disappointed in not being able to take part in the Automobile Club tour, but the accident has shown not only how promptly the Motor Manufacturing Co. can execute repairs, but how invaluable a cool head is in such perplexing circumstances. The accident, furthermore, should be a warning to drivers. It was caused through the driver, himself thoroughly experienced, allowing the fitter to "try his hand."

THE directors of the Caledonian Motor-Car and Cycle Company, Ltd., at a board meeting last week resolved to enter the motor-car business on a large scale, and intend to keep for sale and hire a goodly number of the latest types of both large and small motor-carriages. The Company have been appointed sole agents in the North of Scotland for the Canstatt Daimler motor-cars and the United Motor Industries Company, Paris, and they will have on show, before the new year all the latest types of Canstatt-Daimler, Accles-Turrell motor-carriages, De Dion tricycles, etc. They will also be in a position to repair any make of motor-carriage.



## CORRESPONDENCE.

### FROM PEKIN TO LONDON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to your paragraph *re* Dr. Lehwess' proposed motor trip from China to London, perhaps the doctor could persuade R. L. Jefferson to accompany him. Mr. Jefferson has already successfully undertaken cycle journeys to Constantinople, to St. Petersburg and back, and to Khiva, so that the experience gained on these jaunts should be useful on a long motor journey through foreign lands. Mr. Jefferson is also a journalist of no mean ability.

Coventry, Yours faithfully,  
September 15th, 1899. H. W. BARTLEET.

### THE ABERYSTWYTH PERSECUTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read the letter of Mr. W. H. Hollier, of Aberystwyth, which appeared in your columns of the 15th instant.

The prosecution in this case undoubtedly resolved itself into a persecution; and it is quite clear that the ignorance of the magistrates turned the machinery of the law into an engine of persecution. In the first place the summons was bad, as the four-mile limit only applies to traction engines and road rollers. The Court was apparently in total ignorance of the Act of 1896, which, with the regulations thereunder, allows a speed of twelve miles an hour. This does not necessarily mean that one may travel at that rate in thoroughfares unsuited to such a speed by reason of the traffic. Objection ought to have been taken, and an application to state a special case for the High Court should have been made at the time, and no doubt the stupid decision would have been upset and the magistrates ordered to pay the costs.

The observation of Sir J. Szelumper that motor-cars were a nuisance, and that "the public would do their best to put them down" is a piece of gratuitous ignorance which points out the inadvisability of putting the administration of the law into the power of such persons. It may be assumed from his remarks that Sir J. Szelumper arrogates to himself wisdom superior to that of our legislators at Westminster, who have passed an Act to "put them up," not "put them down."

Stephenson had to put up with terrible opposition born of ignorance and stupidity when he commenced running locomotives, but most of us had hoped we had emerged from the dark ages, and thought it impossible to find any body—not to mention a magistrate—exhibit such crass stupidity as to declare a magnificent new invention, and one which the country has recognised by an Act of Parliament, a nuisance.

The bye-law of 1884 is ineffective, and bye-laws to affect motor-cars must be made under the Act of 1896. Mr. Hollier had a clear case for appeal, and should have applied for a special case to be stated after the decision was given.

Folkestone, Yours, etc.,  
Sept. 18th, 1899. T. W. STAPLEE FIRTH.

### THE CINEMATOGRAPH ON TOUR BY MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My route for the past week has been Whicham, Rusland, Hawkshead, Troutbeck, Windermere, Greenodd, and Staveley, meeting, on the whole, the best roads we have yet had to travel over, although two or three long and steep hills have been surmounted despite the pessimistic prophecies of some of the local quidnuncs, who declared we could not do so. If they had only seen Irton Fell and Sandbank Hill, which I described in a previous letter, they would not have considered them so formidable. Owing to the non-arrival of our petrol through the delay of the railway company, we had to drive to Whicham and Rusland from Broughton, but

started on Wednesday again with the car for Hawkshead, a quaint old village between Coniston Water and Lake Windermere, passing Mr. Ruskin's residence *en route*. On Friday we ascended the steep and rugged hill at Troutbeck on the road to the famous Kirkstone Pass, and successfully accomplished the journey. Quite near our location at Troutbeck occurred a day or two previous the accident to an Edinburgh car concerning which I enclose you a couple of cuttings from the local papers. The account given in one has quite an unconscious touch of humour about it, for we read that "all but the woodwork was consumed," which caused a friend of mine to remark in a pensive way, "Good old wood!" to remain unburnt whilst the metal blazed away. Touching this accident, hearing that the party were from Edinburgh, of course our sympathy was very keen. I do not think motorists should be disheartened by these occasional mishaps. We, in our turn, after getting up to Troutbeck had to descend the same brow, and it certainly was an experience! Our tire and band-brakes both applied hard home could not hold the car, and as we were about half-way down we could smell the leather of the band-brake singeing away. At the bottom of the hill was a sharp turn to the right on to the Ambleside road, with a nasty dip like a deep gutter caused by recent rains to negotiate at right angles, and although the car was fairly running away we kept our heads, and, Mr. Sinclair having a firm grip of the steering handle, we dashed into the dip, and skilfully turning at the right moment with the least possible swerve we fairly bounded on to the Ambleside road with a momentum that was something to be remembered. We found that we had fractured the water pipe just at the joint underneath, and on getting into Ambleside enlisted the services of Mr. Tyson, cycle agent there, who soon brazed it afresh, and added a piece of wood to each side of the hand-brake to enable us to get an even tighter grip. Off we went to Greenodd, which was a lovely drive, ten miles of it being by the side of charming Windermere.

We rode the twenty-six miles yesterday from Greenodd to Staveley in drenching rain, which naturally made the roads heavy. Another gentleman I have met *en route* has expressed his determination to go in for a car, and I have given him every encouragement to do so.

Yours, &c.,

J. T. WEST,  
Staveley, near Kendal, *Manager of the Modern Marvel*  
Sept. 19th, 1899. *Co., Ltd. (of Edinburgh).*

[From the cutting enclosed relating to the accident at Troutbeck we learn that while the motor-car was so seriously damaged that it had to be "abandoned," the occupants were uninjured. It appears that "the visitors found the ascent too steep, and after struggling for some distance the petroleum ignited and the motive power ceased. The boiler burst and set the car on fire, and presently all but the wood-work was consumed." Had the local reporter been on the "derelict" motor-car he could hardly have more completely muddled his account.—ED. M.-C.J.]

### ENGLISH v. FRENCH-BUILT MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We, as an English manufacturing company, are naturally very much elated at the prospect of a complete boycott of everything French. Hitherto, owing to some absurd prejudice, Englishmen have favoured automobiles of French manufacture, and have sent English money to France when it is quite possible to obtain in England English-made automobiles which compare favourably with those of French manufacture, and which are in fact very much better made than any French machine yet produced. Should the boycott become an accomplished fact, the English automobile manufacturers will undoubtedly receive a large number of orders for machines from Englishmen who would under other circumstances entrust their orders to French makers, and it is therefore probable that the disordered state of internal

affairs in France may have the effect of stimulating the automobile and other industries in England to such an extent that in a few months time this country will have considerably improved its already flourishing condition.

"It's an ill wind that blows nobody any good."

Yours faithfully,

THE MOTOR MANUFACTURING CO., LTD.,  
47 Holborn Viaduct, E.C., ALFD. BURGESS,  
September 19th, 1899. Secretary.

[It is quite clear that the proposed boycott of the Paris Exhibition will not take place. Probably a good way of attaining the object suggested by our correspondent will be for English motor-car manufacturers to secure the entry of British-made vehicles in Continental races, and win the prizes hitherto monopolised by the machines of Continental manufacture.—ED. M.-C. J.]

## SCOTTISH NOTES.

### An Incident in the Trossachs.

THE man who is possessed of a reasonable amount of *savoir faire* is sure to get on in this world, and the remark is specially applicable to chauffeurs. I was having a chat this week with a gentleman who had just returned from a most enjoyable motor-car tour in the Highlands, and in the course of our talk he mentioned a "big spill" which had occurred, but fortunately not to the automobilists. It appears they were proceeding along at a moderate pace, when they saw a two-horse brake coming round the corner of a road at right angles to the one over which they were travelling. The sole occupant of the vehicle was the driver, who came rapidly round the corner without keeping a proper look-out. As a matter of fact he did not see the motor-car till he was shot into a ditch at the roadside, where he was in a position to contemplate the "horseless wonder" to his heart's content. One of the horses had seen the car, however, before him, and plunged to the side, falling into the ditch, too, and upsetting the wagonette. Almost instantly the motor-car party had their engine stopped and the machine drawn up at the side of the road, while all were soon busily employed assisting the unfortunate driver. The horses' heads were held down till the harness was loosened, the "Jehu" assisted out of his damp seat, the vehicle put on its wheels again, and affairs generally put right all inside five minutes. And then—this is where the result of a little tact came in—the driver profusely apologised for having occasioned so much trouble, and admitted that the fault was entirely his own as he had not kept a proper look-out, thanked the automobilists for their prompt assistance, and parted the best of friends. His vehicle had to run in connection with the steamboat service on Loch Katrine, and it was of vital importance to him that he should be up to time. Through the prompt assistance of the party who had innocently been the cause of his spill he was enabled to keep faith with the public. It is pleasing to have to record such a happy termination to what might have proved a very nasty accident. The usual result of such a *contretemps* in mutual recrimination is a police-court summons a week or two afterwards for the chauffeurs.—*Verbum sap.*

### "Still They Come!"

AGAIN news reaches me of more of the Scottish nobility taking kindly to the motor-carriage. Lord Hamilton of Dalzell, or at least the younger members of the family—his lordship is not in the best of health at present—have been displaying a keen interest in the horseless vehicle. An elegant motor-wagonette was at Dalzell, his beautiful estate in Lanarkshire, last week, and the car was kept busy all day gliding through the "policies" with beves of fair ladies and several members of the sterner sex, who were experiencing their first ride on the new carriage. Captain Campbell, the eldest son of Lord Stratheden and

Campbell, who is married to a daughter of Lord Hamilton, expressed himself as hugely pleased with his trial, while the members of the Hamilton family were equally delighted, and we hope to hear soon that they have determined to follow the lead of other members of the aristocracy and become possessors of cars of their own.

### Progress.

I REFERRED recently to seeing a certain popular master of foxhounds out driving in a motor-car, and commended the broadminded and sportsmanlike spirit shown by him in not condemning a thing untried like too many of his sporting brethren who appear to have an unmitigated contempt—not to speak of hatred—for the motor-car. I was therefore the more pleased last week to see him in a comfortable little motor-wagonette, along with his wife and another lady and gentleman friend, "whirring" swiftly along a road in the neighbourhood of Lesmahagow. On making inquiry I found that they had been paying calls on friends in various parts of the country, and had adopted the automobile as being the latest and most up-to-date fashion of getting through this pleasing function. When I saw them it was raining heavily, but like true sportsmen and women they were "all smiles," and appeared to consider the rain a matter of too small moment to spoil the novelty of the run. All this indicates substantial progress, and goes in support of the belief which is held by the best informed people in the motor-car world that 1900 will witness a "boom" in motors.

### Touring Routes in Scotland.

I HAVE this week received a letter from a correspondent who has been touring in the southern counties of Scotland. He writes as follows:—"I have been tapping virgin country this week, and the excitement and abounding astonishment manifested by the populations of the scores of villages in the country I traversed on my 'Stirling-Daimler' reminded me of my experiences in the very early days of the motor-car movement in this country. We have got so accustomed to self-propelled vehicles in our own part of the country that we are becoming, I am afraid, quite unconscious of the mechanical achievement which carries us along so sweetly hour after hour with no visible effort until we become oblivious of distance. It is when we get away, however, from the 'beaten tracks' and make our way into the remote corners of the country, as I did recently in the county of Wigtonshire and the Mull of Galloway, our ungrateful memories recall us to a sense of our privileges and to a fresh admiration of the skill and industry which has produced the modern motor-car. As a route for good roads and for variety of scenery I can recommend the following: Glasgow to Kilmarnock and on to Ayr (32½ miles)—the land o' Burns; continue through Maybole to Girvan (21½ miles). The road the whole way is excellent, and 20 to 30 miles can be had on 'top speed' running without change. From Girvan to Ballantrae (13 miles) the road is along the edge of the sea, and in parts has scenery as wild as is to be found in the wildest parts of the Western Highlands. From Ballantrae the road runs inland through fine wooded country, and the descent of Glen App is charming. After a few more miles running, the shores of Loch Ryan are reached, and for almost the whole way the road skirts the Loch to Stranraer. From Stranraer, Portpatrick (8 miles) is easily reached. The Mull of Galloway Road along the shores of Luce Bay is fair and the scenery varied. The route I have briefly sketched is one of the most delightful I have covered by motor-car, and well worth making a special note of."

"BROWN HEATHER."

THE Strathmore Automobile Co. has just been formed at Kittery, Me, U.S.A., to deal in self-propelling vehicles. The capital is £200,000.

## RECENT EXPERIENCES WITH STEAM ON COMMON ROADS.\*

BY JOHN I. THORNYCROFT, F.R.S.

AS from the very earliest times means of communication and of transport have been of the first importance, it was inevitable that in the very infancy of modern engineering men should turn to the steam engine for a solution of the ever-pressing problem of rapid and economical transport; and accordingly we find that nearly three hundred years ago Ramsay invented and patented a steam wagon, followed some years later by the illustrious Newton.

Coming down to more recent times, to mention only one of the several prominent builders of steam coaches in the early part of this century, I may remind you that Mr. Hancock's vehicles ran fairly successfully at speeds from nine to fifteen miles per hour, plying daily through the crowded London streets between the City and Paddington, nearly seventy years ago.

The earlier builders had, however, to contend against almost insuperable obstacles: the general want of good roads off the great highways, the rudimentary condition of engineering manufacture, and the hostility of the great mass of the nation, made permanent success impossible at that time.

Experience gained with the water-tube, or "express," boiler, combining the three essential requisites of high pressure, lightness, and durability, and the small quick-revolution engine, together with the very greatly improved materials and manufacturing processes of recent years, enable us to now attack the problem with every prospect of lasting success.

But progress is, unfortunately, still impeded by the law: the effusively welcomed "Locomotives on Highways Act, 1896," though removing some obstacles, and thus giving an impetus to the manufacture of the lighter types of road locomotive, is found to be a very imperfect measure, and must be materially amended to enable the widespread demand for speedier and more economical transport of heavy loads, on ordinary highways, to be met.

The clause that presses most hardly is that restricting the weight of vehicle, unladen, to less than 3 tons; one finds that merchants and manufacturers insist on loads of from 5 to 10 tons being dealt with, and it is commercially impossible to build a durable vehicle for this service within the above limit of tare; I say "commercially" and "durable," as it is quite conceded that, by the free use of aluminium, special steels, and special workmanship, an expensive vehicle may be easily built which shall perform this arduous task admirably during a short period, as, for example, on a series of trial runs; but it is needless to point out that this is not successful commercial production.

In France, makers are allowed a greater latitude, and have devoted themselves more particularly to the problem of passenger transit; they have found that to carry a load of about 1½ tons of human beings they require a tare of 4 to 5 tons; while I believe the ratio of tare to net need not be so great as this, it is yet desirable to point out that the wear and tear of vehicles due to road shock being a kinetic action varies probably as the square of the speed, so that the demand for greater loads at higher speeds involves the construction of vehicles of durability vastly greater than those at present in general use.

In Lancashire, loads of as much as 10 tons are carried daily on one four-wheeled "lurry" drawn by horses over paved roads at the crawling speed of about two miles per hour; durable steam vehicles will be built to transport as great or greater loads at more than twice this speed, and at about one-half the cost when this repressive clause is withdrawn.

Presumably the object of fixing a limiting tare is to provide against undue damage to the roads; but this would be better attained by making the total tire width a function of the gross load. It is not uncommon in Lancashire to find a gross of 12 tons on a total tire width of 18 in. (4 in. by 4½ in.), in addition to which the damage to road surface caused by the horses' hoofs has to be remembered; there is thus, neglecting altogether the latter consideration, 2⅓ ton per inch width of tire in these everyday cases.

Take now the extreme case of a steam vehicle having a 5-ton tare, carrying a useful load of 10 tons, and, with fuel and water, weighing a gross of 16½ tons; at the same rate as obtains in the Lancashire luries, a tire width of  $\frac{16\frac{1}{2}}{2\frac{1}{3}} = 25$  in., total, will be required, which may be obtained by making the leading wheel tires 5 in. wide and the driving tires 7½ in.

On the question of road damage, as Sir F. Bramwell points out in his paper read before the Oxford meeting in 1894, a House of Commons Committee so long ago as 1832 reported that "As steam vehicles admit of greater breadth of tire than other carriages, and as the roads are not acted on so injuriously as by the feet of horses in common draught, such carriages will cause less wear of roads than coaches drawn by horses."

Too much stress can hardly be laid on the necessity of building durable vehicles; it is certain that unless designed with generous proportions, excessive wear and tear soon takes place; in this connection it is useful to recall the experience gained by the Russians some years ago. The Messrs. Winans built some locomotives for the Czar, which were paid for by weight; in consequence it was jestingly said that these engines were cast whole, taken from the sand red-hot, water poured in boilers; sufficient steam being thus generated for the trial run. They were, of course, very heavy, and were, later on, displaced by others of lighter design. The sequel, however, is interesting. The lighter engines soon

went to pieces in the hands of Russian drivers; Messrs. Winans' old engines were replaced, and did excellent service during many years.

I trust you will excuse my dwelling so much upon this point of tare weight; but it is the one and only obstacle now remaining in the way of the complete solution of the problem, and that must be my justification.

The law allows each light locomotive to haul one trailing vehicle, their joint tare not exceeding 4 tons; and it might be thought that this would permit the successful transport of heavy loads.

Experience shows, however, that while this is the case, *per se*, manufacturers and merchants can rarely be found to view this method with favour owing to the difficulty anticipated in manoeuvring into and out of yards and wharves with a second vehicle; and their present attitude is strongly in favour of the whole load being borne by the motor-vehicle alone.

I proceed now to a brief description of some of the vehicles built to my designs during the past few years.

To begin at the beginning, a light steam-driven van was built in 1896, and designed to carry a useful load of 1 ton at a speed of from 8 to 12 miles per hour; the propelling machinery is in the fore part of the vehicle (the front wheels are the larger pair) and is chain-driven and front driving. The engines are a pair of small inverted vertical tandem compounds, having cylinders 2 in. and 4 in. in diameter by 3 in. stroke, and making about 500 revolutions per minute at a vehicle speed of 8 miles per hour. A machine-cut toothed pinion on the crankshaft engages with a spurwheel on a countershaft which, in its turn, rotates the driving wheels through a pair of block chains driven by suitable sprockets. The countershaft carries the usual differential or "jack-in-the-box" gear to facilitate steering.

The boiler is of the water-tube type, in which the water-tubes also form the firebars, and was designed for a very light launch boiler; the tubes are of solid-drawn steel ⅝ in. o.d.; the heating surface is about 50 square feet, and grate area about 2½ square feet. An air-condenser is fitted on the roof of the van; this is constructed of a series of thin copper tubes and weigh less than 2 cwt.; the cooling surface is about 130 square feet. Placed in this position, and concealed from view by the side boards, it occupies little room, and does not have the effect of making the vehicle appear bulky; under ordinary circumstances it condenses most of the exhaust steam from the engine. The safety valve discharges also into the condenser, which thus provides a silent and visible blow-off; this is a point of some importance in steam-driven vehicles plying in crowded thoroughfares.

The air condenser, of course, gives no vacuum; indeed, there is no doubt but that it increases, and, if not suitably arranged, very greatly increases, the back pressure of exhaust.

The condensed steam also is very often so contaminated with grease from the engine as to be unfit for boiler use. It introduces the further disadvantage of increased cost, weight, and complication, the latter both by reason of its own construction and of the additional piping and connections involved. It is doubtful whether these demerits do not more than outweigh the two nominal advantages its use confers, namely, less deposit of lime in the boiler, and the necessity of carrying a small feed tank only. There is the further, and undoubted, advantage of hot feed, but this is simply obtained otherwise by constructing the exhaust silencing vessel as a feed heater.

The condensed water drains from the condenser into a hotwell, and is thence re-delivered to the boiler by a feed pump driven from the engine shaft. To prevent any accumulation of pressure in the condenser from accidental causes, communication with the funnel is preserved through a connecting pipe.

(To be continued.)

## STOCKS' ATTEMPTED END-TO-END MOTOR-TRICYCLE RIDE.



MR. J. W. STOCKS, the old long-distance champion cyclist, commenced a ride from Land's End to John o' Groats on an Ariel motor-tricycle at 6 a.m. on Sunday last. The roads were in good condition between Land's End and Exeter, but when about seventy miles from the starting place the exhaust valve of the machine broke. It took Mr. Stocks fifty minutes to repair the damage, but he reached Exeter only twenty minutes behind the scheduled time. The distance from Exeter to Bristol was done in good time, the roads, though rather heavy, being dry. Tewkesbury (243 miles) was the next stoppage place, and thence, leaving at 6.30 p.m., or twenty-one minutes late, Mr. Stocks rode without halting to Warrington (358 miles), the distance being done in 19½ hours, which gives a very good average of 18½ miles an hour. Just before he entered Warrington rain began to fall, and he made a short stoppage, thinking that it would pass over. On the road to Preston rain came down very heavily, and he was compelled to shelter for more than two hours under a bridge. From that point to Kendal travelling was exceedingly difficult in a down-pour of rain, the roads being in a fearful condition. Mr. Stocks reached Kendal four hours behind the scheduled time, covered with mud, and at this point, owing to the state of the roads and the prospect of a bad ride to Shap, he relinquished the undertaking and returned to Birmingham on Monday. In view of the wretched weather conditions, we think that Mr. Stocks was wise in relinquishing the ride; the only wonder to us is that he stuck to it as long as he did, especially seeing that during the last eight hours it was raining heavily all the time.

\* Paper read before Section G of the British Association, Dover Meeting.

## MOTOR-CAR LICENCES.

A RETURN has just been issued by the Local Government Board of the amount received in each administrative county and county borough in England and Wales for local taxation, licence duties, and penalties under the Local Government Act of 1888 for the year ending March 31st last, from which it appears that the total amount received from all sources was £3,433,192 15s. 6d., and in addition to that £6,645 13s. 5d. was received in penalties. As may be imagined, the bulk of this amount was received from spirit licences, the amount being £1,372,034 19s. 1d. With regard to the Light Locomotives on Highways Act we find that the total amount received for locomotives under this Act was £112 7s., of which £15 15s. was received from the county boroughs and £96 12s. from the counties.

The following table will no doubt prove of interest to our readers, as it shows at a glance the amount received from each county and each county borough in England and Wales.

| COUNTIES.            | £  | s. | d. | COUNTIES—CON.              | £ | s. | d. |
|----------------------|----|----|----|----------------------------|---|----|----|
| Buckingham .. ..     | 10 | 10 | 0  | Somerset .. ..             | 8 | 8  | 0  |
| Durham .. ..         | 6  | 6  | 0  | Suffolk (East Division) .. | 2 | 2  | 0  |
| Gloucester .. ..     | 4  | 4  | 0  | Suffolk (West Division) .. | 2 | 2  | 0  |
| Hants .. ..          | 2  | 2  | 0  | Surrey .. ..               | 2 | 2  | 0  |
| Hertford .. ..       | 2  | 2  | 0  | Worcester .. ..            | 2 | 2  | 0  |
| Lancaster .. ..      | 23 | 2  | 0  | Carnarvon .. ..            | 4 | 4  | 0  |
| Leicester .. ..      | 4  | 4  | 0  | COUNTY BOROUGHES.          |   |    |    |
| Lincoln (Lindsey) .. | 2  | 2  | 0  | Coventry .. ..             | 2 | 2  | 0  |
| London .. ..         | 5  | 5  | 0  | Hanley .. ..               | 2 | 2  | 0  |
| Middlesex .. ..      | 6  | 6  | 0  | Leeds .. ..                | 6 | 6  | 0  |
| Norfolk .. ..        | 4  | 4  | 0  | Newcastle-on-Tyne ..       | 3 | 3  | 0  |
| Nottingham .. ..     | 5  | 5  | 0  | Swansea .. ..              | 2 | 2  | 0  |

## TROUBLES OF A MOTOR-CAR INVENTOR.

At the Birmingham Police Court on Wednesday, John Thomas Wrides, Moseley Road, summoned Frederick Gilbert, carriage builder, John Bright Street, for assault. Mr. P. Baker, who prosecuted, stated that Wrides was the inventor of a motor-car which did not vibrate and did not cause a smell, and he instructed the defendant, who was a member of the firm of Gilbert & Sons, to build a "body" for it. He paid £40 as a deposit towards the cost of making. Plaintiff was in negotiation for the sale of his invention, but the prospective purchaser wished to make experiments before concluding the bargain. There was still a balance owing on the account, but that did not justify the defendant in assaulting Wrides when he desired to take the machine out to try it. Plaintiff stated that he removed the motor-car from the premises, and shortly afterwards, while travelling down the street, defendant and some of his workmen ran after him, mounted the car, and pulled him off, and the defendant struck him on the right temple. In cross-examination, plaintiff admitted that he had not finished paying for the work which defendant had done, and that at that moment he had a writ in his pocket which had been served upon him for the balance, £76 15s. Mr. Barradale: Did you ask any one's permission to take it away, or say you were about to take it? Plaintiff: I never thought it necessary. In answer to another question, plaintiff admitted that the morning he took the car out he had been requested to pay a further instalment. Plaintiff called a witness, who was not, however, able to speak to any assault being committed by defendant. Defendant denied that he struck plaintiff. The only occasion on which they came into contact was when plaintiff banged against him in trying to re-take possession of the car. The summons was dismissed.

## THE FATAL MOTOR-CAR ACCIDENT AT EDGE HILL.

(From Our Own Correspondent.)

At present the cause of the fatal motor-car accident at Edge Hill, near Kineton, is still unexplained. The accident occurred on Sunday, and resulted in the death of Nina McLeod, housekeeper, aged about forty-eight, and five others being injured. For several years Radway Grange, which lies at the foot of the hill, has been rented by Mr. Jamieson, and during the fortnight preceding the accident the Grange had been occupied by Mr. and Mrs. G. O. Haigh, relatives of Mr. Jamieson. A German Daimler motor-car was hired by Mr. Haigh from a motor-car company, and a man named George Breakwell was engaged as driver. On Sunday, Breakwell is understood to have obtained permission to take a party of the servants at the Grange out in the car. Five of these left the Grange in the car in addition to Breakwell the driver. These were Nina McLeod, housekeeper, and her niece, Maggie McLeod; Annie Ehrhardt, lady's maid to Mrs. Haigh; Thomas Rushworth, gardener; and George Metcalfe, butler. Avon Dassett was visited, and all seems to have gone well until the party had almost reached home. The car was seen descending Edge Hill, one of the steepest in the country, by some cyclists, who aver that it passed them at a rate of thirty or forty miles an hour, and that the women were screaming. At the foot of the hill the motor-car was stopped, and it is said the girls descended. About a quarter of a mile from there, however, the vehicle was shortly afterwards found in a hedge. All the occupants had been thrown out, and several of them were seriously injured. Metcalfe appears to have got off the lightest, and after doing what he could for the others he

opened the back of the car and put out the burning oil, having previously watched the driver start and stop the machine. The car had evidently been over and righted itself, as one side of the splash-board was broken, the lamp was bent, the front seat was twisted up, the hood of the back seat was out of place, and the tire was off the front wheel. The band of the running gear was also off the front wheel, and the pair of front wheels had jumped clear of their pivot. One side of the car was covered with mud.

Dr. Tenbon was hastily summoned from Kineton Church, and in the meantime the injured were removed to the Grange. Breakwell appeared to be the most seriously hurt. He had lost a great quantity of blood. It was found that his skull was fractured at the base, but his head was so cut that it was difficult to tell the extent of the fracture. Nina McLeod appeared to be suffering from shock, Rushworth was shaken, cut and bruised, the young woman Ehrhardt had a badly sprained shoulder, whilst Maggie McLeod was badly bruised.

Nina McLeod died during Sunday night.

The inquest was held at the Institute, Rodway, on Wednesday, before Mr. Theo. Christophers, coroner for South Warwickshire. Evidence was given that after coming down Edge Hill the driver took the car up again a part of the way and made a second descent. The bottom was reached in safety, but 500 yards further on the steering became erratic, with the result that the car twisted round, ran on to the turf, and then rolled over on its side. No explanation was given as to the real cause of the accident, and the inquiry was adjourned until October 13th, to allow of the attendance of the driver, who it is hoped will recover.

## FINED FOR FURIOUS DRIVING.

At Sleaford (Lincolnshire) Police Court, on Monday, Mr. J. W. Stocks, the well-known cyclist, was summoned for furiously riding a motor-cycle during the course of his recent twelve-hours ride. It was stated that defendant and two other record-breakers were riding at the rate of nearly twenty-five miles per hour. Defendant, who did not appear, was fined £3 and costs.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

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## COMMENTS.



MISS BACON's letter in another column will be read with a sigh of relief by those members of the Automobile Club who were beginning to fear the invasion of the fair sex into their cosy quarters in Whitehall. It is very clear that there is no organized attempt at intrusion, and Miss Bacon's discovery that ladies could not join the Automobile Club had a journalistic rather than a practical origin. Of course we are not opposed to ladies driving motor-vehicles, and our publisher welcomes their

adhesion to our subscribers' list. If Miss Bacon will read our "Comment" of last week again she will see that our attitude was not one of opposition to her proposal but of curiosity. What was the *raison d'être*? What would be done?—were questions as to which we awaited replies with interest. And those answers given in our "Correspondence" columns this week are re-assuring in their harmlessness. Who would be so ungallant as to debar the ladies studying the mechanism of the car or wandering about in workshops after working hours? One further point we would note: the preliminary meeting will not be held in the sanctum of the gentleman whose telegraphic address is "Vatican, London," but at 108 Cromwell Road, S.W., where Viscountess Harberton will probably endeavour to convert lady motorists to bloomers and rational dress. Really, the matter is developing alarmingly, and we hardly know what to do, in view of the procession of "blומר cyclists" who went to Reading last Saturday, headed by Lady Harberton, and startling all the farmers who were attending the market. A livery for motor men has already been discussed in our columns; perhaps the "Worlding" might be able to suggest something for motor women—if Miss Bacon has no objection. If the "rational dress" advocates get hold of lady motorists, such dresses as those in the above little sketch will be tabooed. What next?

### Modesty in American Calculations.

THE modesty of the Electric Vehicle Company of New York, New Jersey, and a number of other new places is so reassuring as to the character of Yankee automobilists that we almost feel inclined to withdraw our recent utterances concerning American bluff and give a donation to the fund which may shortly be started to find a George Washington among certain sections of the industrial world of the States. Here is the statement that thus causes us to reconsider our sceptical attitude of the past and wonder whether, after all, the Americans may not possess the virtues of modesty, humility, and general decorum in business:—"The Electric Vehicle Co. is rapidly preparing a system of urban and suburban service which at an early day will greatly lessen the usefulness of the horse. The first and most conspicuous extension of the automobile work will be in New Jersey. The Company now has 4,500 vehicles under construction for use in that State." Had the Electric Vehicle Co. claimed to have

4,555 vehicles under construction we might have cabled for confirmation of the news—but 4,500 is, of course, a different matter.

### Saving the Roads.

WRITING to a Chester journal that recently raised a query with regard to the Duke of Westminster's interest in automobilism, Mr. E. Shrapnell Smith has asserted that the damage done to the roads by mechanically-drawn carriages such as are now becoming familiar in this country is considerably less than that caused by the hoofs of horses. The point is, of course, quite commonplace to those who are acquainted with the subject, but it is one that cannot be too frequently demonstrated. If local authorities could be persuaded that such is actually the case, there should be little difficulty in obtaining their consent to improvements in making up, widening, straightening, etc., on the lines mentioned in these columns last week. The difference between the hoofs of a horse and the rubber of a tire should be apparent—even to a vestryman or other important person.

### "Motor-Car Accidents."

WHENEVER a horse bolts and ruthlessly turns its driver into a ditch on seeing a motor-car in the distance the newspapers promptly report a "motor-car accident." Near Ingatestone, in Essex, the other day a horse took right at a motor-car which was fifty yards away, with dire results to its driver. It never occurred to the enterprising reporter that this was a carriage accident; he at once set it down as a "motor-car accident," although the vehicle was never endangered and its occupants lent assistance to those who were hurt in consequence of the state of the horse's nerves. This may be a small matter to prejudiced people, but motorists strongly object to such disasters being labelled "automobile" without thought or reason.

### "The Coming Craze."

WHAT the *Daily Mail*, with questionable orthology, styles the "Coming Craze," is apparent to all moving in automobile circles. The various firms engaged in the motor-car industry of Coventry and elsewhere have orders on their books to carry them well over Christmas, even should orders cease to come in from the present time; but that this is not likely to be the case is proved by the many inquiries now being received by manufacturers. In many instances recently agents' demands have been limited by the supply, and the cry has gone up repeatedly for more cars—French or English. The finest barometer of the state of an industry is the Stock Exchange, and, as our readers no doubt are aware, since the change of directors the shares of the Daimler Company have steadily risen, until they now stand at 6½, while the British Motor Company's shares are also quoted. Some shareholders in the Motor Manufacturing Company, Ltd., too, have lately been offering to buy shares at a price that shows a considerable rise during the past few weeks. The Scotch Motor Company's

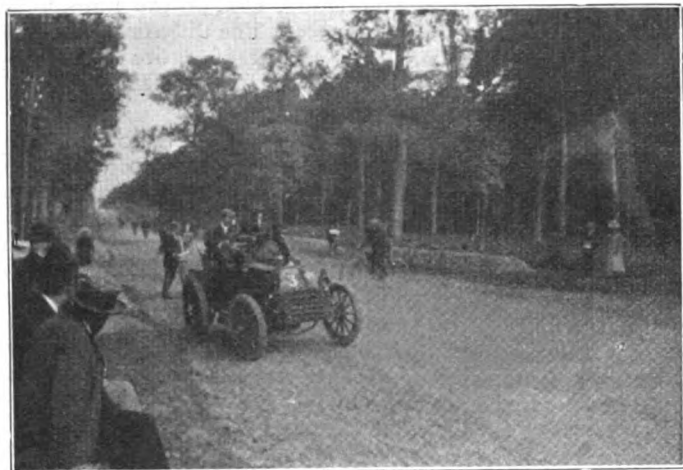


shares are also favourably looked upon; and therefore, with all these outside evidences of improvement in the industry, it is not unreasonable for us to expect the advent of a number of new companies. In many of these the share capital is being privately subscribed, in one instance the share capital amounting to £150,000. A new company, which will shortly be brought before the public, will have, we are informed, a capital of several hundred thousand pounds, while another company, shortly to be registered, will have as subscribers a number of the leading English automobilists. This latter company will be for the purpose of acquiring all the patent rights for this country of Messrs. De Dion and Bouton, and all machines imported by that firm will have to pass through the hands of the English concern. The number of manufacturers of motor-cars at present at work in Great Britain is small, but experiments are being made by several Northern engineering firms, with, in many instances, successful results. But with all the firms engaged at present and likely to be in a position to supply during 1900—including cycle firms making motor-tricycles—we are of opinion that it will be impossible to meet the demand that those who are in a position to know are assured will arise.

### Bumpy Roads and Loose Chains.

SATURDAY being a fine and bright day, one of our staff made up his mind to ride down in his car to Guildford for luncheon. As far as Kensington High Street all went well, but just by the shops the road was found to be "up."

There was no policeman on duty to divert the traffic, but observing a street on the left, and that the cabs going in our



THE PARIS-BOULOGNE RACE—LEVEGH ON MORS CAR ARRIVES AT "CONTROLE."

direction were turning down there, we followed. We may mention that some members of Lady Harberton's party, including Miss Bacon, on bicycles, were keeping pace behind us. These, with the exception of the lady mentioned above, adopted the sensible plan of dismounting, walking the seventy or eighty feet rather than risk the intricacies of a detour over unknown and shockingly macadamised roads. The turning we took, we soon found, branched in the wrong direction and brought us back on the high road again. Making inquiries, we found we ought to have turned to the right some considerable distance before the part where road repairs were in progress. Proceeding up Church Street, the turning in question, we soon got on the right road again. The wood pavement between Church Street and Addison Road is in a shocking condition, worse than the worst macadam, we should imagine, and in consequence one of our chains broke and became entangled. Half an hour's delay ensued, and the services of a cycle repairer were requisitioned for the purpose of obtaining a nut, for which the exorbitant charge of sixpence was made. Matters being adjusted, a fresh start was made, when off came the second chain. This being put right and

all hope of reaching Guildford for lunch being abandoned, the car was turned round with a view to its being taken back to the stable. But, alas! our troubles were not yet over, for we had not proceeded far on our homeward journey before the nut, which had been purchased for sixpence, broke, and off came the chain again. This was the "last straw," and proved too much for us, so leaving the car in charge of our man the services of a penny omnibus were utilised. And thus ended our Saturday's ride.

### An Unmerited Punishment.

We may mention that Miss Bacon has addressed to the writer an energetic protest at our leading her astray. For our mistake we are sorry and beg to tender that lady our sincere apologies—but, at the same time, we do not consider we deserve to be "stuck" on the rise up Church Street, a punishment Miss Bacon evidently considers "fits our crime."

### A Motor-Omnibus Service in London.

LONDON is at last to be provided with a motor-omnibus service, two vehicles having been inspected and licensed by the Hackney Carriage Inspector at Arbour Square Police Station on Saturday last. The vehicles are the property of the Motor Traction Company, Limited (late the London Steam Omnibus Company, Limited), and will commence running early next week between Kennington Gate and Victoria. The vehicles are already familiar to most of our readers, being similar to the one exhibited at the Agricultural Hall in July last by Messrs. Bayley's, Limited, Newington Causeway, S.E., and illustrated in our issue of July 7th. The motive power is supplied by a four-cylinder Daimler engine of 12 h.p., the vehicle having accommodation for twelve inside and fourteen outside passengers.

### One Result of Exceeding the Legal Speed.

As we pointed out in our last issue, one result of Goodwin's recent road record and the great speed attained by the motor-cycles and vehicle which paced him has been that the Chief Constable of Huntingdonshire has issued public warning to motor-car drivers, motor-cyclists, and cyclists to the effect that the police have received strict instructions to proceed against all who may furiously drive or ride their machines. One of our visitors at the office this week was Mr. Dan Albone, of Biggleswade, who reports that the police in that district are just now paying unusual attention to motor-cars, and that as a consequence of the recent scorching the county of Huntingdon is at present unsafe ground even for those automobilists who are content to travel within the limits of speed allowed by law. *The Motor-Car Journal* has all along been against automobilists travelling at excessive speeds, and we are not surprised at the action taken by the police. Unfortunately automobilists as a body are in the district named being made to suffer for the action of a few. Rapid as has been the progress made with motor-vehicles in this country, the movement has not yet developed to such an extent that those interested in it can treat the creation of a band of anti-automobilists with impunity.

### Practical Experience with the Stanley Steam Car.

AN American gentleman, Mr. H. P. Nottage, of Providence, R.I., who has purchased a Stanley steam car, sends an interesting letter to the *Horseless Age* anent this ingenious vehicle. The gentleman in question remarks that "the gasoline tank holds a little less than three gallons, and with this quantity of oil they (the Stanleys) can run the carriage seventy-five miles, but I have not heard of any one else who can do it yet. After having a carriage less than one week I find that I use about a gallon and a half of gasoline in sixteen

miles, and the water tank is then only one-quarter full. The automatic pressure regulator is set at 160 lb. I find that in speeds up to fifteen miles an hour the gauge holds steadily at 150 lb. on good roads. It seems to me that I am using fuel to get up 10 lb. of steam that I have no use for. On a run of seventy miles with one of Stanley's men, who handled the carriage very skilfully on muddy roads, and with occasional rain, we made the distance in four hours and fifty minutes (four hours actual running time). The water ran out at the end of the first thirty-three miles. We made twenty-one miles the first hour. Two and a half gallons of gasoline were taken in at thirty-six miles. Water and one gallon of gasoline were put in at sixty miles. We had, I should judge, a gallon and a half of gasoline left at the end of the trip. This was a new carriage right from the factory on its way to my home, and the run was made without a single adjustment, and with nothing done to the machinery except to oil up." The correspondent adds that "the carriage has not given a particle of trouble." The only complaint that he has to make is that he cannot run the vehicle so economically as the makers; and the object of his letter is to induce the makers to instruct users of Stanley cars "the way they do it."

#### The Speed of Cars.

At the meeting of the Worcester County Council this week the Earl of Coventry expressed the hope that the law should be enforced regulating the speed at which motor-cars should be allowed to proceed along the highways. He had recently received two complaints from his own neighbourhood in regard to the reckless speed at which motor-cars had been driven. In one case a team of horses became very much alarmed. The driver put up his hand to warn the man in charge of the motor-car to moderate his pace, but he took no notice. The chairman promised to bring the matter before the Standing Joint Committee with a view to a notice being issued by the police with reference to the rate at which motor-cars should be allowed to travel. So long as the police do not exceed their duties motor-carists will not complain, but we must protest against the idea which is sought to be instilled into the people in many districts, viz., that motor-car drivers are a most discourteous race. There may be instances, here and there, where drivers have not responded to the raising of the hand, as Lord Coventry says, but they must not be taken as typical of the whole class, who well compare in manners with the drivers of horses.

#### Parliamentary Automobilists.

THE Rt. Hon. A. J. Balfour, M.P., has become the possessor of a motor-tricycle, and while staying at Whittingham was to be seen on it careering up and down the long avenues which intersect his beautiful "policies." One cannot usually learn to ride a bicycle without getting an occasional spill, and the same holds good with a motor-tricycle. The First Lord of the Treasury is not exempt from spills any more than the average automobilist, and last week he came a graceful cropper while endeavouring to perfect himself in the art of motoring. Fortunately neither Mr. Balfour nor his machine were in any way damaged by their somewhat sudden contact with mother earth, nor is the honourable gentleman's enthusiasm in regard to things automobile in any way lessened by the occurrence.

#### Improve the Roads.

THE advent of the motor-car has revived interest in our roads in a very marked degree. Last week we referred to the *Spectator's* plea for reform; now the *Speaker*, another of the sedate six-penny weeklies, adds its voice to the demand for widening and improving our highways, and adds:—

"Mr. Chaplin might do worse than appoint a small Departmental Committee to consider the whole question, and especially to decide whether further powers should not be given to the County Councils for the widening of existing and the construction of new roads. At present no land can be taken compulsorily for the purpose of widening a road without a provisional order confirmed by Parliament. This is an absurd restriction, existing in no other country—not even in Ireland. The County Council should be able to take land at any time on paying fair compensation, and the compensation should be subject to an allowance for betterment. This is the real key to the problem of pace on the roads. Before the roads of England can be used for high-speed vehicles they must be widened."

Every owner of a motor-car has often been inconvenienced by the presence of traction engines in our narrow, winding lanes. We ourselves have had to back into a ditch in order to avoid collision, and doubtless many others have been similarly placed. The *Contract Journal* is the latest organ to denounce the existing road surfaces as bad, and motor-car owners in the rural districts can help the movement towards a better state of things by impressing upon local and other authorities the necessity of maintaining the surfaces in a good condition, while asking for powers to widen roadways where such action seems necessary.

#### Horses and Hooters.

A TEMPERATE letter from Mr. D. Cecil Gibbs in Wednesday's *Times* deplores the speed of motor-cars and suggests that none should travel more than "eight miles an hour for, say, the next two years, by which time horses will have had the opportunity of getting used to them." That, however, does not affect the ways of horses born when the



THE PARIS-BOULOGNE RACE.—THE HON. C. S. ROLLS ARRIVES AT "CONTROLE."

time limit has expired. We believe that many of the accidents that have been caused of late have been owing to the regulation which insists that some loud warning should be sounded whenever vehicles approach. It is not the sight of the motor-car that is so distressing to the horse, but rather the sound of the hooter. Often have we seen drivers of motor-cars pass by horses that have been unmoved, but which would never stand still when "the sound of the hooter was heard in the land." Since writing the foregoing a member of the Automobile Club has written to the *Times* in a similar strain.

#### The "Princess" Motor-Car.

WITH reference to the remarks by "Hercules" in Midland Motor Notes" last week regarding the Motor Manufacturing Co.'s "Princess" car, we learn that Mr. Iden drove the vehicle on Thursday last week from Coventry to London in just four hours, averaging 23½ miles per hour, with a consumption of only three gallons of petrol, and without changing water. Later on in the day the car went

to Maidstone and back without the slightest mishap occurring. In view of such good results we are not surprised to learn that the Company are booking orders for this type of vehicle very quickly.

### "Liquid Moonshine."

APPARENTLY the progress of the automobile industry in the United States is being hampered—we do not say hindered—by the persistency with which the company promoter lays bait for investors. Tired of wonderful and impossible assertions with regard to electrical and steam vehicles, he is now exploiting liquid air and motor-cars in combination, promising all sorts of advantages and every range of speed for the liquid air method. The production of liquid air is, however, the point upon which he is invariably silent or dismisses it with the mere assertion that that will be arranged as soon as the company is formed, etc. Liquid air, forsooth! Liquid moonshine is the better term, and so all this talk is rightly called by our New York motor-car contemporary.

### THE ROUXEL MOTOR-VOITURETTE.

THE "Rouxel" is the name given to the latest motor-voiturette to be brought before the notice of the automobile world, and an illustration of which is given herewith. The car, which is of French construction, being made by Messrs. Rouxel & Co., of Boulogne-sur-Seine, is being introduced into this country by Robertson's International Motor-Car Agency, of Woodstone, Peterborough. Seating accommodation for two persons is provided, but an additional seat can be arranged in front for a third person if desired. The motive power is supplied by a 2½-h.p. petroleum-spirit



motor of the "Aster" type, which has already been illustrated in this journal, the ignition being electrical and the cylinder cooling effected by means of radial ribs. The motor is geared to the rear road axle by spur wheels, a two-speed gear being provided. The car can, it is claimed, attain any desired speed up to twenty-five miles per hour, and will mount all but the most precipitous hills. Two hand brakes are provided. The body of the car is spring suspended, while the wheels are of the cycle type, shod with pneumatic tires. The weight of the little car, when fully equipped, is given as 7 cwt.

MR. CHAS. LEMI, of 570 High Road, Leytonstone, who in the early eighties was a well-known London cycle agent, is anxious to take up an agency for motor-cars. His premises are well adapted for the purpose.

### JOTTINGS BY A WORLDLING.



BACK again in badly-kept London! The qualification is a specific grumble against the misgovernment, one of the results of which is that almost every approach to one's house is "up" at the same time, and another that an officious policeman is allowed to disturb one's lunch by ringing the front-door bell and complaining to the butler that one's quadricycle is obstructing the traffic. The police down in my part of the world—Cromwell Road—take a childish delight in lodging this sort of frivolous complaint against any automobile, whereas it never occurs to them to "move on" the tradesmen's carts that stand driverless, with restless ponies, sometimes for as much as twenty minutes, outside our area gates—a constant source of danger to drivers of light cars.

I MET Mr. H. L. Doherty on what I call the lawn-tennis tricycle, as it was Count Voss's first, then poor Ernest Renshaw's, then the elder Doherty's, and is now the property of the "little Doe," as his friends affectionately call him. He told me that he had just ridden up from Eastbourne without any *contretemps* on the way. His brother, it appears, has bought a Comiot with De Dion motor, of course, 2½ h.p. He is well satisfied with it. Mr. "Billie" Barlow, another great lawn-tennis player, has joined our ranks, and is going to have a quadricycle built for him. He learnt to ride on the Croisette at Cannes this year, and his reckless *début* nearly cost him his neck—which, however, is unbreakable. By the way, in this connection I want to say a word for Mr. Eric Clift, of 51 Sinclair Road, near Olympia, our vet., as we call him. He does all our repairs for us—right well, too—and is at present building me a quadricycle with two-speed gear and other improvements.

IN an old Latin gradus I came across the following:—MORS, Monstrum horrendum, informe, ingens, *Bencius*. Thus did some Benz of the Middle Ages speak of Mors!

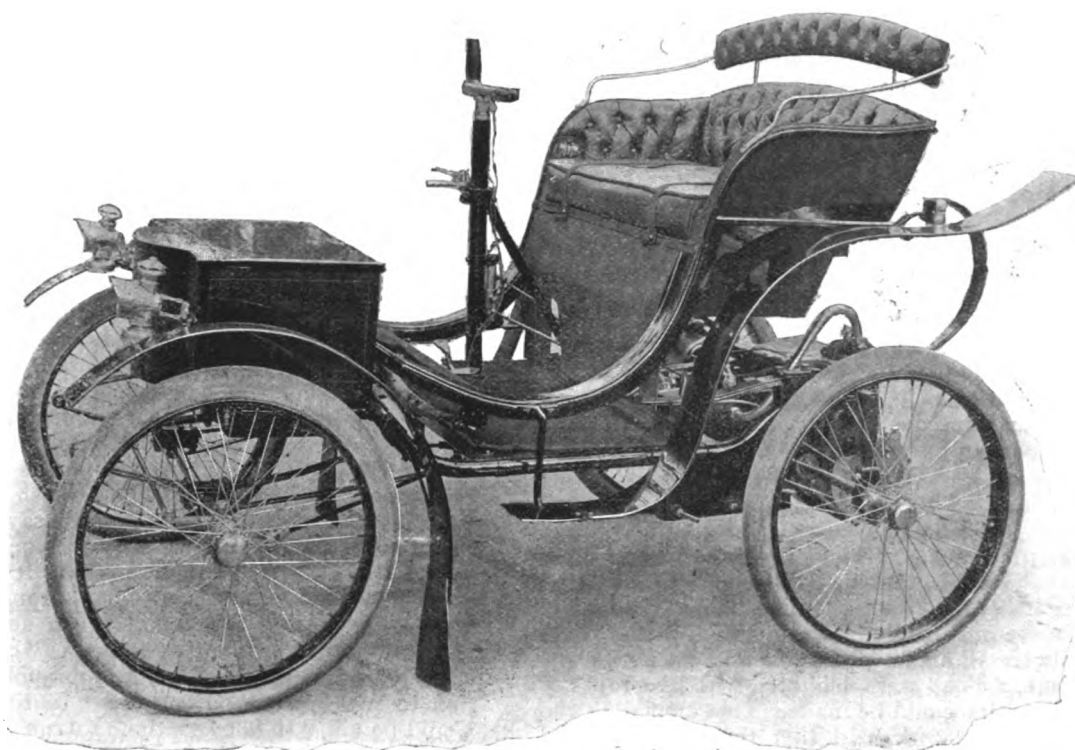
I HEAR that only two members of the Automobile Club have availed themselves of the special reduction of subscription at the Sheen House Club. Perhaps our chauffeurs funk the hill!

EVERYBODY should buy Vimar's "En Automobile," published by the proprietors of the *Figaro*. A story of the adventures of two English war correspondents on a motor-car in Matabeland, with such exciting incidents as the theft of the car by a troupe of monkeys (told with great wit, and illustrated with much skill and humour), it should be in every autocarist's library.

WE learn that Mr. Andrew Wallace Barr, a member of the Automobile Club committee, having been ordered abroad for the winter, is shortly proceeding to South Africa, where he will make an extended stay. In a letter to us Mr. Barr states that if he can be of service while there to any of his fellow members he will be pleased to so do. His address can always be had on application at 30 Moorgate Street, London, E.C.

I AM informed, writes our Midland Correspondent, that the driver of the motor-car which met with an accident at Edge Hill on Sunday week lies in a very critical condition. For some days after the accident he appeared to be progressing favourably, but he has suffered a relapse, and fears are entertained of his recovery.

## The "Empress" Motor-Voiturette.



THE accompanying illustration represents the "Empress" light motor-voiturette which is being introduced into this country by the United Motor Industries, of 3 Rue Meyerbeer, Paris. The car has accommodation for two persons, but an extra seat for one or two children can be fitted on the front if desired. The motive power is supplied by a De Dion motor of  $2\frac{1}{4}$  h.p. geared direct to the rear axle through the medium of a Didier two-speed gear. A friction clutch is also provided, so that the motor may be disconnected from the transmission at will. The Didier two-speed gear, which has already been described in this journal, has previously been fitted with success to quadricycles, and forms, with the De Dion-Bouton motor, one of the hill-climbing features. The friction clutch is worked by a pedal from the driver's seat, and the motor is thrown out of gear in order to slip in the high or low speed gear without noise or shock. The motor is started by a handle at the back of the car, and can be put completely out of gear, and regulated to run slow or fast by the carburation and advance sparking device; in fact, one of the advantages claimed for this car is that on going down hills the motor can be thrown entirely out of gear, the carriage being allowed to run of its own accord, so that if the motor has been working hard up a steep hill it can be stopped and so cooled on the run down. Powerful band brakes are fitted. All the trials of the car were successfully carried out with a  $1\frac{3}{4}$ -h.p. motor, and even with this power it was found that it would climb any hill 1 in 10 with heavy weights in the car with perfect ease. The carriage body, made by one of the best Parisian builders, is suspended upon easy C springs, and is stated to be absolutely free from vibration and shocks arising from uneven surface on roads. The wheels are of the cycle type, fitted with pneumatic tires.

### SCOTTISH NOTES.

#### Glasgow Autumn Holiday.

UNFORTUNATELY the weather was not of the best description on Monday last, the Glasgow autumn holiday. Nevertheless, undeterred by threatening meteorological aspects, many thousands set off by road, rail, and river to spend a short time "far from the madding crowd." For the road traffic all sorts of vehicles were brought into requisition, not the least important of which were the automobiles. On inquiry at the motor-car depot in Hamilton—the only place, by the way, in the West of Scotland where such machines can be hired out—I learned that every available car in the place had been booked. Some toil-worn Glaswegians thought fit to visit the classic Falls of Clyde and the ancient town of Lanark—always a popular route; others, more ambitious, had designs on "Tintock Tap," and enjoyed all the invigorating effects of a swift run across the heath-clad Douglas Moors; while "Straven toon," that land of cheese and gingerbread, claimed the attention of another section. The whole shire of Lanark was literally overrun on that day by horseless carriages, which, in the course of their winged flight, carried their loads of pleasure-seekers through scenery of varied nature. The longer distances which can be traversed by means of the motor-car, the freedom from all anxiety regarding the stabling or over-driving of horses, and the many other advantages which belong peculiarly to the motor-car are beginning to be recognised even by the one-day tripper, who, above all things, desires good value for his money. Despite the showery nature of the weather, which was much the same in the East as in the West, the Edinburgh Autocar Company were also very busy running passengers to various parts of Midlothian. The motor-car is decidedly catching on in the capital town, one of the surest signs of this being the amount of jealousy shown by the tramway company and other opposition camps.

THE MacLearn Automobile Co. has been incorporated in New Jersey with a capital of £20,000.

### Progress Among Jobmasters.

I WAS specially interested this week to hear that a member of one of the largest job and posting concerns in the East of Scotland had been touring through Perthshire during the past week in an automobile. I understand the firm are seriously thinking of adding motor-cars to their present large stock of horse-drawn vehicles in order to be up to date and cope with a demand which they anticipate they will soon have to meet or else loose custom. This is the sensible way of looking at the matter, and not "locking the stable door after the steed has been stolen," a policy which seems to be adopted by the majority of the carriage hirers of the country. The object of the gentleman indicated above in taking this tour was to thoroughly test the capabilities of the motor-car, and in the course of his journeying he came across some very stiff, long hills. The car behaved admirably, tackling them all in a business-like manner; and he expressed his satisfaction and surprise. Hills and motor-cars, in a great many quarters—especially horsey quarters—are synonymous with "sticks," and it is always specially pleasing when one can convince lovers of horse-flesh that the synonym is not a correct one.

### Parish Council Work.

THE Motherwell Parish Council officials have just paid a tribute to the efficacy of the horseless carriage. Last week they had a good deal of ground to go over visiting various hospitals and asylums within their jurisdiction. The inspections were all made within seven hours by means of a motor-carriage, and all were delighted with the rapidity with which their visits could be made. One official, at the conclusion of the day's work, said that the motor-car had done in seven hours what would have taken two horses and two days by the old-fashioned method. Slowly but surely people are beginning to recognize the fact that after all the motor-car has some good points in its favour.

### A Word to the Ungrateful.

GRATITUDE is not a remarkably common virtue, but it *does* exist. The fact, however, that gratitude exists in the bosom of a person who, as the result of a motor-car scare, had a trap worth £50 smashed and a horse valued at £100 rendered practically useless, is more extraordinary still, unless one considers it from the standpoint that the person involved was a "ladye faire," and, consequently, not so violently antagonistic to things automobile as some representatives of the sterner sex. But to the point. It happened in the Highlands. Four handsome young men, whose cheeks glowed with manly vigour and in whose eyes sparkled the joy of "motoring," were "whirring" merrily along the highway when in front they saw approaching a young lady in a phaeton, driving a very spirited horse. Immediately it caught sight of the motor-car it began to show all the signs of mad, unreasonable fright. Anticipating a bolt or spill of some sort the car was at once stopped and the chauffeurs went forward to render all the assistance in their power. The horse would not pass the motor, but stood dancing on its four legs, quivering with excitement. A gallant young medico, who formed one of the party, sprang to the animal's head to endeavour to coax it past and prevent it from bolting, thus enabling the lady to dismount and so possibly saving her from a nasty accident; but the horse was beyond his control, and with a wild dash it broke away, knocking him down in its mad haste, and inflicting a severe scalp wound and other contusions of a more or less serious character. The unfortunate young doctor lost a great deal of blood, and remained in an unconscious condition for some considerable time. The young lady, whose refractory horse had been the cause of all the trouble, at once sent off for a doctor, and insisted on the entire party coming up to her abode, a mansion house not far from the scene of the accident. A present of some game,

with the compliments of the sender and good wishes for a speedy recovery, was what the young sawbones received last week from the lady in question, in place of a summons to appear at a county-court to answer a charge of furiously driving a motor-car and so causing an accident. One might imagine he saw here the elements of a romance, but we have to deal with facts, and "fact are chieils that winna ding." Consequently we think this incident is a proof that gratitude does sometimes exist, and that all people who drive horses are not so utterly rabid in their hatred of automobiles as certain prosecutions south of the border would lead one to believe.

### The End of the Season.

WITH the close of September comes the end of the "tourist season" in the North and the "holiday time" everywhere. I am forcibly reminded of this by observing the announcements in the daily Press of the usual sales of Highland coach horses withdrawn from the various coaching routes throughout the country. So far as I have been able to ascertain from conversation with some of the more prominent coach owners, the season has been a particularly good one, although it was frankly admitted that until after the realization of their surplus horse-flesh at the forthcoming sales it was impossible for them to say on which side the balance of accounts would fall—whether debit or credit. I was a little surprised to learn that it was no uncommon experience after the "sales" for a proprietor to find that his "coaching accounts" for the season actually represented a loss, and but for the fact that the "coaches" are almost entirely in the hands of hotel proprietors who are in a position to make profit out of the "tourist" in other ways it would be impossible to continue to run these vehicles which form so pleasant a feature in a Highland holiday. It is, of course, well known that the coach proprietor, if he has to meet the public demand in his district, must purchase his horses at the time of the year when the price is highest, and he is forced to sell them again when the price is lowest.

### Motor-Coaches.

IN this I think there is a very strong argument in favour of the adoption of the mechanical vehicle for the work, and I am pleased to learn that not a few of those immediately interested are beginning to realise the possibility of making the "routes" pay, and pay well, by substituting the "motor" for the horse. I am emphatically of the opinion that the introduction of first-class motor-coaches in the first season of the new century would mark not only an important "new departure" but also a change for which the travelling public will be ripe.

### A Retrospect.

IT is impossible to shut our eyes to the strongly marked signs of the times. There have been more motor-carriages in private use throughout Scotland this summer than has ever been seen before. Who have been the users of these cars? Not a few enthusiastic faddists. They were a large number of sane people who were wealthy, influential, in fact, the leaders of "society," and many of them, nobility—royalty. No more need be said; the moral is plain: the year 1900 will mark an advance in the popularising of the motor-car of the highest importance, and which I dare to think will more truly entitle the beginning of the twentieth century to be called "motor year."

"BROWN HEATHER."

MESSRS. B. WEATHERLEY & SONS, of 261 High Street, Lewisham, are now stocking motor-car spirit. Moreover, they are in a position to undertake repairs to motor-cars and cycles.



## MIDLAND MOTOR NOTES.

By "HERCULES."



### The "Star" Motor-Car.

I HAD a chat last week with Mr. Lisle, manager of the motor department in connection with the Star Motor Co. and Star Cycle Co., Ltd., Wolverhampton, and I was surprised to find the establishment in such thorough working order. A large number of men are employed, and Mr. Lisle told me the Company were very busy executing orders for their 3-h.p. motor-cars, which are built on the Benz system. The productions of the firm are submitted to the most careful tests, and Mr. Lisle is frequently to be met on a trial trip. One day last week I was just in time to see him drive through the town with a full load—two others and himself—and witness the car ascend one of the steepest gradients in Wolverhampton—Lonsdale Road to wit. The ascent was made without a hitch of any kind. I was impressed with the neat and comfortable appearance of the vehicle, of which I hope to be able to give fuller particulars in a week or two. The firm, I may add, are also making motor-tricycles and "quads." These are very handsome in appearance, and are calculated to set one longing not only to possess such a machine, but for sufficient of "the wherewithal" to tour the country.

### Wolverhampton Automobilists.

MESSRS. CHILTON BROS., of the New Courier Cycle Works, Wolverhampton, are also makers of motor-tricycles and quadricycles. Mr. Chilton has become quite an enthusiastic motorist, and is frequently to be met riding with equal ease either a motor-tricycle or quadricycle. Though only a humble pedaller I hope to accompany Mr. Chilton on one of his trips, when I shall be in a better position to speak of the capabilities of the firm's productions. Mr. Parker, of the Electric Street Car Co., Ltd., Wednesfield Road, Wolverhampton, is another motorist frequently met with in Wolverhampton on his electric motor-car.

### A "Wearwell" Motor-Car.

THE Wearwell Cycle Co., Ltd., is the latest firm at Wolverhampton to enter upon the motor trade, and I am in a position to state that they have secured the services of one of the most experienced motor-car builders in the kingdom. The Company are laying themselves out to build a motor-car to retail at about £60, and are hoping to be able to have one finished in time to drive to London for exhibition at the National Show. They claim that not only will their motor-car be handsome in appearance, but that it will be thoroughly good and reliable in every way.

### On Tour with a "Decauville" Car.

MR. THOMAS FULLER TOOVEY, until recently intimately connected with the cycle trade in London, has been spending a few days at Wolverhampton and visiting some of his old cycling friends on his Decauville car. This has excited no little interest, and during the half hour he spent with me I should think that at least 400 people stopped to examine it. It is a very neat looking vehicle, and travels smoothly and swiftly. Mr. Toovey left Wolverhampton for Liverpool on Friday. His journey to Wolverhampton was *via* Maidenhead, the Thames Valley, Banbury, and Stratford-on-Avon, and he had one or two exciting incidents to relate. One of these occurred at Edge Hill, near Kineton, the day previous to the fatal accident to Miss McLeod reported in the last issue of *The Motor-Car Journal*. He considers the hill a most dangerous one, and that motorists cannot be too careful in descending it.

### Motor-Cars at Bournemouth.

WHILE in Bournemouth the other week I had a talk with a prominent resident there, and the conversation turned on motors. Visitors in that beautiful seaside resort have to depend on 'buses or cars, and I remarked that a motor-car service should prove a profitable investment. My friend agreed. During a week's stay at Bournemouth I saw only one motor, but the probability is that before long an enterprising person or company will see that a fine opening for a motor-car service is not lost.

### Ladies and Motor-Cars.

MOTOR riding is a fascinating pastime. A lady acquaintance of the writer's was once an enthusiastic cyclist, but since her husband had had the use of a motor-car she can hardly be persuaded to ride her bicycle. She often does her shopping with the aid of the car, and speaks in high terms of motoring. I shall not be surprised to see the lady driving the car herself one of these days.

### Motor-Cars and Newspaper Delivery.

THE uses of motors are manifold, and I hear that some newspaper proprietors in the Midlands have made enquiries with regard to the purchase of cars for the distribution of papers in outlying districts. At present trams or local train services have to be relied on, and they are not altogether satisfactory. A motor-car would certainly carry out the work with despatch, and the example set by several London papers will probably be adopted by their provincial contemporaries.

### Cycling Converts to Automobillism.

I NOTICE that Mr. John Urry, who purchased an Ariel motor-tricycle a few months ago, has another interesting chat about motors in last week's issue of *Bicycling News*, of which paper he is the editor. He describes the way in which he was "lectured" by an old and esteemed friend of his because he had taken to a motor-tricycle. The answer was given with such warmth that the candid friend went off "snorting like unto a wild jackass of the plain," and in high dudgeon. "Mr. F. J. Osmond is," states Mr. Urry, "very keen just now on a motor-tricycle, and has been fluttering around the Midlands on an 'Ariel.' He required no tuition, and manages the machine as though he had been used to it for years. There is no doubt about the fact that motor-riding possesses a charm which very quickly pervades a trier, and he is not satisfied till he possesses one of his own. It will be noticed how many of our old cycle riders are going in for motoring."

### Why Not Motor-Tricycles for Postmen?

A NEW development in postal deliveries is being tried at Grantham, where, in order to serve a group of villagers scattered over an area of several miles, the postal authorities have established a cycle post. A Coventry cycle firm was one of the very first to make carrier tricycles for rural postmen, to whom my sympathies have often gone out when I have met them on a windy day with quite a heavy load upon the tricycle, shod with solid tires. Some day, perhaps, the motor-tricycle may supersede these tricycles. Their superior advantages cannot be over-estimated. Time and labour would be saved, and the early despatch or collection of letters and parcels would be greatly appreciated. Telegraph messengers are now being mounted with bicycles all over the country, and the great advantages of motor-vehicles will probably dawn before long upon the official mind. Some day we shall doubtless regard the rural letter carrier's tricycle and horse-driven mail-cart for the collection of letters and parcels as antiquated.

**Motor-Tricycle Races.**

**SPEEDY** professional cyclists have had few opportunities during the present season for displaying their powers on English racing tracks, and one is not at all surprised at the favourable disposition which a number of the speediest men show towards motor cycling. The sport has met with the approbation of the public, and every additional race demonstrates its popularity. It is rumoured that Arthur Chase is about to take to motor racing and will enter for some of the big contests on the Continent. I know Chase has had some experience in motors, and there is no reason why he should not be equally successful with the "new love" as with the old. Something was wanted to revive the enthusiasm which cycling races at one time evoked, and that something has been forthcoming in the introduction of racing on motors. It had been thought that we had reached finality with regard to the speed which could be attained on a cycle on a racing track, but motor pacing has shown that speed possibilities have not yet been exhausted. Motor-tricycles have shown still greater speed powers, the times of the fastest cyclist have been easily eclipsed, and it is impossible to tell what the future may have in store. Next season is bound to produce some sensations in this direction. Many of the larger and older makers are devoting a good deal of attention to turning out motor-tricycles which will possess still greater speed powers than their productions hitherto have shown. Nor will they rest content until they have proved to the world that English-made motors can successfully compete with those on the Continent.

**See to Your Lamps!**

**STILL** another instance of the difficulty of obtaining petrol was given at the Coventry Police-Court on Friday. An engineer named Edgar Hayes, of Coventry, was summoned by the county police for driving a motor-car at Ryton-on-Dunsmore after one hour from sunset without having a light attached. Hayes admitted the offence, and told the magistrate that he had been sent by the Humber Co. to Watford to fetch a motor-quadracycle. He was delayed on the way through not having sufficient oil, and though he tried to get oil at Dunchurch he was not successful. Nor would any one lend him a lamp, so he had to drive the remainder of the distance without a light. He was coming slowly and cautiously when he was stopped by a police-officer. The chairman (Col. Woolcombe-Adams) said Hayes ought to have had a lamp with him when he started with the motor, and thus have been prepared for a breakdown. Motors, he added, were dangerous things without a light, and an accident might easily have been caused. A fine of 5s. and costs was imposed. Drivers will do well to see that their lamps are "well trimmed" and on their vehicles when they start on a long journey, but in this case the driver was hardly to blame, seeing that he received the vehicle at Watford. It would be as well, too, to see that the bye-law as to carrying lights was enforced generally, for motorists run considerable risk through other vehicles neglecting to comply with the bye-law, and even in that portion of the county of Warwick which abuts on Coventry.

**The Accles-Turrell Car.**

**ONE** of the most promising of motor-firms is the Accles-Turrell, of Holford Works, Perry Bar, Birmingham. They have recently turned out a car which the writer expects will make a mild sensation in the motor world, and for which he predicts a keen demand when its virtues and capabilities are known. The car has been designed by Mr. C. McR. Turrell, who was chief engineer to the British Motor Co., Ltd., and who has been connected with the industry since its introduction to this country. The car under notice is the outcome of about four years' thought and experience, and the inventor's chief aim has been to produce a car which shall be

simple, effective, and easy of manipulation for those who have little mechanical knowledge of motors. Mr. Turrell has succeeded in his aim in a marked degree, the engine on this car having been reduced to a very simple form. The car is provided with three speeds and a reverse motion, which can be altered with scarcely any perceptible movement. The mechanism for steering purposes, also that which controls the change of speed, as well as the motor control, is compact, within easy reach of the driver, and quite out of the way of the friend he may have with him. The brakes are very powerful, and the car can be stopped on stiff inclines or in a very short distance on the level. There is quite an absence of grease and lubricators about the car. Nothing upsets a lady more than to have her dainty costume besmeared with dirty grease, and there is no danger of that accident upon Mr. Turrell's car, which is neat and pretty in design. It has a long wheel base to ensure safety, and there is quite an absence of smell. The noise of the car is but slight. When the writer accompanied Mr. Turrell upon a short trip on the car he was somewhat out of sorts, and did not feel equal to much jolting; he was, however, agreeably surprised at the smoothness of the running. During the past ten days Mr. Turrell has run the car an average of fifty miles a day, and during the whole of the journeys there has not been a semblance of a breakdown. He contemplates an early journey to London. The car is made to seat two persons, its wheels are shod with pneumatic tires, and it is capable of negotiating any hill which can be surmounted by a horse and cart. Stoneleigh, the stiffest hill in the neighbourhood of Coventry, has been mounted, and when half way up the car was stopped and started again. This was a severe test, but the car came out of it with flying colours. Mr. Turrell has undoubtedly hit upon a motor which will serve the public well. The price is moderate, the car's capabilities are excellent, and I predict a keen demand for it.

**THE CANFORD CLIFFS MOTOR-OMNIBUS.**

**THE** accompanying illustration represents a motor-omnibus recently completed by the Motor Manufacturing Co., Ltd., to the order of the Canford Cliffs Motor-Omnibus Syndicate. The 'bus, which is fitted with a 5½-h.p. Daimler motor and provided with four forward speeds and reversing gear, is made to carry eight persons. When purchasing the vehicle the Syndicate stipulated that it was to carry a full load up a gradient of 1 in 9, and we learn



that it fulfilled these requirements with perfect ease on Saturday last, to the great satisfaction of the purchasers. It is the intention of the Syndicate to run the 'bus from the centre of Bournemouth to the Canford Cliffs Estate with the idea of developing this property, and it will be interesting to hear in a few months time what success has attended their efforts. Undoubtedly there is a very large field for motor-vehicles for work of this description.

# THE BERLIN INTERNATIONAL MOTOR-CAR EXHIBITION.

(Concluded from page 463).

THE section devoted to petroleum spirit cars is, as might be expected, the largest, a number of well-known firms being represented. Messrs. Benz & Co., of Mannheim, make an extensive display, their cars being too well known to need any lengthy description at this time. We may mention, however, that their exhibit comprises vehicles capable of seating from two up to twenty persons. A novel type of three-wheeled two-seated car is shown by the Patent Motorwagen-fabrik "Rapid," of Zurich. The car resembles in its general outlines the well-known Bollée voiturette, from which it, however, differs both as regards the mechanical details and

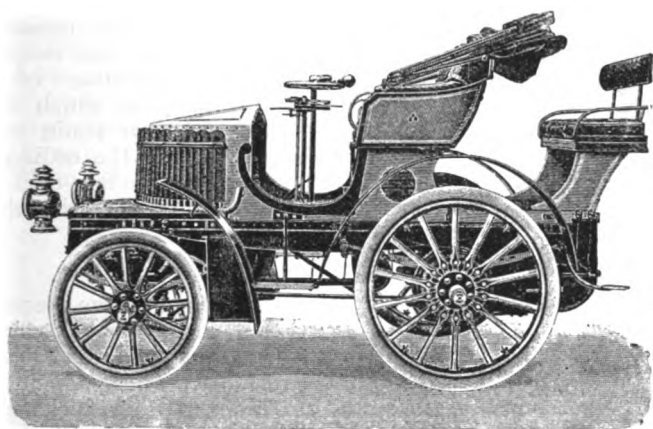


FIG. 1.—THE DE DIETRICH PETIT DUC.

the body. The motor is of the horizontal, single cylinder type, of  $3\frac{1}{2}$  h.p., and is provided with a water-jacket and electric ignition. Its position, low down in the centre of the vehicle between the three wheels, gives the car great stability, and totally overcomes, it is claimed, the tendency to side-slip. The transmission of the power and the speed variation are obtained by means of a single belt and a set of spur wheels, and are arranged to give two main speeds of eight and twenty miles per hour, all intermediate speeds being obtained by regulating the electric ignition and the supply of explosive mixture. The seat is well suspended on carriage springs. The wheels are of the cycle type, fitted with pneumatic tires, the weight of the car complete being about  $4\frac{1}{2}$  cwts.

The Daimler Motoren Gesellschaft, of Cannstatt, are present with a number of vehicles built on the well-known Daimler system, prominent among them being a victoria with an unusually long wheel base. A German-built Decauville car, amongst others, is shown by the Eisenach Fahrzeugfabrik, of Eisenach.

A large display is made of the well-known Amedée Bollée cars by Messrs. De Dietrich & Co., of Niederbronn, Alsace, the vehicles on view ranging from a phaeton to a large family omnibus. As we described and illustrated this type of vehicle in our issue of April 14th last, further reference at the present time is unnecessary; we give, however, in Fig. 1 an illustration of the three-seated petit duc, which is fitted with either a 6 or 9-h.p. motor as desired.

The Bielefelder Maschinenfabrik vormals Durkopp and Co., of Bielefeld, exhibits a number of motor-cars built on the Canello-Durkopp system (Fig. 2). The motor and transmission gear in these vehicles has many points of resemblance with the Panhard-Daimler cars, yet at the same time presents several special features, to which we hope to refer at length in a later issue.

The Kühlstein Wagenbau, of Charlottenburg, exhibits a number of vehicles including the Kühlstein-Vollmer tractor illustrated and described in our issue of August 4th last. This concern is also now building rear-driven petrol cars, the "duc" shown at the exhibition being of a neat design.

The Opel motor-carriages are shown in a variety of styles by Herr Adam Opel, of the Nähmaschinen und Fahrräderfabrik, Russelsheim. These cars are on Benz lines, but built to the designs of Herr Lutzmann, whose business was some time ago acquired by Herr Opel.

A novel form of light two-seated voiturette is shown by the Gesellschaft für Automobil-Wagenbau (system Loutscky), 49 Französischestrasse, Berlin, W. The motor is located at the rear part of the vehicle, while the front wheels are carried in forks similar to those employed in a bicycle. We hope to illustrate this vehicle in an early issue.

M. Leon Lefebvre, of Paris, exhibits the "Bolide" racing car with which records have been created in France.

A very neat type of three-seated motor-carriage, very much on the lines of the Rumpf car illustrated in our issue of August 11th last, is shown by the Schweizerische Motorwagenfabrik, of Wetzikon, Zurich. As the car possesses several interesting features we defer a lengthy notice of it until we can publish illustrations.

The Belgian exhibits include the electro-petrol car of the Etablissements Pieper, of Liège, and the voiturettes of the Fabrique Nationale d'Armes de Guerre, of Liège, and of the Ateliers Dechamps, of Brussels, all of which have already been described in this journal. Petroleum-spirit motor-cars are also shown by the Berliner Maschinenfabrik (Henschel and Co.), 97 Schillerstr., Charlottenburg; the Centaur Automobilbau Gesellschaft, 33 Helmholtzstrasse, Charlottenburg; the Falke Fahrzeugfabrik, of M.-Gladbach, Rhenish Prussia; Herr A. Klose, 1 Universitätsstrasse, Berlin, N.W. (Peugeot); Herr Hugo Mayer, of 54 Kurfürstendamm, Berlin (the Victoria Combination and a new light three-seated car); the Motorfahrzeug und Motorenfabrik Berlin Gesellschaft, of Marienfelde (German Daimler cars); the Vulcan Automobil Gesellschaft, Berlin; and the Motorkutscherei der Allgemeinen Motorwagen Gesellschaft, 37 Luisenstrasse, Berlin, N.W. (German Daimler cars).

Motor-tricycles and quadricycles are shown by quite a number of firms, including the Adler Fahrrad Werke (Kleyer), of Frankfurt-am-Main; the Berliner Maschinenfabrik (Henschel & Co.); Messrs. Cudell & Co., of Aix la Chapelle, who hold the licence for De Dion motors and tricycles in Germany; the Eisenach Fahrzeugfabrik; the Gesellschaft für Automobilwagenbau, Berlin; Messrs. Hartzendorff & Lehmann, 176 Köpenickstr., Berlin; Herr Moritz Hille, of Löbtau, Dresden; Herr Hugo Mayer, of Berlin; Messrs. Heinle & Wegelin, of Oberhausen, near

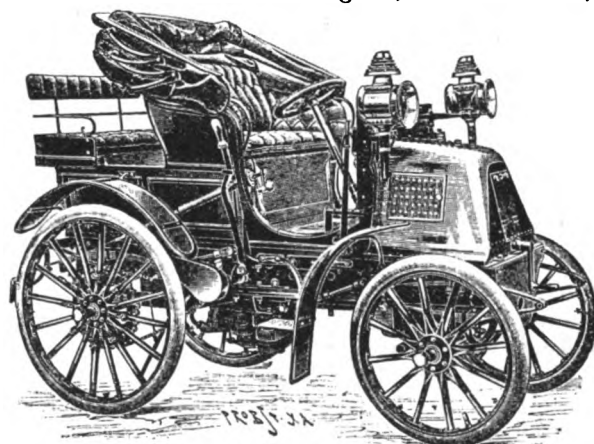


FIG. 2.—THE CANELLO-DURKOPP CAR.

Augsburg; the Pfälzische Nähmaschinen und Fahrräderfabrik (Kayser), of Kaiserslautern; Messrs. Stoeber, of Stettin; Messrs. Weyersberg, Kirschbaum & Co., Solingen; Herr Carl Wunderlich, 20 Besselstr., Berlin, S.W.; Messrs. Antoine Fils & Co., of Liège; Messrs. Marot, Gardon & Co., of 37 Rue de Brunel, Paris; Messrs. Noé Boyer & Co., Paris (Phébus motor-tricycles).

Herr P. Schauer, of 21 Sebastianstr., Berlin, S., exhibits a new motor-bicycle in which the motor is mounted on an

additional pair of front forks. The Pernoo motor-bicycle, of the Société Industrielle et Commerciale de Fabricants des Cycles, of 114 Rue Oberkampf, Paris, and the Werner motor-bicycle of Messrs. Werner Frères & Co., of 40 Avenue de la Grande Armée, Paris, are also on view.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### The Paris-Madrid Record.

It is announced that early next month M. Enrique Marzo, a well-known officer in the Spanish Army, will endeavour to beat the record Paris-Madrid, now standing to the credit of MM. Edouard de Perrodil and Henri Farman. This existing record was made "à bicyclette," and as the would-be record breaker intends to ride a motor-cycle, and will be paced by Béconnais, Osmond, and Duanip, he should be successful in his attempt.

### The Automobile Club of Nice.

AFTER the "A.C.F." probably the most important Automobile Club in France is that at Nice, the members of which can between them muster no less than ninety cars. Towards the end of November this Club will be installed in its new house on the Promenade des Anglais, and there the members will find every luxury and convenience. Ample space for the storage of fifty automobiles will be afforded in the new premises. All English automobilists visiting the Riviera should certainly become members.

### The Bordeaux-Biarritz Race—The Hon. C. S. Rolls a Competitor.

INCREASED interest is centred on the Bordeaux-Biarritz race which is to be run off on Saturday and Sunday next by reason of the fact that the Hon. C. S. Rolls is one of the entrants in the touring class. Mr. Rolls will be accompanied by Mr. Millership, Mr. Staplee Firth, and another gentleman. M. Etienne Giraud, who drove a 20-h.p. Bollée in "Le Tour de France," will be contesting in the racers' section, mounted on a 12-h.p. Panhard car. In the list of entries the horse-power of M. Lemaitre's car is not quoted. Is it to be the new 52-h.p. Peugeot? We wonder!

### Béconnais' Recent Performances.

THE sensation of the week has been the marvellous times achieved by Béconnais riding a Phébus tricycle fitted with an Aster motor developing  $4\frac{1}{2}$  h.p. His speed trials were carried out on the "route du Parc Agricole d'Achéres," the road on which took place the famous struggles of MM. Jenatzy and Chasseloup-Laubat, and the route to which all would-be record men betake themselves. At his first attempt Béconnais made a clean sweep of the existing motor-cycle records for one or two kilometres, his times being: 2 kilometres, 1 m. 50 $\frac{3}{4}$  s.; 1 kilometre (flying start), 49 $\frac{1}{4}$  s., as against the old figures of 1 m. 57 $\frac{3}{4}$  s. and 55 $\frac{1}{4}$  s. respectively. Not satisfied, Béconnais made another trial, and succeeded in reducing his time for the kilometre with flying start to 48 s.—that is, a speed of 75 kilometres or 47 miles per hour. It will be remembered that M. Jenatzy, driving his electric car, "La Jamais Contente," made the kilometre under the same conditions in 32 s. This represents a speed of nearly 106 kilometres (66 miles) per hour. Following up this performance on the road, Béconnais on Sunday last, at the Parc des Princes, rode 34 kilometres in 30 m. 41 s., and then was compelled to stop on account of a punctured tire. He proposes to continue his trials, as he wishes to be the first motor-cyclist to cover 70 kilometres within the hour.

### Motor-Cycle Races in Paris.

ON Sunday last a 20-kilometres race for motor-tricycles was run off at the Park des Princes track in Paris. The winner, Barras, covered the distance in 19 m. 20 s., that is to say, at an average speed of about 62 kil. an hour. The second was Gasté and the third Merville, who had on his tricycle a double motor of the "Sphinx" type. Béconnais took the lead and kept it during the first 10 kilometres, when Barras joined him. Béconnais tried to keep up, but his motor seemed to run badly, and he finally left off. Barras and Gasté were riding special De Dion motors fitted with the new "Buchet culasse," which seems to be an improvement for high-speed tricycles.

### A Novel Motor-Cycle Race.

OUR French contemporary, *La Vie au Grand Air*, which has initiated several automobile races this season, announces the organization of a course for motor-cycles in which the competitors will race *sans* chain and pedals. This will have the effect of placing the ordinary chauffeur on an equal footing with the chauffeur-cyclist, who frequently wins races on account of his greater stamina and pedalling powers.

### The Berlin-Leipzig Race.

ON the 20th instant the second course organized under the patronage of the Committee of the Berlin Exhibition was successfully decided, in spite of the somewhat inclement weather. The departure of the sixteen competitors was effected at Marienfelde, some fourteen kilometres out of Berlin. M. Branda, the winner of the Berlin-Baumgartenbrück race, held the lead for a time, but the first four arrivals at Leipzig were:—1, Held (car); 2, Pittelkow (motor-cycle); 3, Türkheim (car); 4, Dietrich (car). The winner covered the 185 kilometres at an average speed of 35 kilometres per hour.

### The Competitions for Voiturettes.

REALISING that the general public know but very little as to the capabilities of the many types of small cars which are now being constructed in France, our contemporary, *Sport Universel Illustré*, is organizing a fete and competition for October 18th and 19th which will be entirely reserved for this class of automobile. Of course, there are several very excellent small cars now in use, but taken as a class the voiturettes are lamentably behind their larger brethren, both as regards appearance and reliability. The programme, as announced by our contemporary, consists of two parts, the first technical and the second fanciful. On the first day there will take place:—1. Steering competition for petrol voiturettes carrying two persons side by side and not exceeding £200 catalogue price. 2. Competition for "voiturettes-voitures" of a catalogue price between £200 and £320. These vehicles must be piloted by ladies or children, and the competition will consist of driving among a number of obstacles at a minimum speed of  $7\frac{1}{2}$  miles per hour. The course will be three circuits of the "rond-point des tribunes" at Longchamp. The cars must also be decorated. 3. Gymkhana, open to petrol motor tricycles, quadricycles, and bicycles. 4. Costume competition for automobilists. On the second day there will be decided a race to Rambouillet and back, the competing cars being classified as follows:—1. Petrol voiturettes, two places side by side, price £200 or less: (a) 2 h.p., (b) exceeding 2 h.p., (c) exceeding 3 h.p. 2. Petrol voiturettes-voitures, price £200-£320. Diplomas will be awarded to all cars making the journey at an average speed of  $7\frac{1}{2}$  miles per hour. We shall await the results of these tests with interest.

**Motor-Cycle Race for the Championship of Europe.**

ON the occasion of their 100-kilometres bicycle championship, the Cycling Union of Switzerland have organized, under the somewhat ambitious title of "Le Championnat d'Europe," a 20-kilometres race for motor-cycles. This race will take place on Sunday next, but it is hardly likely to command an entry representative of the leading chauffeurs.

**A New Motor-Bicycle.**

ONE of the most recent types of this class of automobile is the Sanciome machine. The motor, which consumes petrol as the fuel and develops about 1 h.p., is of the single-cylinder type working on the Otto cycle. It is supplied with the ribs peculiar to air-cooled engines, and is fitted with electric ignition. It weighs 9 kilos. 400 gr., and is attached to the lower cross tube of a diamond frame bicycle, the top and back tubes of which carry respectively the petrol tank and the electric battery and coil. Complete, the cycle weighs about 28 kilos., and is said to be capable of running up to a speed of twenty miles per hour on the level.

**Paris-Ostend Prizes.**

THE official list of prize-winners has now been published, and we note that the "dead-heaters," MM. Levegh and Girardot, each take a sum of £150. Baras, who was first in the motor-cycle category, is awarded £60. To the several winners in the tourists' class medals are presented.

**Motor-Cars in Russia.**

THE automobile has now penetrated the realms of the Czar, a few of these vehicles now careering about St. Petersburg. So far only twenty-one permits have been issued, and before these were granted the drivers of the cars had to pass an examination whilst the vehicle was being closely inspected. The speed is limited to twelve versts—about eight miles—an hour, with the proviso that the vehicles must emit neither smoke nor steam.

EDWARD HAYES, engineer, was last week fined 5s. and costs for driving a motor-car without a light at Rayton-on-Dunsmore, near Coventry.

A MOTOR-CAR has been placed on the route to Villette Road, Sunderland, by way of Toward Road, in response to recent appeals in the press.

WE learn that Mr. Henry J. Swindley has been appointed by the Committee of the Automobile Club, and has consented to serve, as honorary timekeeper to the Club.

HERR VON PODBIELSKI, the German Secretary of State, Herr G. Daimler of Canstatt, and Herr Benz of Mannheim have been elected honorary members of the Mid-European Motor-Car Club.

MESSRS. JULIUS HARVEY & Co. have issued a new catalogue of steam, oil, and electric motor-carriages, cars, and vans for passengers and goods. It is capitally got up, and should materially assist the development of their business.

MESSRS. HEWETSONS, LTD., send us a copy of a letter received from Messrs. Benz & Co., of Mannheim, regarding the success of the Benz cars in the races recently organized by the authorities of the Berlin Motor-Car Exhibition. In the Berlin-Baumgartenbrück race (65 kilometres) an Ideal car secured the first prize in the voiturette class, while in the Berlin-Leipzig race (190 kilometres) Messrs. Benz entered for the first time a special racing car, and the firm are naturally elated at the success they achieved in carrying off the first prize.

**CORRESPONDENCE.**



**INFORMATION WANTED.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I wonder if your correspondent, "Brown Heather," will be able to throw any light on a motor-car that I saw lately near Strathpeffer. I met it at a bend of the road a few miles to the west of Strathpeffer. It was going at a good smart pace, fully ten miles an hour. At first I thought it would be a car plying for hire, one or two of which I had previously seen in the district; but after it had passed me I noticed that it had a hood (down at the time) like that of a landau or Victoria, and I inferred that it would be a private conveyance. It had somewhat the appearance of the Verkehrsunternehmen Company's electrical droschke, Fig. 3, page 463 of your last publication, or of the Krieger Victoria, Fig. 1, page 449, though the driver or conductor of the machine did not appear to be so high-seated as in the latter.

The driver or conductor was alone on the front seat, and there were two ladies in the carriage, facing to the front.

It seemed quite such a car as I have been on the look-out for, and I should like to know more about it, particularly whether it was driven by electricity or oil, and if by electricity (as I rather think it was) how far it can go from a charging station. That there are so few places where one can get a fresh supply of electricity seems the great drawback at present to electrical cars, which otherwise I would prefer; and I should like a car capable of going fifty miles from a charging station, and of course to return, which means 100 miles in all.

Edinburgh, I am, yours truly,  
September 25th, 1899. J. R.

**LADIES AND AUTOMOBILISM.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In relation to your paragraph concerning "Ladies and the Automobile Club," I would like to draw your attention to the following points:—

I do not think any "organized band of lady motorists" would care to intrude upon the privacy of the members of the Automobile Club, or any other gentlemen similarly placed. It was merely by accident I discovered that lady motorists were not permitted to join the Club. Whilst engaged in writing an article for one of the monthly periodicals on "Motoring as a Pastime," I naturally sought to include particulars of the Club's arrangements, and on writing to the secretary was furnished with the rules and regulations, from which I gathered that as ladies were not admitted to membership there was room for a ladies' club.

As you will see, my endeavours to interest myself and others in the fascinating pastime of motoring were very innocent. Apart from being "obtrusive," I merely wished to educate myself in order that in the future I might read with more intelligence and pleasure your columns. Surely you do not exclude ladies from your subscribers' lists!

It cannot be that you are opposed to ladies driving motor-vehicles, for it was through the courtesy of the Motor Manufacturing and Beeston Companies that I was taught and allowed to drive the motor-tricycle in the Old Deer Park, Richmond Park, and along the Warwickshire roads. Indeed, I owe my "motor mania," as it may be styled by some who are still so much behind the times as to oppose the coming mode of locomotion, to the kindness I received at the hands of the various companies and members of the Automobile Club.

I have not one word to say against the Club or its management. The Club itself may be closed to women, yet many of its leading members have proved themselves to be not only chivalrous but generous to ladies interested in the automobile. It was through the kindness of Mr. J. K. Starley that I was enabled to study the mechanism of, and



drive for some four hours daily in the environs of Coventry, the Benz car. I was also permitted to bring it to London, for I believe such practical experience in driving is essential to any one who desires eventually to become a motorist.

The question resolves itself to this: Are there a sufficient number of ladies interested in motors and motoring for the formation of a club? If there are not now there will be in the future, and as there is so much foundation work to be done the sooner a beginning is made the better it will be for all parties concerned.

I find myself in this position: Having learnt in a superficial manner to drive motor-vehicles, how can I study the mechanism of the cycle or car I wish to drive sufficiently to be able to detect errors of adjustment or construction in case of breakdown? The workshops are closed to ladies, but if there were a number of women desirous of such mechanical education a class might be formed and lectures given on the construction of motor-vehicles, with opportunities for practical tuition in the workshops after the working hours of the staff. Provided ladies could pay for such instruction, where is the objection to their having it? Whether or not ladies will prove themselves to be incapable of becoming competent motorists remains to be seen. If any lady finds herself able to understand the mechanism of the vehicle she drives sufficiently to be able to be wholly responsible for its care the motor industry will find itself in a stronger position and the popularisation of the automobile will be nearer to hand than it is at present.

You ask, "Why should Mr. Stead's sanctum be chosen as the rendezvous for lady motorists?" Simply because, not having any other room offered me, I accepted the kind permission to use his; but it is proposed that the preliminary meeting will be held at 108 Cromwell Road, S.W., which is the town residence of the Viscountess Harberton, whose drawing room is capable of holding some hundred people.

Mowbray House, Norfolk Street, Yours sincerely,  
Strand, London, N. G. BACON.  
September 25th, 1899.

#### THE CINEMATOGRAPH ON TOUR BY MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Oh, such weather—rain, storm, and blast every day! But the fixtures of a touring entertainer admit of no postponement or delay, and must be fulfilled despite the vagaries of Jupiter, Pluvius, Boreas, and the elements in general. Flookburgh, near Holker Hall (which was the favourite residence of the late Duke of Devonshire), was our first stop after Staveley, and the journey of about twenty-one miles was accomplished in weather that is generally termed only fit for dogs. We would not be denied, and after unloading at the Hall motored on to Cark and Cartmel to let the people know that not only had the first motor-car arrived but also that the first cinematograph had come to town. The result repaid our efforts for the village hall that night, was full to repletion. Thence the next day to Arncliffe via Grange-over-Sands, with a splendid view of the angry seas in Morecambe Bay, which owing to the autumnal equinox and the spring tide were magnificent in their grandeur. The following day to Caton, via Milnthorpe and Lancaster in a drenching and bitterly cold rain-storm every inch of the journey, about twenty-five miles, and on arrival the car was bemattered with mud from end to end.

Glad we were that Caton was a two-night "stand," for it gave us an opportunity to clean up the car and make ourselves spick and span for the next week's route. I notice in your last issue an account of Mr. J. W. Stocks' attempted ride from Land's End to John o' Groat's, and we certainly must have met him. *En route* from Greenodd to Staveley, Windermere, we motored via Kendal, and pulling up in a side street there we let off the pressure for a little while until we made one or two necessary purchases in the "K" boot

town, and just as we were returning to our car to proceed we noticed a motor-tricycle flash by. Yes, "flash" is the word, for it was going splendidly. The rider looked somewhat travel-stained, and no wonder, for the roads were fearful. We experienced a little regret that he did not stop for a second to speak our car, but as it was undoubtedly Mr. Stocks competing against time I can now thoroughly understand it. We admired the splendid manner in which the tricycle mounted the hill leading to the bridge, which, with our load, we were compelled to do at a much more sober pace. The weather that stopped Mr. Stocks is what we have had to put up with day after day, and judging from our rosy faces I think it must agree with us. From Caton to Bentham, only eleven miles—still raining!—and to-day, Bentham to Ingleton—as bad as ever, cold wind, biting rain, and hail. The road, although only four miles, is quite a switchback, and with nasty gutters caused by the rain here and there. At Ingleton we hear that several cars from Leeds and Bradford had put in an appearance during the season, so we do not cause the excitement here that is common when visiting virgin ground; but still I notice always a crowd of faces in our wake.

For the benefit of the motor-car world in general I should like to voice my opinion of the new tires I had fitted to my car. I told you in a former letter that I was the first to try the new motor wheel section of rubber No. 227 by the Clincher Co., and I must say that after five weeks hard wear over some of the roughest roads imaginable they have proved themselves simply splendid. I mention this solely in the interests of motorists in general, for if my experience benefits me I am keenly anxious that others who drive motor-cars should know of it. The tires are so shaped as to give the advantage of all the rubber without its pressing in any way on the rims, and I am sure this kind of tire is destined to become general when its merits are known.

Yours, etc.,

Ingleton, Yorkshire,  
Sept. 26th, 1899.

T. J. WEST,  
Manager of the Modern Marvel  
Co., Ltd. (of Edinburgh).

#### ENGLISH v. FRENCH-BUILT MOTOR-CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter in your last issue *re* English and French motor-cars, there is no doubt that this whole subject of the particular preference that most people have even yet for French-built motors is one that can be discussed with I think very great advantage to motor-car users all over the country, and Mr. Burgess is to be thanked for bringing forward such an extremely interesting subject.

When, however, we look at the matter fairly, it seems to me that the French are entitled to every credit for the preference which their machines have so far secured in the majority of cases, and the reason for this preference is not far to seek.

The would-be automobilist has only to purchase a motor-car made by one of the well-known firms who do well in races in France, and the result is an absolute certainty that he will obtain a motor which will give him satisfaction for ordinary use in excess of that manufacturer who has not dared to put his wares to the fierce test that these racing contests insure the machines having.

Whilst of course it is very easy to say that these are racing cars and that is not what one wants to buy, still the fact remains that the experience the manufacturer gains from these races is bound to be incorporated in the cars as quickly as possible, simply for his own good-will; and whilst undoubtedly the weaknesses that are developed in these races will come to light through slow touring it will take months to discover the weaknesses that are found out probably in one single race.

Personally, I believe that it is quite possible to purchase motors in England as good as those turned out in France, but even in doing this, directly one goes away from the

touring class he is obviously buying something which the manufacturer has had very little experience in manufacturing.

Speaking for myself, after having an English engine made by Messrs. Napier & Son put into my French Panhard car, I must admit that I have now obtained an engine which in many points commends itself to me as being better than the French engine, and one that has unquestionably far greater wearing possibilities.

This experience has made me confident in trusting this firm to build me a 16 to 20-h.p. racing car for next season's races, and I believe two friends of mine are also going to do the same thing, so that there will probably be three of us with up-to-date racing cars made entirely in England for next year's French racing; and I must say that I look forward with an enormous amount of interest to seeing the completion of these cars and what they will do on the road. But at the same time I quite appreciate that it is quite likely that when we come to travel at average speeds of 35 to 40 miles an hour points may develop that none of us at the present moment dream of when experimenting with my own car, whose top speed is a little over 30 miles an hour and average about 23 or 24.

I am quite in accord, Mr. Editor, with your recommendation that the best way to obtaining the object suggested by your correspondent would be for English manufacturers to make racing cars to compete with French manufacturers, so that would-be purchasers may at any rate see what the manufacturer they wish to go to is capable of doing when put to his best effort.

14 Regent Street, London, S.W.,  
Sept. 26th, 1899.

Yours truly,  
S. F. EDGE.

#### SOME QUESTIONS REGARDING THE DE DION MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As a reader of your esteemed Journal, I beg to ask a few questions on motor-tricycles. I have a  $1\frac{1}{2}$ -h.p. De Dion, and have ridden it 550 miles and find the dry cells about run down; the spark is very small, and I have only got  $\frac{1}{2}$ -volt. left. I have been very careful to always take out the plug on stopping. Can you or any of your readers kindly inform me through your Journal what distance the battery of four cells should carry me, and which is the best firm to purchase a new one from? I find the machine will not mount some of the steeper hills, although there are only thirteen teeth in the small gear wheel. Do you think  $1\frac{1}{2}$  h.p. sufficient, and can I get a more powerful engine fitted if this is not sufficient? What number of volts should new cells give?

The Gymnasium, Yours faithfully,  
Victoria Barracks, Windsor, H. SHARDLOW,  
September 23rd, 1899. Staff Sergeant.

[Probably some of our readers who have had practical experience with motor-tricycles will send us a reply to the queries raised by Mr. Shardlow.—ED. M.-C.J.]

#### STOCKS' RECENT MOTOR-TRICYCLE RIDES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Not feeling at all satisfied with the result of my attempted ride from Land's End to John o' Groats, and considering that the weather was too unsettled for, at least a two day's ride, this season, I decided to try and make a successful attempt on a shorter distance, i.e., Edinburgh to London. I left Birmingham for Newcastle at 11.15 p.m. Wednesday, the 20th inst. I arrived in Newcastle at 6.30 a.m. Thursday, and rode to Edinburgh on my Ariel motor-tricycle, as I had never been over the road before and it was necessary that I should familiarise myself with it. I arrived in Edinburgh about 2 p.m., after having stayed three-quarters of an hour at Alnwick for breakfast.

On Friday morning, the 22nd inst., I left Edinburgh at 6 a.m., arrived at Newcastle (121 $\frac{1}{2}$  miles) 11.25 a.m., where I filled up with petrol and lubricating oil, had some sandwiches

and hot coffee, and set out for Doncaster, which I reached at 5.9 p.m. (233 $\frac{1}{2}$  miles from Edinburgh). There I sat down to some nourishing soup, put some sandwiches in my pocket, and set out for London, which I eventually reached 2.35 a.m. Saturday morning, covering 395 $\frac{1}{2}$  miles between the two capitals in 20 hours 35 minutes, without a single mishap to my motor. The latter is, I think, almost a record in itself, quite independent of the fact that this stretch of road has never been covered in less time than 25 hours and 20 minutes.

From 11.25 a.m. Friday morning (15th inst.), when I left Birmingham by train for Bristol, to my arrival back in Birmingham from London, by train, on Saturday (23rd inst.), I covered no less than 1,720 miles, 742 by train and 978 on an Ariel motor-tricycle, my only mishap being a broken experimental exhaust valve between Launceston and Okehampton on Sunday (the 17th inst.).

The distances are made up as follows:—

|              | Train.                  |                      | Motor.                         |
|--------------|-------------------------|----------------------|--------------------------------|
| Friday ..    | Birmingham to Bristol   | 91 $\frac{1}{2}$ ..  | 20 at Bristol.                 |
| Saturday ..  | Bristol to Penzance     | 209 ..               | 10 from Penzance to            |
|              |                         |                      | to Land's End.                 |
| Sunday and   | —                       | — ..                 | 431 Land's End to              |
| Monday..     | —                       | — ..                 | Kendal.                        |
| Monday ..    | Kendal to Birmingham    | 124 ..               | —                              |
| Wednesday .. | Birmingham to Newcastle | 204 $\frac{1}{2}$ .. | —                              |
| Thursday ..  | —                       | — ..                 | 121 $\frac{1}{2}$ Newcastle to |
|              |                         |                      | Edinburgh.                     |
| Friday ..    | —                       | — ..                 | 395 $\frac{1}{2}$ Edinburgh to |
|              |                         |                      | London.                        |
| Saturday ..  | London to Birmingham    | 113 ..               | —                              |
|              |                         | 742                  | 978                            |
|              | Motor                   | .. ..                | 978                            |
|              | Train                   | .. ..                | 742                            |
|              | Total                   | .. ..                | 1,720                          |

Birmingham,  
September 26th, 1899.

Yours faithfully,

J. W. STOCKS.

At the last meeting of the Merthyr District Council a licence was granted for a motor-car for ten passengers to run between Troedryhiw and Merthyr.

"AUTOMOBILISM," says the *Newcastle Daily Chronicle*, "will conquer the streets. Electric motors and petroleum motors are making tram-cars as obsolete as sedan-chairs."

MR. H. CARVER, a well-known Bridgwater cycle dealer, and Mr. F. Wills have announced themselves as managers of the Bridgwater Motor Co. They have opened business at East Quay as dealers in motor-cars and cycles of every description.

THE other evening we had a short ride with Mr. Percy Walker, an old racing cyclist, on his new French-built Hurtu car. Mr. Walker has already had some interesting rides, and has promised to send us particulars of one or more of the same for publication.

THE Iveagh phaeton with hood driven by Mr. J. S. Gretton in the recent tour of the Automobile Club attracted much attention by reason of its attractive and neatly-finished appearance. The car, which is the production of the Motor Manufacturing Co., Limited, has, we learn, already been sold by Mr. Gretton at a premium.

AMONG those recently elected to membership of the Automobile Club of Great Britain are the following:—Sir Richard Williams-Bulkeley, Bart., Count Zborowski, Messrs. A. Holford-Gower, Edward Kennard, Hildebrand Harmsworth, St. John Harmsworth, John Smith Brown, Albert Brown, Ernest Brown, B. J. Diplock, and Herbert H. Fuller.

THE Thames Valley Motor-Car Company, Limited, has been registered with a capital of £5,000 to adopt an agreement with H. G. Burford and Co. and J. Van Toll, and to carry on the general business of electricians and electrical engineers, producers and suppliers of electricity, etc. The directors are H. G. Burford, F. A. Rodewald, and J. Van Toll.

## RECENT EXPERIENCES WITH STEAM ON COMMON ROADS.\*

BY JOHN I. THORNYCROFT, F.R.S.

(Concluded from page 467.)

**I**N roofless vehicles it is difficult to arrange for an effective air condenser. Experiments have shown that a plain copper tube, while, possessing ample receptive area, lacks radiating surface; this defect may be largely overcome by the addition of external radiating gills to the tubes so disposed as to present a very short free path to the air currents traversing them. Such an air condenser must be cooled by a fan driven from the engine, and can be made lighter and more compact than if formed of plain tubes; this fan will absorb about 12 per cent. of the whole engine power, and forms a further complication in the design.

The weight of the van, unladen, is about 30 cwt., and a load of one ton is successfully dealt with at a speed of about ten miles an hour along ordinary roads; though fitted with single-speed gear only, the van can mount hills of 1:13 on macadam surfaces. Rear steering has not been found convenient, and all later designs have front steering arrangements.

About two years ago two tip wagons or dust carts were supplied to the Chiswick Vestry. These have been in continuous daily service since delivery, and are often used on Sundays also for the collection of road scrapings. The tipping bodies have a carrying capacity of 6 cubic yards, which in dust-bin refuse weighs from 3 to 4 tons. At Chiswick about 22 cubic yards of material are dealt with per vehicle day. With men working piecework, about 30 cubic yards per day is collected.

The boiler has heating surface of 65 square feet, grate area of  $2\frac{1}{2}$  square feet, and a gauge working pressure of 175 lb. per square inch; it is of similar type to that of the 1-ton van already described. The engine, however, is, in this case, attached beneath the underframe, and is a horizontal compound, having cylinders 3 in. and 5 in. in diameter by 3 in. stroke. The cranks are at 180 degrees, and the cylinders are on opposite sides of the crank-shaft to permit easy running at high speeds. The frame, guides, valves, pistons, and piston-rods are of bronze, to prevent the engine rusting up when standing.

The engine is thrown in and out of gear with a shaft co-axial with its own, by means of a friction clutch; this latter shaft carries a toothed pinion engaging with a spur wheel on the countershaft, the remainder of the transmission being similar to that of the light van already described. Renold "silent" chains are, however, used for the final drive instead of block chains as in the light van.

These vehicles are front steering, the method adopted being that of the "divided axle." The arrangement provides for the turning of the leading wheels, so as to satisfy the condition that their axes of rotation, produced, intersect on that of the rear axle; by this provision, and differential motion of the rear wheels, perfect facility in steering is attained.

In a tip wagon of later design the tipping body is of high-grade steel of the quality used in the construction of torpedo boats; it was feared that this would prove noisy in running, but this was found not to be the case.

The engine is horizontal compound, having cylinders 4 in. and 7 in. in diameter and 5 ft. stroke, placed beneath the under frame; the working parts are completely encased, and the "oil bath" or "splashabout" method of lubrication is adopted. The transmission is effected similar to that of the Chiswick dust carts.

This vehicle, with full load, maintains an average speed on ordinary roads of from 6 to  $6\frac{1}{2}$  miles an hour; at the higher of these two speeds the engine makes 500 revolutions per minute. The extreme length of the motor part only is  $12\frac{1}{2}$  ft.; breadth,  $6\frac{1}{2}$  ft.; and height, 10 ft.

My first passenger carriage was largely an experiment; it is fitted with method of transmission essentially different from that of any of the preceding vehicles. The engine and boiler are carried in the after part, the products of combustion are conducted downwards through a trunk, and discharged directly rearwards.

An air condenser, with radiating gills and air circulating fan, is fitted in the box in the fore part of carriage. The wheels have solid rubber tires 3 in. wide in metal rims.

The transmission is effected in the following manner: A flanged pulley on the engine shaft drives a pair of equal pulleys on the countershaft through a link belt, each of the pair taking one half the belt width in straight-ahead running; the countershaft is in two parts placed co-axially, these parts being respectively driven by the two equal pulleys just mentioned, and carrying at their outer ends sprockets communicating motions to the driving wheels through the medium of chains; the engine is thrown into gear by a belt-tightening jockey pulley operated by the driver.

By the adoption of this device of a pair of pulleys sharing the driving belt between them it is possible to dispense with the expensive "jack-in-the-box" differential gear, and so far as my experiments have proceeded there seems promise of success. The intended action is as follows: On turning a corner the outer driving wheel revolves more quickly than the inner; the belt automatically shifts towards the more quickly moving pulleys, and the correct differential motion of the wheels is thus not only permitted, but directly aided, in this way; as a matter of experience, the carriage is found to respond to the steering wheel with the greatest readiness. The carriage has maintained a speed of sixteen miles per hour with ease, carrying half a dozen passengers.

A 3-ton dray was recently built for a firm of brewers, and commenced running late last December; this dray hauls a further two tons on a second vehicle, and easily maintains a speed of five miles an hour; on several occasions loads of rather more than six tons have been transported at nearly six miles an hour. Its owners consider that it replaces three two-horse drays; the daily journey averages thirty miles, the total mileage to the present date is roundly 5,000.

The boiler, and all mountings, are now placed in front of the driver, but in such manner as not to obstruct his view ahead; the driver is seated on a transverse tank containing part of the feed water, the remainder of which is carried in a tank at the rear end of the underframe.

The extreme dimensions are: Length,  $17\frac{1}{2}$  ft.; breadth,  $6\frac{1}{2}$  ft.; and height,  $9\frac{1}{2}$  ft. The carrying body is of 12 cubic yards capacity, and has been made large to accommodate a good load of "empties" on homeward runs.

The boiler is of the annular water-tube type, with slightly inclined straight tubes, and fire contained in the bottom vessel so as to preserve the tubes from actual contact with the ignited fuel.

Water for a full-load run of fifteen to twenty miles is carried by this dray.

In all the preceding vehicles the final drive is effected by chains. The great difficulty in all self-propelled road vehicles has always been to provide a continuous driving effort without impeding the free and independent play of the bearing springs.

A chain, being a flexible connector, has enabled the difficulty to be overcome, but, so far, not in an altogether satisfactory way; it is found that unless made exceedingly large and effectually encased and lubricated, their life is very short, and the replacement of worn-out driving chains is an important item in the up-keep cost; however, a very large number of vehicles, both heavy and light, are still chain-driven.

In the later vehicles a method of chainless transmission has been adopted, which is, I believe, entirely unlike anything previously used in this country, and the essential features of which may be thus described: The countershaft is in three distinct pieces; the first of these is attached to the channel-steel underframe, and is driven by the engine through a toothed gear; the third is borne in bearings carried by a bracket supported upon an angle-steel frame connecting the front and rear axles, and termed the "perch frame." This third part carries a stout toothed pinion gearing with the spur ring of the differential gear, which is here borne by the rear axle.

These two pieces are connected by a third, or "intermediate link," by means of a pair of specially-designed universal joints, one of which permits also of a transverse sliding motion taking place; these are so made as to provide large bearing surfaces, to ensure durability, and, being wholly enclosed, are dust-proof and oil-retaining.

Between the extremes of no load and a "bump" with full load there is a vertical motion of the underframe, relatively to the perch frame, of 6 in. or 7 in., and this is taken up perfectly by this means, without interference with the continuous torque exerted on the driving wheels, and without bringing any strain upon the frame or mechanism.

The rear axle turns, and is carried in axle boxes somewhat of locomotive type attached to the under-side of a pair of laminated bearing springs; the rear wheels are driven from the felloes, as shown in Fig. 1, by a pair of springs attached to the main axle at the off side and to the sleeve of the differential gear at the near side, pressing against suitable projections from the felloes; by this means the driving-wheel spokes are relieved of the driving effort, and a yielding connection is obtained between the road-wheels and the driving mechanism.

The legal limit of speed is, at present, five miles an hour for the heavier class of self-propelled vehicles; the most recent vehicle is easily capable of maintaining a speed, with full load, of six or seven miles an hour. In fact, in the competition organized by the Self-Propelled Traffic Association early last month, one of these, described as a "standard 3-ton steam wagon, capable of hauling a further 2 tons under ordinary circumstances," transported a load of  $6\frac{1}{2}$  tons about thirty-six miles daily, at a running speed of over six miles per hour, and with this load mounted gradients of the unusual steepness of 1 in 9 at Liverpool.

For general use on ordinary roads, the steam engine gives sufficient range of power without the use of any variable speed gear, and this range is greatest when, as in the present instance, a valve gear permitting of a "linking up" is adopted. My latest vehicles have a compact, constant-lead gear permitting any degree of expansive working, and this is found to result in a decided economy in water consumption.

In most cases, however, it is desirable, and even necessary, to provide a means of considerably increasing the turning effort on the driving wheels in order that soft roads may be successfully traversed or very stiff gradients climbed; for such contingencies a low-speed gear is fitted, enabling a turning effort 75 per cent. greater than the normal to be exerted. The change speed gear adopted also provides for both the driving pinions on the engine shaft being placed out of gear at the same time, the engines then being capable of running freely with the vehicle standing; this permits the engine to be employed for the driving of stationary machinery if required, and also enables the vehicle to be easily moved when steam is not up.

The leading features of my most recent vehicles are briefly as follow:—

The whole motor part, with the exception of the wheels, is of metal, steel predominating. I regret to add that aluminium freely enters into the construction at present, for a reason already dwelt upon. No chains are used, the method of driving already described being adhered to.

The water-tube boiler has straight, slightly inclined tubes, fired from the top, and the fire cleaned through a special door at the bottom.

\* Abstract of paper read before Section G of the British Association, Dover Meeting.

The engine is wholly enclosed, with oil bath lubrication, but is so arranged that easy and complete access to all parts can be readily gained; adjustment is required about once in three months; a constant-lead radial valve gear is fitted, having large bearing surfaces and driving piston valves. The engine is suspended from the underframe from three points in such a manner as to be relieved from all strain due to "winding" of the underframe when running; the feed pump is directly driven by the engine, and the valve box so arranged that the valves are instantly accessible; the auxiliary feed is by a self-starting injector, so designed to enable the cones to be withdrawn while the boiler is under steam.

Two-speed gear is fitted, as already described; a worm-driven steering gear is adopted, allowing free play to the front bearing springs, and having all steering strains self-contained.

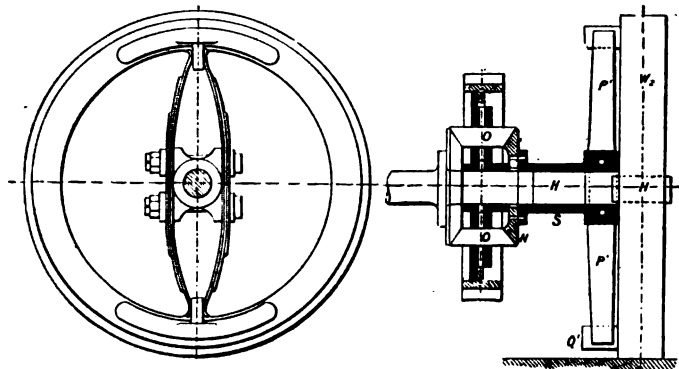


FIG. 1.

The motor part permits any type of carrying body being attached, so that one vehicle can be used in a variety of services. Durability, simplicity, economy, and centralisation of control are the main features in the latest vehicles of my design.

Welsh coal is used as fuel, though coke, oil, or inferior fuels can also be burned; used intelligently, Welsh coal causes no smoke nuisance whatever, burns noiselessly, and is not difficult to obtain. Oil is considerably more costly, is not everywhere procurable in sufficient quantity, and is often noisy in burning and liable to leave an offensive odour in the track of the vehicle.

I will conclude by inviting your attention to the accompanying table, which embodies some results recently obtained with heavy steam vehicles, both in this country and in France. The figures for the

| DATA CONNECTED WITH SOME RECENT STEAM VEHICLES        |                                |                 |      |       |                |                         |                   |                             |      |                                     |                               |            |                                |  |     |     |     |           |
|---|--------------------------------|-----------------|------|-------|----------------|-------------------------|-------------------|-----------------------------|------|-------------------------------------|-------------------------------|------------|--------------------------------|--|-----|-----|-----|-----------|
| VEHICLE   | Weight and Loads, Tons         |                 |      |       |                | Speed in Miles per Hour | Gradients Maximum | Engines Cylinders and Revs. | Fuel | Consumption with Pressure in Pounds | Heating Surface               | Gross Area | Evaporation in Pounds per Hour | Per Cent. of Total Weight of Water per Horse Ton-Mile. |     |     |     |           |
|   | Tank                           | Fuel and Water. | Net. | Gross | Make, Net Tank |                         |                   |                             |      |                                     |                               |            |                                |  |     |     |     |           |
| The "Rave," by Ransomes' (Ipswich                     | ..                             | ..              | ..   | 19.5  | ..             | 6.17                    | ..                | 8 in. & 8 in. by 10 in.     | Coal | 84                                  | ..                            | ..         | ..                             | ..   |     |     |     |           |
| M. Westlake's engine for 16 per cent and luggage      | 4.7                            | 0.67            | 1.4  | 6.97  | 0.22           | 9                       | ..                | 4 in. & 4 in. by 4.92 in.   | Oil  | 170                                 | 94                            | 6.3        | 6.18                           | (47) 17.1  |     |     |     |           |
| The "Life" 2-ton steam hury ..                        | 2.30                           | 0.82            | 2.08 | 3.29  | 0.87           | 8.12                    | 1:10              | 4 in. & 4 in. by 4.92 in.   | Oil  | 360                                 | 80                            | ..         | 8.52                           | 4.5  |     |     |     |           |
| Lynked 4-ton steam hury ..                            | 2.9                            | 0.35            | 4.1  | 7.35  | 1.41           | 5.7                     | 1:7               | 8 in. by 8 in.              | ..   | 300                                 | 110                           | ..         | ..                             | ..   |     |     |     |           |
| Scott's omnibus for 13 persons ..                     | 4.13                           | 1.03            | 1.13 | 6.34  | 0.288          | 6                       | ..                | 4 in. & 4 in. by 4.92 in.   | Oil  | 170                                 | 150                           | 1.4        | 6.3                            | (47) 31.4  |     |     |     |           |
| De Dion omnibus, 16 persons and luggage               | 4.21                           | 0.74            | 1.39 | 6.58  | 0.288          | 8.5                     | ..                | 4 in. & 4 in. by 4.92 in.   | ..   | 300                                 | 80                            | 1.9        | 6.3                            | (47) 31.4  |     |     |     |           |
| Brydget team with trailer, 160 persons and luggage    | 11.06 with trailer and luggage |                 |      |       |                | 7.54                    | 19.18             | 6.5                         | ..   | 120                                 | 8.9 in. by 8.0 in. by 8.5 in. | ..         | 75 to 150                      | 43   | 3   | 6.0 | 6.3 | (47) 31.4 |
| Scott's team with trailer for 50 persons with luggage | 20.05 with trailer and luggage |                 |      |       |                | 13.67                   | 1.02              | 1.0                         | 7.87 | 0.171                               | 7.5                           | ..         | ..                             | 160  | 130 | ..  | 6.3 | (47) 31.4 |
| Mary's steam team for 32 persons and luggage.         | 2.95                           | 0.5             | 1.05 | 6.13  | 0.264          | 16                      | 1:15              | 5 in. & 5 in. by 7 in.      | Coal | 130                                 | ..                            | ..         | 6.25                           | (48) 31.4  | 1.1 |     |     |           |
| De Dion boiler, Messrs. Bosteler, Harle Co., trials   | 2.88                           | 0.27            | 3.00 | 6.1   | 1.66           | to 64                   | 1:12              | 4 in. & 4 in. by 7 in.      | ..   | 175                                 | 85                            | 5.5        | 6.9                            | (48) 31.4  | 1.0 |     |     |           |
| Thornycroft steel tip wagon, 4 cubic yards            | 2.99                           | 0.56            | 3.4  | 6.96  | 1.13           | 54 to 72                | 1:12              | 4 in. & 4 in. by 7 in.      | ..   | 175                                 | 85                            | 5.5        | 6.9                            | (48) 31.4  | 1.0 |     |     |           |
| Thornycroft 4-ton wagon at Liverpool, 1909            | 2.80                           | 1.35            | 4.5  | 11.65 | 1.07           | 64                      | 1:9               | 4 in. & 4 in. by 8 in.      | ..   | 175                                 | 85                            | 5.5        | 7.7                            | (48) 31.4  | 1.0 |     |     |           |

"Ravee" have been introduced to enable a comparison to be made between present-day practice with light locomotives and the heavy road engines built some years ago for service in the Punjab. The "Ravee" figures were obtained by Mr. Crompton from the celebrated journey from Ipswich to Edinburgh and back, a total distance of 805 miles; the figures for the other vehicles are almost wholly compiled from official accounts of trials. It will be seen that the palm for minimum water per gross ton-mile remains at present with the De Dion vehicle, a result due mainly to the very considerable amount of superheat employed in these vehicles. The importance of fuel consumption is often over-estimated; this item of expense constitutes not more than 10 per cent. of the total running cost.

The problem of the light locomotive I believe to be already solved in all its main features ; a more extended experience will, of course, suggest many improvements in details. It will be necessary to carry heavier loads than is at present practicable, and this will become possible simultaneously with the removal, or amendment, of the existing restrictions as to tare weights.

THE *Court Journal* is the latest society paper to acknowledge that "the day of the motor-vehicle is coming."

## HORSES FRIGHTENED BY MOTOR-CARS.

At an inquest on Tuesday at Great Baddow respecting the death of Wm. Pickley, a gardener, who died from injuries received through the horse he was driving taking fright at a motor-car near Margaretting, the jury found that no blame was attributable to the driver of the automobile, who was travelling at the rate of only six miles an hour, but they added a rider to the verdict of accidental death that the earliest attention of the authorities should be drawn to the many serious accidents that have recently occurred through motor-cars.

## LONDON TO EDINBURGH ON A MOTOR-TRICYCLE.

UNDAUNTED by his Land's End to Kendal experience, Mr. J. W. Stocks left Edinburgh on an Ariel motor-tricycle, early on Friday morning last, for London. Mr. William Whitson, official timekeeper of the Scottish Road Record Association, sent Stocks away sharp at 6.1 a.m., and all going well, he arrived at St. Martin's-le-Grand, London, at 2.35 on Saturday morning. Stocks' time-table was made out for twenty-one hours, and the actual time occupied, as will be seen, was twenty hours thirty-four minutes.

### MOTOR *versus* HORSE.

AT Ayr Police-Court on Monday, John Connor, hackney carriage driver, Whittlets, for assaulting Thos. Collins, motor-car driver, by striking him a blow on the eye, was fined 10s. with the alternative of seven days imprisonment. It appeared from the evidence that a good deal of bad feeling exists between the hackney carriage and motor-car men in their competition for the traffic to Burns' Cottage, Collins stating that the motor-car drivers had been frequently threatened by the hackney carriage drivers. The assault in question arose from Connor occupying one of the motor-car stands. He refused to remove when asked, and when Collins attempted to lead Connor's horse, the latter struck him on the face.

## MOTOR-CYCLE RACING AT ST. ALBANS.

At the Clarence Park Track, St. Alban's, on Wednesday afternoon last several races were held under Motor-Car Club rules. There were fifteen entries, and of these the majority took part in the races. There were four events, one being confined to local residents. This event produced a good race, the winner, Mr. E. W. Hart, coming in first from scratch in 4 min. 27½ secs. Mr. Jarrott was in good form, and won the two five-mile races from scratch, Mr. Edge in each instance being second. Mr. F. T. Bidlake was timekeeper and Mr. F. F. Wellington judge. The results were:—

Five-mile Handicap.—C. Jarrott, scratch, 1; S. F. Edge, scratch, 2; F. G. Lewin, 1,600 yards start, 3. Won by forty yards. Time, 8 min. 34 1-5 sec.

Two-mile Local Race.—E. W. Hart, 1; R. Burley, 2. Won by fifty yards. Time, 4 min. 27 2-5 sec.

Five-mile Scratch Race.—C. Jarrott (De Dion), 1; S. F. Edge (De Dion), 2; C. G. Wridgway (Phebus-Aster), 3. Won by thirty yards fifty yards separated second and third. Time, 8 min. 43.4-5 sec.

Two-mile Handicap (open).—G. F. Lewin, 650 yards start, 1; J. Machin, 400, 2; S. F. Edge, scratch, 3. Won by thirty yards; twenty yards between the next two. Time, 3 min. 52.5 sec.

THE *New York Herald* announces that a match has been arranged between Henri Fournier, the well-known French chauffeur, and an American motor-cyclist named Skinner. The race will be from New York to Boston.

WE learn that the Hon. G. Baring has recently purchased a De Dion tricycle from the British Motor Company, and may frequently be seen riding his machine in the vicinity of Hyde Park. Count Hermann Hatzfeldt, of the German Embassy, has also been recently instructed by the above-named Company in the use of his De Dion tricycle, and he has become quite an enthusiast, having just completed a very successful run to Chippenham.

In connection with the annual Bradford Cycle and Motor-Car Exhibition to be held in January at the Belle Vue Drill Hall, an effort is to be made to stimulate interest in motor-cars for business purposes. With the object referred to, makers of motor-cars are being invited to compete at the Exhibition for gold and silver medals. The competitions are not to take the form of races, but trials of efficiency and economy in working on main roads in the locality.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

TWO MOTOR DELIVERY VANS, in good condition; can be altered into wagonettes; one £70 and one £125.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

MOTOR-QUADRICYCLE, Interchangeable to tricycle, by De Dion and Bouton, very little used, exceptional bargain, in grand running order; price £67 10s.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-WAGONETTE, 5½ h.p., grand carriage, in perfect condition, new tires, repainted and upholstered, to carry four or six, free trial to buyers; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DAIMLER MOTOR-WAGONETTE, 5½ h.p., to carry eight passengers besides driver; geared low for hill climbing, suitable for passenger service, in perfect running order, hardly been used; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

BENZ INTERNATIONAL, to carry three; beautifully upholstered, very powerful, all latest improvements, in grand order; price £120.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

DE DION TRICYCLES (two).—1½ h.p.; electric ignition; in first-class order; £35. Also Werner Bicycle, in running order, £20.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

MORS CAR to be Sold.—Very fast; splendid condition; 8 h.p.; to carry six persons.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

WELLINGTON'S "MOTOR-CAR REGISTER AND ADVERTISER" posted free to any address; send post card for copy to Frank F. Wellington, Proprietor, 36 St. George's Square, Regent's Park, N.W.

COVENTRY MOTETTE for Sale, in splendid working order. New 3½ cylinder. What offers?—Grose, Limited, Northampton.

FOR SALE.—Pair High Pressure Horizontal Steam Engines, 2 by 4, made for car; wants valve and eccentric rods fitting to complete; £7 10s. Small Engineering Plant, comprising 8-in. capstan lathe, 5-in. screw-cutting ditto, three spindle drill, two single drills, milling machine, brazing hearth, grindstone, line of 2-in. shafting, hangers and pulleys, benches, vices, etc.; £150 inclusive. Write appointment—J. S., 24 Alfred Road, Acton, W.

BEESTON MOTOR TRICYCLE.—72-m.m. engine, perfect condition, three months old, fitted with tube ignition and electric ignition, complete with neat trailing car and trailing iron; £75; dispensing for car; can be seen and tried.—Apply "Motor," *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

SITUATION WANTED by First-class Mechanic as Driver and Repairer, or in motor works; age 37; fifteen months driver of Benz; well up in repairs of all kinds.—Coleman, 3 Egbert Street, Regent's Park.

DRIVER, with certificate of competency from one of the best manufacturing firms in England, requires a Situation; wages, 30s.—Address, 190 White Horse Lane, South Norwood, London

TWENTY PER CENT. INTEREST OFFERED.—Wanted to Borrow £80 on the security of 220 fully-paid £1 British Motor and Motor Manufacturing Companies' Shares.—Address, Box 90, *Motor-Car Journal*, 39-40 Shoe Lane, London, E.C.

## Trade Announcements.

[All Advertisements under this heading will be inserted at the minimum rate of 2s. 6d. for 30 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices by Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797.

NORTH OF ENGLAND AGENTS for Phébus-Aster Motors, best Motor Accessories, Horns, Toolbags, Ignition Plugs, Valves, Piston Rings, etc. Repairs thoroughly done.—J. A. Bennett & Co., 8 Exchange Arcade, St. Mary's Gate, Manchester.

"THE MOTOR-CAR MANUAL," by R. Moffat Ford, deals with every type of oil motor in a plain and simple manner, for lay readers. How to buy a motor-car, and how to treat it when bought. Why is a motor when it stops? How to make an excursion, and so forth. Treats fully of Daimler, De Dion, Benz, Bollée, Panhard, Mors, Peugeot, and other motors. Post free in exchange for Postal Order value 2s. 6d.—The Motor-Car Co., 168 Shaftesbury Avenue, London, W.C. 26-39

IVEL HOTEL, BIGGLESWADE, on the Great North Road.—A large supply of Carless' Petrol and Lubricating Oil always in stock. Ivel Cycle and Motor Works at back of hotel. Accumulators Charged.—Proprietor, Dan Albone.

THE CLIFT ELECTRIC CARS are thoroughly reliable. Batteries run thousands of miles without repairs. Prices from 255 Guineas Motor-Cycles with De Dion Engines, 2-Speed Gear and Free Motor, 84 Guineas; Ordinary, 69 Guineas. Second-hand Electric Car £300. Repairs of all kinds.—E. H. Clift, Sinclair Motor-Car Works, Sinclair Mews, Kensington, W.

BRIGHT STEEL NUTS, PINS, SCREWS, CUPS AND CONES for Motor-Cars and Cycles, in Stock or Pattern. Best English make only.—A. Marmaduke Hart, Vicarage Park, Woolwich, S.E.

## TO CORRESPONDENTS.



All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

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[No. 31.

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## COMMENTS.

At a meeting of the Essex County Council this week a long discussion took place on the subject of motor-cars. Mr. O. D. Belsham proposed a resolution to the effect "That the Local Government Board be asked to make further regulations for the better control of motor-traffic." He believed that some of the cars were driven at a rate more nearly approaching twenty miles an hour than fourteen (the limit set by the Act of Parliament); but, even if the regulation speed were not exceeded, the pace was far too fast. Mr. Belsham said the fact must be borne in mind that, whatever the pace fixed, the motor-car drivers would be sure to go faster! The time might come when horses

were extinct animals, to be found only in museums, but in the meantime people who were obliged to use horses were entitled to some further protection from the reckless driving of motor-cars. Capt. H. T. Kemble, who seconded the motion, said that in proof of the necessity of taking some action he understood that in Chelmsford within the next few weeks six new motor-cars would be launched on the road. He suggested, as an addition to the resolution, that they should ask the Local Government Board to fully advertise their regulations and to make the following additions: (1) The speed on turning corners is not to exceed five miles per hour; (2) no person is to be permitted to drive a motor-car in a public place without a certificate of proficiency from the Local Government Board." A number of other gentlemen took part in the discussion, and eventually the subject was referred to the Highways Committee, with power to forward draft regulations to the Local Government Board.

### Death of Mr. Donaldson.

GENERAL sympathy will be felt with Mr. J. I. Thornycroft and his family at the loss they have sustained by the death of Mr. John Donaldson, who, in 1872, married Miss Frances Thornycroft, the sister of the gentleman who is doing so much to secure steam traction on ordinary roads. Mr. Thornycroft and his brother-in-law were, of course, pioneers in connection with torpedo boats and water-tube boilers for the navy, but their interest in automobilism was also great. Curiously enough, the father and grandfather of the late Mr. Donaldson were the owners of all the principal mail coaches of the north of Scotland in the olden days.

### Motor-Vehicles for Breweries.

A READER, who acknowledges that he is a total abstainer from alcoholic beverages, sends a newspaper cutting from which we learn that "a motor-wagon owned by Messrs. Guinness and Co., and laden with porter, became unmanageable when turning from Thomas Street into Francis

Street, Dublin. Instead of going in the direction in which the driver intended, it backed down some yards into St. Augustine Street. The wheels, though revolving, failed, apparently, to catch a grip on the pavements. Ultimately the driver procured some sand, which he threw under the wheels. This had the desired effect, and the wagon proceeded on its way." "Being laden with porter," adds our correspondent, "what else could have been expected?" Really we fail to see the connection between the two. This, however, we do know, that no vehicles can be so well applied for the use of brewers, etc., as those mechanically propelled. Their general use would much facilitate the delivery of barrels—a process that in the case of three-horse vehicles is now often a cause of roadway obstruction.

### The Post Office and Motor-Vans.

A REPORT has reached us this week to the effect that the Post Office authorities are about to recommence the trials with motor-vehicles in the postal service in the place of the horse-drawn carts that are now employed. On the present occasion the trials, which will commence in about three weeks, will be made with an electrical van capable of carrying a load of 30 cwt. and of making a journey of thirty-two miles on one charge of the accumulators. The van is, we believe, being supplied by the Electrical Undertakings, Ltd., of Camden Town, whose display at the recent Exhibition at the Agricultural Hall attracted so much attention.

### An Interesting Race.

ARISING out of the motor-cycle racing at St. Albans last week an interesting match has been arranged between Mr. C. Jarrott and Mr. C. G. Wridgway on the one side and Mr. Fred Cooper and Mr. Marriott on the other. The conditions are that Messrs. Marriott and Cooper, mounted on a motor tandem tricycle, are to ride a five-mile race against Messrs. Jarrott and Wridgway, each of the latter being mounted on their racing tricycles. Messrs. Marriott and Cooper are to have two miles start in five. The race is to take place on the St. Albans track on Thursday afternoon, the 12th inst. The match is a sporting one, and will no doubt prove interesting, as, on the face of it, Messrs. Jarrott and Wridgway have set themselves a difficult task.

### Yorkshire and Automobilism.

ALL round the coast the motor vehicle has been recognised as a paying concern, and in many industrial centres on the Tyne and in Lancashire manufacturers are utilising mechanical power for the transport of goods. So far we have heard little from Yorkshire, where conservatism in the matter of horses seems to prevail. And yet there are towns like Bradford, Halifax, and Leeds where the trade of the district could be much assisted by the adoption of the new method. The adoption of motor-vans in conveying goods from the railway to the mills in the great textile industries is only a matter of time, and we shall be glad to hear from readers in the county of broad acres who have utilised motor-

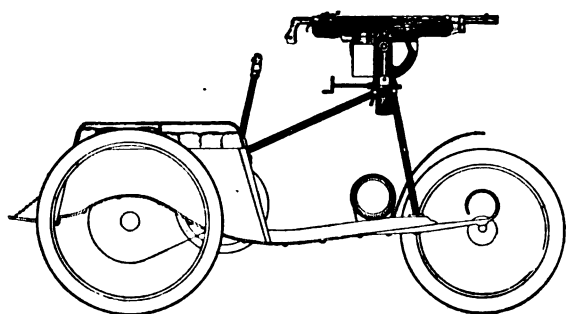
vehicles for business purposes. In Sheffield, for instance, we are told by a local paper that while the motor-car makes little headway in that town "there are indications which point to its greater employment in the city before long." What are they?

#### A Horse-Owners' League.

In a contemporary we notice the suggestion is made that a horse-owners' league should be established in defence of drivers of horse-drawn vehicles. Already there are many societies, organizations, associations and leagues, so that one league the more would do nobody any harm and find a nice little berth for some young gentleman with ideas. In this capacity we would recommend our office boy for the post, seeing that he is fully acquainted with the enemy to be fought. A horse-owners' league would be useful in educating those who possess animals up to the idea of training their quadrupeds to become used to motor-vehicles. It would certainly be good for little else.

#### An Automobile Gun-Carriage.

REFERENCE was made in a recent issue to the fact that an automobile three-wheel gun-carriage to the designs of Major R. P. Davidson, of the U.S. North-Western Military Academy, is in course of construction in the United States. An outline of the carriage, which is being built at the works of the Duryea Manufacturing Co., Peoria, Ill., is given herewith. Seats are provided for four persons, which constitutes a gun crew. There is provision for carrying 2,500 rounds of ammunition, a few accessories, and fuel. The large petrol tank is placed under the forward floor, so as to be well protected from possible danger, and fuel for a run of 200 miles can be carried. This tank is, states the *Automobile*,



practically bullet-proof. The carriage employs the Duryea system of propulsion. On it will be mounted a Colt automatic rapid-fire gun, firing about 500 shots per minute. The range of the gun is about 2,000 yards. The gun points forward, and is ready for use at any time; it is mounted on a swivel, and can be swung around, up or down, to cover any object, its sweep being that of a full half circle. The carriage will weigh about 900 lb., of which quantity the gun accounts for 80 lb. The running gear is made very strong, to withstand the rough usage to which the carriage may be subjected. A run to New York is contemplated during the present month, and possibly later, when a crew has been drilled in handling the gun, a run will be made to Washington and an exhibit made before the U.S. army officials.

#### Is Motoring a "Craze"?

*Land and Water* asks "How long will this motor-car craze last?" We would deny the wording of the question, and assert that the present development of the automobile industry is not a "craze" but a genuine, practical, business-like effort to deal with a very pressing problem in all our great cities overcrowded with horses and vehicles. The contributor to our contemporary raises an objection to the motor-car because petrol cannot be obtained anywhere—

another case in which he errs, for this is a difficulty very rarely met with. We respect *Land and Water* for its age and prestige, but it must freshen up its ideas a bit—or it will be verging on the antique.

#### The "Daily Graphic."

THE *Daily Graphic* has had its motor-car correspondence, much to the advantage of automobilism. One correspondent has given his observations of the Thornycroft steam motor-vehicle, which he followed down the greater part of Oxford Street and Holborn. "I took careful pains," he writes, "to note the noise made, and I have no hesitation in saying that the total noise was considerably less than that caused by an ordinary 'bus. It was, of course, a different noise, and therefore attracted, by its novelty, more attention." We believe this is the reason of so many attacks on motor-cars. The noise made is different to that to which people have become accustomed. Another correspondent, Mr. A. G. Grange, of Norwood, writes that he is quite willing to put up with the ungainliness—if we accept his description—of the Thornycroft car if it tends to the lessened use of horses as draught animals, and refers to the 3,620 convictions last year for working horses in an unfit state which were obtained by the Royal Society for the Prevention of Cruelty to Animals.

#### Newspaper Contradiction.

THERE is a delightful absence of uniformity in the paragraphs that appear in the newspapers with regard to the progress of the motor-car. "The motor-car craze is in the ascendant," says one leading journal, while another declares that very few vehicles of the horseless type are to be seen in the streets. Again, we read that acting managers are taking to motoring, and then comes news that their uses have yet to be ascertained by the theatrical profession. Meanwhile makers know that they are busy, that the prospects are growing even brighter every week, and that despite police persecution and newspaper criticism the new industry is making great strides towards permanence and success.

#### Automobiles and the Italian Army.

INITIATIVE has not departed from the administrative councils of the Italian Army, and having long experimented with the cycle, the military authorities are now turning attention towards the automobile. In the recent Italian manoeuvres it has been clearly demonstrated that mechanical means of traction can be successfully applied in certain directions, though inadvisable in others. Rough ground interspersed with ditches and nicely overshadowed by bushes was not an ideal condition for automobiles. But in conveying munitions of war and transporting provisions, carrying the wounded off the field or to the nearest hospital tent, the advantages of the automobile have been clearly shown, and where the main roads had to be traversed exceptionally smart work was frequently done. The result of the trials was that it has been decided to add automobiles to the equipment of three regiments; but further than that it is not intended to go. We are not among those who regard the automobile as suitable for every purpose, and before advocating its general employment in military operations would prefer to see it more common in ordinary commercial work.

#### Motor-Cars at Bath.

THE ascent of Lansdown Hill, Bath, by means of a motor-car may sound fanciful, but it has just been demonstrated that the journey can be accomplished with ease and comfort. The fact is the more remarkable when it is pointed out that in parts the gradient is as much as 1 in 7. The trials are due to the initiative of a few residents of Lansdown, who arranged with the Liquid Fuel and Engineering Co. to try the experiment of running one of their steam cars up and down the steep Lansdown Hill.

Several journeys were accomplished on Tuesday and Wednesday of last week, and the results were such as to afford the greatest satisfaction. The inconveniences attending the ascent of the hill by the most general method of locomotion are, states the *Bath Argus*, well known, especially by those who have to make the journey frequently. There is no bus accommodation, which, though annoying, is hardly surprising when the length and steepness of the hill are taken into account. The introduction of the car into Bath caused the greatest interest. There is no doubt, adds our contemporary, that a good service of cars, such as the one under notice, would do much to increase the value of property on the breezy heights of Lansdown, and the success of the experiment last week will probably lead to further steps being taken.

#### Steel or Wood Wheels for Motor-Vehicles.

JUST as in this country, the question of suitable wheels for motor-vehicles is now engaging the attention of builders in the United States. One of our American contemporaries to hand this week remarks that "there seems to be

a difference of opinion among builders as to the relative advantages of wood and steel wheels. Both have their advocates, and it would be useful were tests made to determine exact information in this matter. Practical use is, of course, a sure test of any wheel, but the manufacture of either kind requires an expensive equipment, so that previous tests would be a matter of economy. Record of miles run by different wheels and upon different vehicles is information which will in time be available." As to the relative merits of the two kinds of wheels, it seems in keeping with the widest experience to state that both may be used with advantage at present, and that the choice must depend on the weight and style of the vehicle and the conditions of the road. The wire wheel is better suited to light vehicles and good roads; the wood wheel to heavy vehicles and rough roads.

#### Opposition at Worthing.

PROOF of the position that the motor-car has gained is evidenced by the tactics of the proprietors of licensed hackney carriages at Worthing. No fewer than fifty-six proprietors and drivers of horse-drawn vehicles plying for public hire at that seaside resort have petitioned the Council against the re-licensing of the motor-wagonette belonging to Messrs. Palmer & Co. Evidently they recognise the growing desire of the public to avail themselves of the exhilarating experience of a ride on a motor-car, and feel, with Othello, that their occupation is threatened with a new and promising competitor. They declare that the effect of the motor-car has been to keep "gentlemen with high-spirited animals away from the town." That should be rather in its favour than otherwise, for such horses are often a source of alarm to nurse girls and others, as well as of irritation to the drivers of steady-going, soulless motor-cars. We hope the Council of Worthing will be wiser than its hackney carriage owners. At Bournemouth, Eastbourne, Llandudno and a score of other seaside places of eminent respectability and repute motor-car services are recognised as public conveniences. Does Worthing wish to fall behind in popular estimation?

#### Automobiles for Municipal Work.

ONLY a fortnight ago we referred to the success achieved by the motor-vehicles at Chiswick in the removal of dust from houses, and to the fact that the Hackney Vestry are at present considering a similar departure. We now learn that Mr. T. W. E. Higgins, the Surveyor to the Chelsea Vestry, has sent a letter (reprinted on another page of the present issue) to that body recommending the acquisition of three motor-vehicles to be used ordinarily for cartage of materials, and when not required for that purpose

to be employed in removing dust. We trust that the Chelsea Vestry will see fit to adopt their Surveyor's recommendation.

#### Motorism and the Post Office.

LAST week our Midland correspondent referred to the establishment of a cycle post at Grantham, and added the suggestion that motor-tricycles would be an improvement. Now comes the news that the French Post Office authorities have decided as an experiment to use motor-cycles for the clearance of the letter-boxes in Paris. Should the experiment be successful after a month's trial the hours of clearance will be made considerably later than at present. In New South Wales the adoption of cycles by postmen and telegraph messengers has proved a great success. Seventy-nine bicycles were distributed among seventy-four offices, the cost of their maintenance being £917. Previously the forage allowances to those offices had been £2,335, so that a saving of £1,418 was actually effected. That should have been considerably more, but the cost of maintenance—nearly £12 each cycle—was very excessive. Even at that figure, however, the experience of New South Wales is in favour of mechanical as compared with horse traction.

#### Horses and Motor-Cars.

CAPTAIN H. R. LANGRISHE, writing from Knocktopher Abbey, Co. Kilkenny, to the *Times*, makes a very pertinent contribution to the discussion on horses and motor-cars. Not only is he an enthusiastic automobilist, but he is also a large owner of horses and a Master of Foxhounds—facts which give him authority to speak on the subject. He recognises that horses do not like motor-cars—until they get used to them; and instead of grumbling at the stupidity of the quadrupeds he has endeavoured to teach them better manners. His experiences are recorded in the following extract:—"In October last I bought a Beeston motor-tricycle. Most of my horses were frightened at it, some terrified, but their terrors soon disappeared. I had all the horses exercised close to the carriage-drive and used to ride the tricycle up and down in front of them. In a few minutes half of them took no notice and the other half soon got right. A cart horse was the most difficult to manage; he would not go near the tricycle, so I had him ridden round the machine in a field, getting closer and closer, till at last he would stand with his nose over the engine. Now I beg to suggest how gentlemen may spend their time better than in writing to the papers on the subject—that is, go to the yard of some motor depot or some private owner, ask to have the motor engine started, and lead the pony quietly up to the machine. Do not job him in the mouth and frighten him, but walk him quietly up to the engine." In connection with this matter we notice in the *East Anglian Daily Times* a letter from Mr. Alfred C. Harmsworth, written from Thorrington Hall, Darsham, in which he says:—"Should any person in this neighbourhood wish to have his horse made accustomed to a motor-car during the next fortnight my engineer will be happy to assist him by showing either a motor-tricycle or one of the most modern French motor-carriages." Other automobilists might do the same.

It is reported that the Illinois Electric Vehicle Transportation Co., with a capital of 25,000,000 dols., will shortly have a score or more automobiles in active operation in the streets of Chicago. The electric vehicles will enter into active competition with public carriages and cabs, and the tariff will be considerably cheaper than that now in vogue.

THE American Tool Works Co., of Cincinnati, have just introduced a hub-forming and drilling machine specially arranged for making hubs for automobile vehicles. The tool will, it is stated, finish in ten hours twenty pairs of hubs from 3-in. stock, drilling a  $1\frac{1}{8}$ -in. hole  $3\frac{1}{2}$  in. long, reaming, counter-boring, forming and cutting off. The machine has a friction-gear head with a two-step cone pulley for 5-in. belt.

## JOTTINGS BY A WORLDLING.



I AM wrecked at Richmond, my dry cells having suddenly given out. I had to wire for my man to come down from town, as I could get no new cells here. This seems extraordinary, but it pales before the fact that there is no shop in the town where petrol is kept. There is hardly a village in the most out of the way part of France where one cannot get *Stelline*, or some other motor-car *essence*, and no cycle shop would be considered properly stocked without dry cells to sell to the victims of unscrupulous voltmeters. A Levantine Jew selling the silks of the east to nervous tourists is an apostle of truth compared with one of these instruments when it is trying to keep up the reputation of a set of dry cells. Eleven o'clock, and nowhere to put my quadricycle for the night! It would not get into the Roebuck where I had decided to stay, so I pushed it to the Star and Garter, only to find that the head stableman had gone for the night, and taken the coach-house key with him. To make a long story short, I decided to leave it outside the Roebuck. Soon after midnight two or three policemen tried to persuade the people of the house to wake me, but they made some excuse, and so it was wheeled off to spend its night in the police station. They were very nice about it the next morning, told me chattily they had seized the Duke of Manchester's car in the same way, and let me leave it at the station till my man came down, without charging me a penny. It is good to be able to thus chronicle deeds of kindness and courtesy instead of petty worryings and officiousness.

THE Roebuck is an excellent little hotel, where the food is good and the wine better.

I HAVE only seen one car in Richmond, a Panhard, belonging, I think, to Mr. Weguelin. Is it not curious that here in London's Neuilly one may see one car a day, whereas one could not stand at the corner by the Pavillon Bleu without seeing about one a minute.

## THE AUTOMOBILE CLUB.

IN connection with the celebration of the completion of the third year since the inauguration of the Light Locomotives on Highways Act of 1896, a special meet of motor-vehicles owned by the members of the club, and by friends introduced by them, is to be held at Whitehall Court at noon on Tuesday, November 14th, 1899. Members are specially requested to attend on their motor-vehicles at this meet, and to ask the secretary to send them carriage cards for their own vehicles and for those of friends introduced by them. At 12.15 the motor-vehicles will start for Sheen House Club. By kind permission of the committee of that Club, there will be an informal luncheon at Sheen House at 1.30. Members of the Automobile Club may obtain tickets of admission to the Sheen House Club for themselves and friends (ladies and gentlemen) by applying to the secretary of the Automobile Club.

The annual club dinner, to celebrate the completion of the third year since the inauguration of the Light Locomotives on Highways Act of 1896, will be held at the Whitehall Rooms of the Hotel Metropole, Whitehall Place, on Tuesday, November 14th, 1899, at 7.45 for 8 p.m. The seats will be limited in number. Mr. Roger W. Wallace, Q.C., the chairman of the Club, will take the chair. Members may introduce friends (gentlemen, not ladies), and it is hoped that members will do their best to introduce gentlemen who are likely to join the club. The cost of the dinner, without wine, is 10s. 6d. per head, and seats will be allotted in order of priority of application, but no application can be considered unless it be accompanied by the proper remittance.

## THE TURGAN-FOY LIGHT MOTOR-CARRIAGE.

AN exhibit at the recent motor-car show in Paris which presented several novel features was the light two-seated *voiturette* shown by Les Ateliers de Construction Mécaniques (Turgan & Foy), 96 Rue Carnot, Levallois-Perret, and of which an illustration is given herewith. The frame of the vehicle is built up of steel tubing *l* (Fig. 1) and is supported on the axles—which are hollow—by strong springs. The motor *A* is of the horizontal two-cylinder petroleum-spirit type of  $4\frac{1}{2}$  h.p. The two cylinders are arranged opposite to each other, the piston rods working on to a central crank-shaft, the two cranks being set at an angle of 180 deg. to each other. A feature of the arrangement is that the crank-shaft is located vertically and drives by means of pinions a second vertical shaft which not only acts as the cam shaft actuating the exhaust valves but also carries a large horizontal fly-wheel with steel wire spokes for arms *B*.

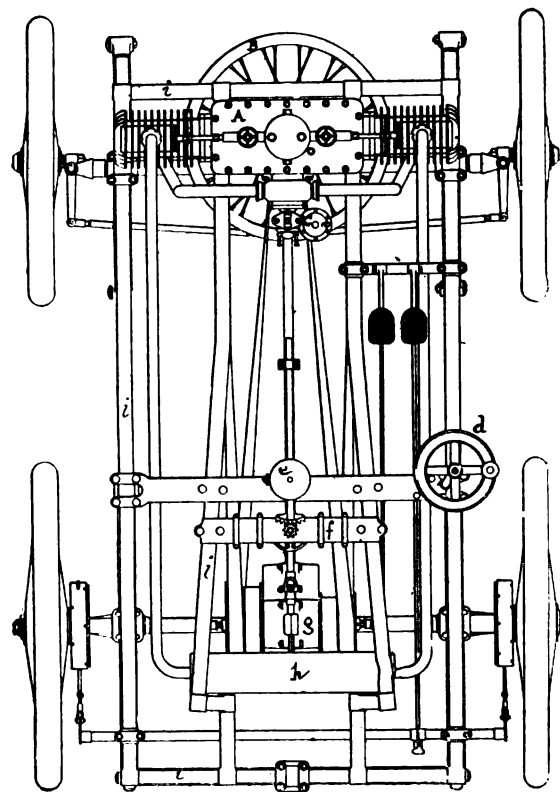


FIG. 1.—PLAN OF THE TURGAN-FOY VOITURETTE.

- |                                   |  |
|-----------------------------------|--|
| A. Motor.                         | f. Belt shippers.                            |
| B. Horizontal fly-wheel.          | g. Differential and variable speed gear box. |
| C. Longuemare carburetor.         | h. Silencer.                                 |
| d. Steering hand wheel.           | i. Tubular frame.                            |
| e. Variable speed control handle. |  |

Two pulleys are also mounted on the motor-shaft converted by belts to two pairs corresponding fast and loose pulleys on a horizontal counter-shaft at the rear of the car. From the counter-shaft the power is transmitted to the rear road-wheel axle through one or other of two sets of spur gearing enclosed in a gear case. Four forward speeds are obtainable, two by means of the belts and two by the duplicate spur-gear transmission at the rear, there being two distinct levers. Steering is controlled by a small hand wheel *d* at the side of the car, while two brakes are provided—both operated by foot pedals—one acting on a drum on the differential gear and the other on drums on the rear axle. The cylinders are provided with radial ribs for cooling purposes. The ignition is electrical, while the carburetor is of the Longuemare type. The road wheels are of the suspension type with pneumatic tires, the weight of the two-seated vehicle being given as  $4\frac{1}{2}$  cwt.

## The Turgan-Foy Light Motor-Carriage.

(For description see opposite page.)

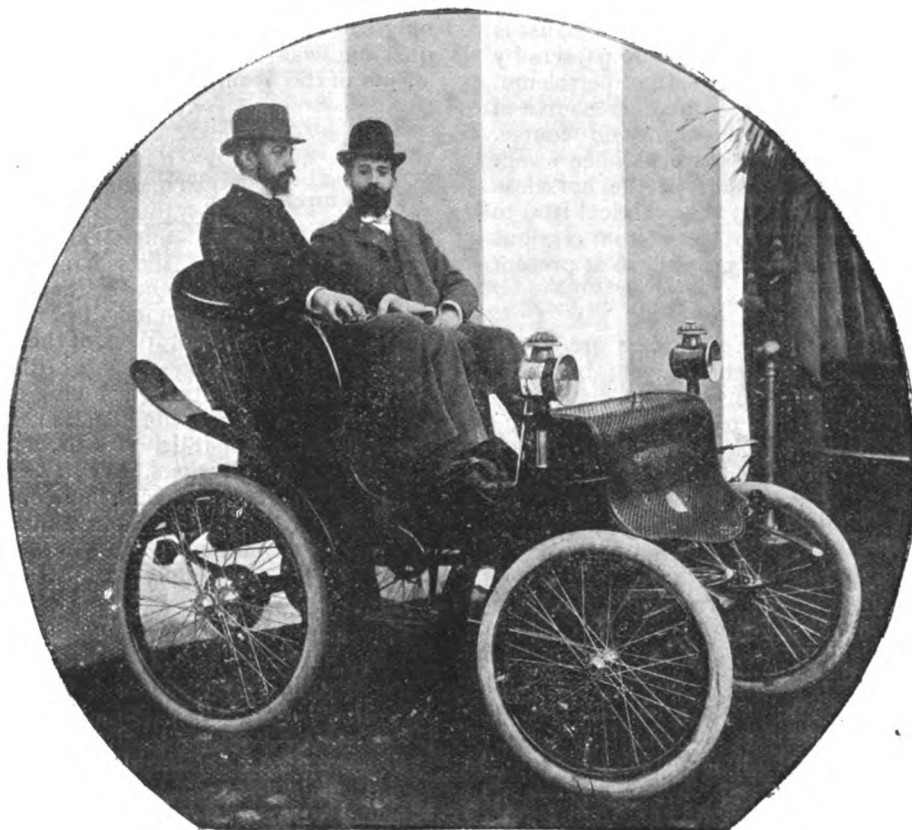


FIG 2.—GENERAL VIEW.

### SCOTTISH NOTES.

#### Lanark Meeting.

MUCH comment was excited at Lanark last week by the appearance of several motor-cars at the races. Lanark race meeting is a very old-established one, and is practically the wind-up of the Scottish racing circuit.

It is always attended most faithfully by the Lanarkshire county people, a great many of whom have seats in the neighbourhood. Amongst those present were Prince Francis of Teck and the Grand Duke Michael of Russia, who accompanied Mr. and Mrs. Hope Vere, of Blackmoor. There is usually a fine show of coaches, family 'buses, and other equipages, which bring the various house parties in the district to the meeting. Indeed, for the last two or three years the members of the Lanarkshire Four-in-Hand Club have made a point of having a meet on the occasion of this two-day fixture and driving to Lanark together, lunching afterwards in a special marquee erected for their benefit. It was significant that there was no meet of the Four-in-Hand Club this year, and that several of the county families, who have for long turned up at the *venue* of the day's sport in the family coach, on this occasion came "whirring" gaily upon the scene in automobiles. Plenty of good-natured chaff was indulged in between the votaries of the old and new methods of locomotion, and a number of the former had to admit that it was a great convenience not having to send one's horses away to be stabled till they were required for the homeward journey. The ladies, who were conspicuous among the occupants of the horseless carriages, if one were to judge from the seraphic smiles which lit up their fair faces, appeared to be enjoying immensely the sensations of an automobile

ride. "Ripping," "just lovely," "awfully jolly," etc., were some of the terms used by them to describe what it felt like when travelling at full speed or coasting a small hill. When the ladies take up a thing they do so in no half-hearted fashion. Men have usually to do as women tell them, and when a motor-car comes to be requested by a fair daughter of Eve (whether it be sweetheart, wife, or daughter) the male biped will, we fancy, have to procure it, whether he is an advocate of the new method of locomotion or not.

#### More Proof.

THE number of motor-cars seen touring about the Highlands of Scotland this year has been quite phenomenal. In chatting with another well-known hotel proprietor recently, the subject of motor-cars incidentally cropped up, and the landlord remarked that they appeared to be the coming thing. He said that even in the Trossachs and district hardly a day passed but what some car or cars passed through the place or stopped at his hotel. Of course, this only goes to prove the truth of his prefatory statement that motor-cars are "coming things." Only those who have experienced it can speak of the enjoyable and exhilarating nature of motor-ing, and no place is more delightful for the pastime than in the Highlands of Scotland. The scenery is beyond compare, both in variety and grandeur, the choice of routes is innumerable, and the roads, being in a good many cases those used by coaches running in connection with trains and steamers, are, in most instances, of fairly good surface. Bad roads are to be met with, of course, and hills which cause one to draw a deep breath, but these are exceptions and not the rule, and when they are met with help to add spice to the automobilist's fare, and enable him afterwards to dilate with pride



on the fact of having tackled such-and-such a hill on the second speed (imphm!). Almost daily I hear, often in a roundabout way, of the most unlikely parties having indulged—one would almost imagine surreptitiously—in a motor-car run, and in nearly every case the verdict has been in favour of the horseless carriage. A great many express surprise at perceiving no smell when “on board,” being unaware, of course, until they are told, that the exhaust is usually placed behind and below, so that it is only passers-by who are occasionally treated to a delicious sniff of petroleum. The absence of vibration when running is another source of wonderment to erstwhile prejudiced parties. Of course, automobilists know that these prejudices are at once swept away when practical trial has been made of the horseless carriage, but the difficulty often is to get the practical trial to come off. It is pleasing, therefore, to learn from various sources that an increasing number of people are at present “sampling” motors.

#### Versatile Motor-Cars.

MOTOR-CARS at weddings are not a very common sight as yet; but who knows what changes a few years may produce in this respect? I saw one at a wedding in Motherwell last week in company with an ordinary horse brougham and landau. The car was a covered wagonette, the material used for this purpose being enamelled leather. It had glass windows at each side, and appeared both roomy and comfortable. It carried eight people and made itself singularly useful conveying people backward and forward from the bridal house, church, and station. The ease with which it could be manipulated appeared both to astonish and delight several of the passengers, who apparently were making the acquaintance of an automobile for the first time. The day was a cold one, and some ingenuous damsels who rode in the car were heard to remark that they rather liked the vibration when the car was standing, as it helped to keep them warm. Curious, isn't it, how some people can see an advantage in what others consider a drawback?

#### A Stirling Omnibus.

I SAW a large Stirling steam 'bus on Saturday conveying some twenty “picnickers” for a spin. It picked up its passengers at Blantyre, a village a few miles from Hamilton, and drove them to Strathaven, some twelve miles distant, with about four miles up-hill having gradients of 1 in 30, 1 in 20, 1 in 15, and 1 in 12. The 'bus, which excited a great deal of interest *en route*—and naturally enough, too, since it is the only one in Scotland—ran at a capital pace, ascending the long gradients well, and delighted all concerned by its performance. The roads were very soft from the recent rains, making the test a still greater one. I should imagine that a few machines of this description might very well be put on the road by an enterprising party in some of the Highland coaching districts, and that with success too.

#### The Edinburgh Autocar Co.

THE first general meeting of the Edinburgh Autocar Co., Ltd., was held in Edinburgh last week. Mr. John Macdonald, the chairman, said that, although a statutory meeting with no business to transact, he might make a statement as to what the Company had been doing and intended to do. Having spoken of the difficulty experienced in getting delivery of cars, the chairman referred to another difficulty—that of obtaining competent drivers. These were not in the market, and they found that they had to train their own drivers. That they had been well trained was shown by the fact that they had not had during those months one single accident to life or limb in connection with their cars. These delays had kept them back, but they hoped in a few days to commence running a regular service from Newington, Morningside, and Merchiston. Quite recently their manager,

Mr. Love, had seen reason to send in his resignation. That the directors accepted, and they had appointed their secretary, Mr. T. Roland Outhwaite, as manager. Their private cars had done exceedingly well during the summer months, one of them having been three times round Scotland. Replying to questions by shareholders, the chairman said the directors were keeping an eye on the question of larger cars. The only large car they thought of was the steam car, and the question was whether these would meet with the requirements of the licensing authorities.

#### Place aux Dames.

A MOTOR-CAR was requisitioned one day this week by a well-known nobleman's family, and for what purpose, think ye? That the young ladies might have an opportunity of trying their hand at steering and manipulating an automobile. One gentleman tried his 'prentice hand at the new sport also, but had promptly to take a back seat, the go-ahead representatives of the fair sex simply “knocking him into a cocked hat” as regarded skill and steadiness in steering and dexterity in changing speeds. One young lady in particular got into the knack of handling the car so well that the professional driver who was present to coach them would *almost* have trusted her to drive home the car had she been so inclined. So far, I have only seen one or two ladies driving a car in Scotland, but after this we may soon expect to see ladies riding about in smart little automobiles just as they at present do in pony traps.

#### The Motor Industry.

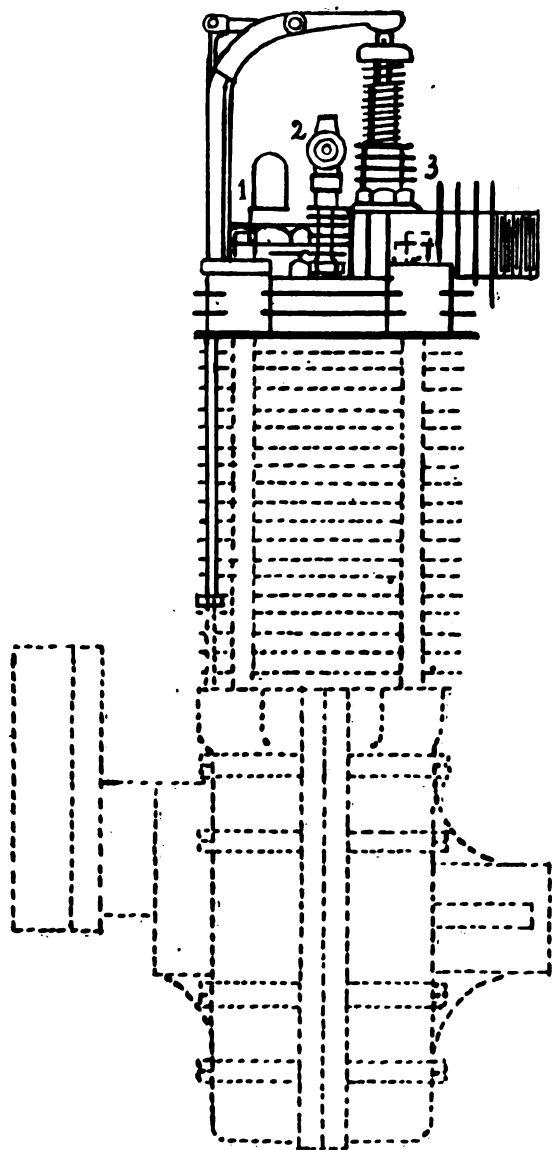
I HAD a long chat the other day with Mr. Stirling, of Stirling's Motor-Carriages, Ltd., on the subject of the present position and the near future of the industry. He was satisfied that although there were many weak points still remaining in some departments of the industry the business of motor-carriage manufacture was rapidly settling down into a sound position. “Inexperience and, perhaps, self-conceit have been the chief hindrances to earlier success in this country, and in the light of fuller knowledge and later experience makers have learnt how much they were indebted to their Continental compeers,” and British motor-car builders were profiting by following a good lead—for a time, at least, it was safe to do so. Mr. Stirling believed that 1900 would be a highly important one in the history of the movement, and his own Company were making special preparations for it. He was of the opinion that a large business would still be done in the way of motor hiring concerns throughout the country, but expressed the belief that this department could not be “rushed.” Men could not be trained in the proper care and treatment of delicate pieces of mechanism in a day, and it was, in his opinion, the highest folly to rush into the formation of hiring companies which at the moment seemed the most prominent feature of business in the South. Twelve or eighteen months hence shareholders in many of these new concerns would agree with him, and the debit balance of “profit and loss” would be explainable in one word, “inexperience”—inexperience of drivers, inexperience of management. All this he admitted of course was being improved upon week by week, but a word of caution he feared was needed to prevent serious damage being done to the industry, restricting its natural growth, through the over-eagerness of a few interested people to catch immediate business regardless of the future. The largest business was, however, to be done with the “private user,” and with the advent of light motor-vehicles at a moderate price an enormous business was coming.

“BROWN HEATHER.”

THE American Tool Works Company, Cincinnati, has on hand a large contract for machine tools for automobile manufacture in France.

## THE BUCHET IMPROVEMENT IN SMALL PETROLEUM-SPIRIT MOTORS.

THE accompanying illustration gives a view of a De Dion motor fitted with the "culasse Buchet" recently introduced in France, and which seems to be one of the novelties and an improvement to high speed petroleum-spirit engines. It is built so that the valves are exactly on the top of the cylinder, 1 being the inlet valve, 2 the compression tap, and 3 the exhaust valve. In the ordinary De Dion motors a certain portion of the explosive gas is located in a volume on the side of the ignition chamber, and when the explosion takes place these gases do not act directly on the piston and heat very



much this part of the motor. Moreover, the exhaust is more difficult than if the gases could escape directly from the cylinder end. M. Buchet claims that by utilising the whole force of the explosion of the mixture directly behind the piston he can effect an increase in power of 30 per cent. For racing purposes this new cylinder top has proved a success, and no doubt it will soon be adopted for ordinary motor-cycles, for races are, after all, the best way to test the real efficiency of any new design.

D. FARMAN.

THE Twentieth Century Automobile Co. is the title of a company which has just been formed at Cleveland, O., to run a service of motor-vehicles in competition with the electric tramways.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### German Roads.

WE understand that the German authorities have decided that henceforth the various districts will be held legally responsible for all automobile and cycle accidents which occur within their boundaries and which are directly attributable to the bad condition of the roads. We can but hope that this new ruling will have the effect of causing the local authorities in one or two provinces to remedy without delay the present defective condition of their roads.

### Motor-Cycle Race at Geneva.

ON Sunday last there was contested at Geneva a motor-cycle race promoted by the Cycling Union of Switzerland under the title of "Le Championnat d'Europe." The competitors were divided into two heats, the placings being as follows:—First heat: 1, Osmont; 2, Gaste. Second heat: 1, Vasseur; 2, Demester. In the final, which was contested over a distance of twenty kilometres, Osmont took the lead at the start, and was never headed. He finished 650 metres in front of Vasseur, who just managed to beat Demester. The winner's time was 21 m. 8 s.

### Letter Collection in Paris.

THE French Sub-Secretary of State, Monsieur Mougeot, has decided that during the whole of the present month the collection of letters in Paris shall be effected by chauffeurs mounted on petrol motor-cycles. In the event of the experiment proving successful, no doubt this means of collection will be generally adopted throughout Paris, and the authorities will thereby be enabled to considerably delay the hour of collection by reason of the rapidity with which the operation can be effected. It is in this direction that English houses might render good service to the G.P.O., as the work is comparatively light and does not involve those difficulties which the employment of large and cumbersome motor-vans gives rise to.

### The Bordeaux-Biarritz Race.

IN spite of the adverse weather conditions, this race was successfully brought off last Saturday and Sunday. The competitors in the tourists' category, numbering fifteen cars and fourteen motor-cycles and voitures, were despatched on Saturday, at 9 o'clock, from the *contrôle* installed at the corner of the Boulevard de Bègles and the Route de Toulouse, Bordeaux. They broke their journey at Mont-de-Marsan, and on Sunday morning at 12 o'clock re-started *en route* for Biarritz. The racing division left Bordeaux on Sunday morning at 9 o'clock, and several of them had passed through Mont-de-Marsan previous to the departure of the tourists. The ultimate classification at Biarritz was as follows:—Racing Cars (Class A)—1, Levegh, 4 h. 24 m.; 2, Antony, 4 h. 31 m. 30 s.; 3, Petit, 4 h. 56 m. 3 s.; 4, Kœchlin, 5 h. 19 m. 2 s.; 5, Broc, 5 h. 32 m. 20 s.; 6, Georges, 5 h. 38 m. Racing Motor-Cycles (Class B)—1, Bertin, 4 h. 40 m.; 2, Rigal, 7 h. 5 m. Racing Voitures (Class C)—1, Ravenez, 6 h. 23 m. Tourist Cars of 6 h.p. or less (Class A) carrying at least two persons (Series 2)—1, Lafitte, 7 h. 17 m.; four persons (Series 2)—1, Sanson, 7 h. 53 m.; 2, Barberau, 8 h. 45 m. Tourist Cars of over 6 h.p. (Class B) carrying at least two persons (Series 1)—1, Knapp, 8 h. 4 m.; four persons (Series 2)—1, Rolls, 6 h. 44 m.; 2, Calvet, 7 h. 15 m.; six persons (Series 3)—1, Versein, 15 h. 6 m. Tourist Voitures and Motor-Cycles (Class C) carrying one person (Series 1)—1, Cuzacq, 7 h. 35 m.; 2, Geo, 9 h. 9 m.; 3, Couderc, 12 h. 35 m.; 4, Jousset, 13 h. 38 m.; two persons (Series 2)—1, Cornilleau, 9 h. 13 m.; 2, Dubois, 9 h. 51 m.

**Automobile Accident.**

M. FADET, of Amiens, accompanied by a cousin and a friend, met with a nasty accident some few nights ago at Domant-sur-la-Luce, the car going over an embankment and falling from a considerable height. M. Fadet and his cousin were rather bruised and shaken, but the friend escaped without injury.

**The Heavy Motor-Vehicle Trials.**

THE third annual international competition for large automobiles promoted by the Automobile Club of France commenced this week at Versailles, and will continue until the 11th instant. The regulations are similar to those of previous years, the minimum load for vehicles designed to carry passengers or goods, or both, being one ton, while the delivery vehicles are required to convey 750 kilogrammes. During the trials the competing vehicles will travel about 340 kilometres, or some 212 miles. The following is the list of entries: La Société des Voitures Electriques Krieger, delivery van; La Compagnie Internationale des Transports Automobiles, delivery van; Messrs. De Dion & Bouton, 30-h.p. steam omnibus, 25-h.p. steam omnibus, 25-h.p. steam lorry and a 50-h.p. steam tractor; Société des Anciens Etablissements Panhard, omnibus; Messrs. De Dietrich et Compagnie, lorry; M. Edmond Chaboche, 15-h.p. delivery van; and M. Valentin Purrey, 30-h.p. lorry. As in previous years, the French Minister of War has deputed an officer to follow the trials.

**A New Automobile Service at Marseilles.**

THE authorities have granted M. Massot, of Marseilles, permission to institute a service of automobiles between that town and Gap, the route selected being by way of Montmeyan, Tavernes, Barjols, Brignoles, Saint-Maximin and Saint-Zacharie.

**Berlin-Rheinsburg Race.**

ON Tuesday, the 26th ultimo, in miserable weather, the third and last of the races organized by the Committee of the Berlin Automobile Exhibition, was contested. Only seven motor-cycles competed, and the three placed men were Brauda, Schaller, and Pittelkow, in the order named. The distance was 150 kilometres, and the winner's time 5 h. 4 m. 50 s.

**The Berlin-Leipzig Race.**

As we mentioned in our last issue, Messrs. Benz & Co. entered a special racing car in this race, the result of which has given the firm much satisfaction, seeing that it carried off the first prize in the racing section. The new vehicle, which has a motor of 9 h.p., has been constructed very rapidly, Messrs. Benz only deciding on its manufacture after the recent Mainz-Coblenz race. Benz vehicles figured very largely in the race to Leipzig, for not only did they secure the first but also the third prize in the racing section, while in the touring class both the first and second places were secured by cars turned out by the Benz firm.

**Strike of De Dion-Bouton's Workmen.**

ON Monday last at 3 o'clock, 700 workmen employed at MM. De Dion and Bouton's factory at Puteaux went out on strike. As in the case of Monsieur Clément's men some weeks ago, their grievance was against one of the foremen and they demanded his immediate dismissal. The Count de Dion refused to accede to their request and gave them until Monday in which to return to their work. This some 400 did, and the remainder are looked upon as dis-

charged, and the management are engaging fresh hands to take their places.

**Baron P. de Crawhez's Automobile Tour.**

It will be remembered that last winter Baron Crawhez, the well-known Belgian automobilist, made a most extensive tour in Algeria, and we now learn that during the forthcoming winter he will thoroughly explore the central provinces of Italy.

**Motor-Car Construction in Austria.**

THE Austrian Landerbank is engaged in the formation of a new company to undertake the construction of motor-cars in Austria. The old engineering works of Messrs. Escher Wyss & Co., at Leerdorf, near Vienna, have been acquired on behalf of the new company, and it is also reported that the Landerbank has purchased the Austrian and Hungarian patent rights in the Amedée Bollée automobiles of Messrs. De Dietrich & Co., of Luneville, France.

LA SOCIÉTÉ COMMERCIALE D'AUTOMOBILES, of 97 bis Avenue de la Grande Armée, Paris, has just increased its capital to £60,000.

ACCORDING to one of the ladies' papers, Lady Eleanor Brodie has had a dress of soft kid, trimmed with chinchilla to wear when motoring.

WE learn that the purchaser of the special Iveagh phaeton with hood built by the Motor Manufacturing Co., Ltd., for Mr. J. S. Gretton and referred to in our last issue is Mr. H. Passmore, of Bournemouth West.

MANN'S PATENT STEAM CART AND WAGON CO., LTD., has just been registered, with a capital of £25,000, to acquire the business carried on by James H. Mann under the style or firm of "J. H. Mann & Co.," at the Canning Works, Canning Street, Leeds, to adopt an agreement with the said vendor, and to carry on the business of steam cart, wagon and motor-car manufacturers, engineers, boiler makers, smiths; iron, brass, and steel foundries; metal workers, etc.

WE have received a letter this week from one of our readers who is desirous of entering a French motor-car works in the position of an apprentice, paying a premium as in English works. The gentleman in question has a good theoretical knowledge of scientific and engineering subjects. He is anxious to obtain particulars of the position of apprentices in such works, premium required, and chances of employment, after serving full time, etc. Probably some of our readers may be able to afford the desired information.

ON Monday last the Aberdare Valley Motor Service Company was registered with a capital of £5,000, for the purpose of carrying on the business of carriers of goods and passengers, tram-car, omnibus, van, carriage, and motor-car proprietors, and to provide for and carry on a service of such vehicles in Aberdare Valley and elsewhere. Mr. W. D. Phillips is the secretary, pro tem., and the registered office of the Company is 7 Canon Street, Aberdare. We understand that arrangements have already been made by which the Company will commence trading without delay.

THREE automobiles have been built at the works of the Fischer Equipment Company, in Chicago, for the United States Signal Corps. One, a trap, will carry four men, and will be used by the officers of the corps. The other two are covered wagons designed to carry the tools, signals, telephone apparatus, etc., necessary for a signal corps division. Each of these wagons has a carrying capacity of 1,500 lb. and a seat for two men. All three vehicles are equipped with 9-h.p. motors. They were built according to plans and specifications drawn up under the supervision of the Government authorities, and will be tested in Chicago by officers from the U.S. War Department.

## A NEW STIRLING TOURING CAR.



THE accompanying illustration reproduced from a photograph sent us by our Scottish correspondent, "Brown Heather," represents a new touring-car which was recently delivered by Stirling's Motor-Carriages, Ltd., of Hamilton, N.B., to a gentleman in the North who has had his horses and carriages replaced by an automobile vehicle. This latest production of the Hamilton Works possesses numerous points of special interest. At a single glance it can be seen that the carriage is designed for comfort and use in all weathers. It is of the wagonette type, and built to accommodate four persons inside and two on the front seat. The top, which is a panelled one, is portable, so that the carriage can be used as an open car in fine weather. The windows in the top are all movable, and can be let down or raised in the usual way as desired. A finely upholstered partition separates the driving-seat from those behind, and



communication may be made between the passengers and the driver by means of a movable window in the centre of the partition. It will be observed that doors are provided at the side of the driving seat, and these also are fitted with movable windows. The doors are fixed on a special form of hinge, whereby the doors can be instantly removed at will. The windows over the dashboard hinge upward in the usual way. The upholstery of this car is in fine morocco. It is handsomely painted, and does the makers great credit. All the doors are fitted with special locks, so that goods or articles left inside the car at hotels and other stopping places cannot be tampered with or removed. The motor is a 5½-h.p. Daimler of the ordinary type, the vehicle being geared to thirteen miles per hour.

MESSRS. JOHNSON & PHILLIPS, electrical engineers, Old Charlton, have now started a steam lorry in their cartage department. The lorry is built to carry 4½ tons, and has been supplied by the Liquid Fuel and Engineering Co., of East Cowes. We understand that the firm are so far satisfied with the innovation.

A SPECIAL feature of the Midland Cycle and Motor-Car Exhibition which is to be held in Bingley Hall, Birmingham, from Thursday, January 25th, until Saturday, February 3rd, inclusive, will be the motor-car and cycle section. During the exhibition the directors propose organizing a series of motor trials (not necessarily speed contests) over certain Midland roads, particulars of which will be announced later.

## MIDLAND MOTOR NOTES.

By "HERCULES."



### The Control of Motor-Cars.

PEDESTRIANS do not yet appreciate the great control which motor-drivers have over their vehicles, and some incidents at present occasion surprise. When motors are more familiar in the streets, incidents which now form the subject of comment will pass unnoticed. A few days ago in Coventry I saw a collision avoided in a way which gave rise to very favourable comments with regard to the control exercised over motors. At the Burges, one of the narrowest parts of one of the principal streets in the city, a horse and cart stood near the kerbstone. Travelling towards the station was a motor-van bearing the name of a Bournemouth firm. Its speed was about seven or eight miles an hour. Just behind it was a car belonging to the Motor Manufacturing Co. When forty or fifty yards from the stationary cart the driver of the car, which was travelling faster than the van, thought he could pass the van before reaching the cart, but at the last moment he found it was impossible. A collision seemed inevitable, but the driver of the Motor Manufacturing Co.'s car pulled up almost immediately. A bystander exclaimed to his friend, "Jack, I made sure those two cars would run into one another."

### New "Allard" Motor-Cars.

THE Allard Cycle Co., Ltd., Earlsdon, Coventry, are paying a good deal of attention to motor manufacture. Two cars already produced by this Company have met with a favourable reception; one of the cars is upon the sociable principle, while in the other the passengers sit face to face. Each of the cars is constructed for two passengers. Another car the Company intend to produce will seat two or four passengers. This will be of 4 h.p., but the other two are of 2½ h.p. each. The largest of these cars weighs 5 cwt. I had a ride this week in the car which seats the two passengers face to face, and I was soon satisfied of the smoothness of the running. It is very compact, being but 42 in. in width, and those whose storage accommodation is limited will no doubt appreciate this feature. The price is moderate, and the car will meet the needs of those who require a small, compact, and serviceable vehicle. The vapour and compression tops, together with the steering gear, are conveniently situated, also the main lubricator. The car has two speeds, and the speed can be also varied by a commutator which is fixed near to the driver's hand. The road wheels have pneumatic tires. The car mounted Gibbett Hill—a fair test—at a speed of between nine and ten miles an hour. The steering is by means of a ratchet and pinion, and the body of the car is suspended on two compass springs at the front, and on two C springs at the rear. These springs enable the seats to retain a horizontal position notwithstanding the convexity of the roadway, and they also counteract any inequalities of the road, and contribute greatly to the smooth running of the car. The engine and fittings of the car are made on the premises, and the Allard Co. are laying themselves out to supply motors or fittings separately.

### A New Motor-Tricycle Saddle.

CYCLISTS and those who ride motor-tricycles cannot put too high an estimate upon a comfortable saddle. Nothing wearies rider more than saddle-soreness, and those who have gone through the various stages of that unpleasantness will ever be ready to sing the praises of any manufacturer who designs and makes a saddle that is easy and comfortable. E. Lycett, Ltd., of High Street, Deritend, Birmingham, have come very much to the front during the past few years in cycle saddle construction, and have now

brought out what appears to be a very suitable saddle for motor-tricycles and quadricycles. From its appearance it resembles an enlarged cycle saddle. It has four coil springs at the back and a strong spring at the front. It measures 12 in. across the widest part, and is 14 in. in length. This particular saddle has been in the hands of one of the leading manufacturers in Coventry, and for two months past he has given it a severe testing. He has found it so comfortable that he told me he intends to fit it on all his motor-tricycles next season. The extra speed of motor-tricycles and the great vibration necessitate the clip being strong, and on this particular saddle great attention has been paid to that feature. The clip is very powerful, and retains a firm grip upon the saddle pillar. The saddle can be adjusted both vertically and horizontally.

#### Machine Tools for Motor-Car Construction.

MESSRS. WEBSTER AND BENNETT, machine tool makers, West Orchard, Coventry, have recently found it necessary to again secure additional premises in order to cope with their increasing trade. The works have grown into

large dimensions with the developments in the cycle trade, and the firm have several times been compelled to move into larger premises or acquire additional accommodation in West Orchard. They have now secured works in George Street, Coventry, and a large piece of adjoining land in view of future developments. They have assiduously studied the requirements of cycle manufacturers during the past decade, and have been eminently successful in supplying tools for cycle construction. They are now catering for the motor trade, and are meeting with success. Their specialities include the vertical and horizontal type of automatic profiling machines.

#### Increasing Popularity of Motor-Cycles.

Most of the cycling papers are now devoting a good deal of their space to "chats about motors," or in detailing in bright, readable form the experiences of old cyclists who have become "fascinated" by motoring. This speaks

for itself, and proves that the future of the motor industry is regarded as most promising. One reads everywhere of the pressure of orders which firms are enjoying who have thrown themselves actively into the industry, and in most instances the writers seem well informed on the subject. In one of my notes a fortnight ago I stated that the croak of the motor-horn in Coventry is as familiar as the tinkle of the cycle bell. A fellow scribbler on Midland matters has gone one farther, for he says "Coventry is rapidly developing into a screeching city as the result of the motor-car." Indeed!

THE Western Automobile Company has been formed at Denver, U.S.A., with a capital of £2,000.

MR. C. H. OLIVERSON, of Queen's Road, Southport, to whose new motor-car we referred in a recent issue, is removing to larger premises at Kendal.

THE motor-omnibus service between Bournemouth and the adjacent Canford Cliffs was inaugurated on Monday. It will be remembered that we gave an illustration of the vehicle employed in this service in our last issue.

THOSE well-known motor-cyclists, Messrs. Jarrott and Wridgway, have challenged the present holder of the Crystal Palace Brassard, Mr. S. F. Edge, and he will meet them both on the Palace track on Saturday, the 14th inst. A big struggle may be expected for the coveted honour.

At a meeting of the Holland (Lincolnshire) County County Committee at Spalding on Tuesday a resolution was adopted calling upon the police to enforce the law against road-racing cyclists and drivers of motor-cars going at excessive speed. The Chief Constable of Lincolnshire afterwards stated that the police were doing their best, but that identification was difficult.

## CORRESPONDENCE.



### PROSECUTION OR PERSECUTION AT ABERYSTWYTH.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In your issue of September 15th you kindly published a letter from me in which I stated that I had been served with a second summons for furiously driving through a village seven miles from Aberystwyth. I dare say some of your readers will be interested in the result of the same. On Thursday last the said prosecution took place, before a bench of seven, composed of five of the principal landowners in the village in question and two tradesmen. The policeman stated that I was driving at a speed of from fifteen to eighteen miles an hour. My lawyer asked him if he had ever seen a motor-car before, and his reply was that he had seen this car four or five times and the small Benz carriage which was here last year; he admitted that there were no persons or conveyances in the road at the time. My lawyer was able to convince the Bench that we were only proceeding at the third rate, viz., 7.4 miles per hour, yet in spite of the policeman's uncorroborated evidence the magistrates convicted, and imposed a fine of £1. Of course, my lawyer gave notice of appeal, but is it worth the cost, seeing that five out of the seven are sure to be on the Bench at next sessions?

One gentleman on the Bench has since told me that they knew full well there was no case, but owing to the prejudice and pressure brought to bear on the other magistrates by one or two of the landowners on the Bench there was nothing else to do but convict.

The sooner this army of martinets who form the Bench and do as they like are superseded by a paid stipendiary the sooner we shall get justice done.

Aberystwyth,  
Sept. 30th, 1899.

Yours truly,  
W. H. HOLLIER.

### "A MODERN MARVEL."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Knowing the great interest you take in all records of the feats of motor-cars, I thought an account of a run I had on my 6-h.p. Panhard to York and back the other day would interest you.

Accompanied by my friend Mr. Jones and a large luncheon basket, we set out at six o'clock on a cold, grey morning with some feelings of regret for the comfortable "downy" we had perforce just left. The reason of this early rise was that we wished to return home on the same day. Fancy a distance of sixty-eight miles in one day! This would indeed create a record, and set the hair of Rolls and Stocks on end with jealousy. After a hasty breakfast of sardines and cold coffee we mounted our good little car, Mr. Jones causing some merriment to a belated groom by his hopeless endeavours to turn the starting handle. However, at about seven o'clock we succeeded in getting an explosion, and, lo, she moved! and noiselessly and gracefully glided forth into the unknown regions of the great North Road. The early dustmen stared amazed at the unusual sight of "two rosy-faced men" gliding smoothly along the beautiful pavements with unseen force. In about half an hour we were clear of the town, and putting on all speed were soon skimming along at the rate of quite six miles per hour! Oh, that glorious feeling of freedom! Mr. Jones was so overcome that he compelled me to stop the car while he got out to test the specific gravity—of the special Scotch that we had thoughtfully provided ourselves with. In about two hours we arrived at Thirsk, a distance of nine miles, and, being market day, we went through the vast concourse of farmers and horse-dealers with ill-concealed marks of approval. Think what a splendid advertisement this was.

Soon after we left Thirsk we saw coming towards us a splendid motor, which pulled up and passed the time of day. It contained "two-rosy faced" gentlemen, who were



taking the car to Saltburn, where it would negotiate the public traffic. After we passed them we noticed their track, and it will show the enormous speed they had been travelling when I tell you that they had been four times off the road into the ditch! We proceeded some distance, till we came to a very stiff hill, which "my little car" (weight, one ton) took with the greatest ease at quite one mile per hour, and descended the other side with fearful velocity, going quite ten miles per hour, both the brakes having broken, and a steering pin coming out. However, fortunately nothing worse occurred, and, thinking we had better make some repairs to ourselves before starting on the car, we set to work with a will on the luncheon basket. Having satisfied ourselves to the full, we proceeded to mend the brakes, with the help of some putty and one of Jones' boot-laces. It was with the keenest satisfaction that we found all going well again, and, as though to give us its blessing, out came the sun in all the glory of a September afternoon. We may dismiss the rest of the run in a few words: my "good little car" ran splendidly, and after a good tea in York, we started home in the best of spirits, and without further incident reached our home, amidst the plaudits of a large number of friends who had been invited by Jones' wife to see our return, at just one hour before midnight, having completed the sixty-eight miles in eighteen hours!

Yours, etc.,  
Northallerton, Yorkshire, J. E. SMITH,  
Oct. 3rd, 1899. Holder, Record Run, on  
North Road (of Northallerton).

### LADIES AND AUTOMOBILISM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In regard to your remark that "Lady Harberton will endeavour to convert lady motorists to rational dress," allow me to say that the Viscountess is known to be a level-headed woman, of good taste and of gentlewomanly bearing, and you do her an injustice if you imagine that by kindly permitting the use of her drawing-room for the preliminary meeting of the Ladies' Automobile Club she will in any way whatsoever abuse the opportunity by preaching the gospel of rational dress.

Nor, indeed, will any dress be tabooed, as you predict. Although I am an advocate of dress reform, I am not a faddist nor a fanatic. If a lady finds that she can drive a motor-vehicle skirted, by all means allow her to do so. I drove the Benz car in my ordinary attire, but I preferred my cycling costume for the motor-tricycle; still, if any lady rides the drop-frame tricycle and finds the skirt in no way dangerous, I presume she can, being in a free country, wear what she pleases.

Certainly allow "Worldling" to design a costume for lady motorists, provided he is capable. For my part I welcome any gentleman sufficiently interested in motoring to come to the rescue of lady motorists, and assist them in any and every way possible, whether it be to design and create motor-vehicles or costumes. Both are required.

Notwithstanding your criticism as to the "harmlessness" of our endeavour to start a Ladies' Automobile Club, in another sentence you state that "the matter is developing alarmingly"—how then can it be "harmless"? Maybe, your contributor will apply his wit and ingenuity to detect the wisdom of his remarks.

Mowbray House, Norfolk Street, Yours sincerely,  
Strand, London, W.C., N. G. BACON.  
October 2nd, 1899.

[If Miss Bacon will re-read our "Comment" she will see that the "harmlessness" referred to the Ladies' Club, and the "alarm" was occasioned by the prospect of extraordinary attire. While willing to allow Miss Bacon the last word in the correspondence, we shall be obliged, and so probably will many of our readers, if she will withhold her next letter until after the meeting at Viscountess Harberton's,

when we shall be able to learn the strength of the movement inaugurated by this persistent lady journalist, cyclist, motorist and clubist.—ED. M.-C. J.]

### THE DE DION MOTOR PATENTS IN ENGLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I wish to draw your attention to a little error in one of your paragraphs in the current issue of *The Motor-Car Journal*. No new company has been formed for the purpose of acquiring the patent rights of Messrs. De Dion & Bouton in England, as these rights belong and always have belonged to us. A company has recently been registered with a small capital for the purpose of acquiring the De Dion trading rights in England. This company will be under licence from us and will transact all business in connection with Messrs. De Dion & Bouton's English agency. I shall be glad if you will kindly mention this in your next issue.

40 Holborn Viaduct, Yours faithfully,  
London, E.C., THE BRITISH MOTOR CO., LTD.,  
October 2nd, 1899. CHAS. JARROTT,  
Secretary.

### SUGGESTED IMPROVEMENTS IN IMPULSE MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I beg to suggest that gas and oil engines would be improved if the explosion were divided into several small successive explosions. If the cylinder cover were recessed in the middle, and the piston centre elongated to fit into it, the gas on the compression-stroke would be divided into two parts, one part being compressed into the recess and imprisoned there by the piston. Several chambers could be formed in this way, and their contents released and fired successively as the piston moved out. If this idea is any good, and in your opinion worth patenting, you may do as you please with it, only don't forget

Pontypridd, Yours truly,  
October 2nd, 1899. "CRANKY."

### OVER THE WORST TWENTY MILES IN ENGLAND ON A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—No longer can I continue my strain of unbroken success as regards immunity from accidents to our car, for during the past week we have experienced a series of daily mishaps which have caused us endless worry and work, and, as if in verification of the old saying that "troubles never come singly," I have to relate a whole chapter of them. Just at the time, too, when I wanted the most leisure to give you an account of our doings I have the least, and shall therefore, I fear, only very imperfectly describe our "ups and downs," for we have climbed and descended more awkward hills in the last five days than in the preceding five weeks.

Well, to come to details: The route was from Ingleton, Yorkshire to Milnthorpe, Westmoreland, thence Newton-in-Cartmel, Lancashire, then to Tebay, Westmoreland, and on to Shap, over the dreaded fell that is feared by all travellers whether by rail or road. Incident No. 1 occurred just as we started from Ingleton, for at the bottom of the first hill we found something had gone wrong. A minute examination was necessary to discover what it was, and at last we found that a pin inside the governor controlling the cam on the governor-shaft had snapped. Mr. Lax was sent to the local cycle shop at Ingleton; a new pin was made, duly inserted, and off we went to Milnthorpe, arriving about three hours later than we desired. The next morning, on the way to Newton-in-Cartmel, by the action of the car it was painfully evident that something else was the matter, and we fancied that the spring at the back of the main shaft in connection with the friction clutch had lost its power, so faced the inevitable: took off the gear case, found the

spring quite right, and then discovered that the rod in connection with the variable speed-gear had worked loose. It was duly tightened, and off we went once more. But our troubles for the day were not yet over. As we were climbing a very steep hill over a mile long, known as Lindale Brow, there were distinct indications that we were going to stop, and very shortly stop we did—about three parts of the way up the hill. By the heated cylinder we soon ascertained why, and found that the water was not circulating. Mr. Sinclair was soon at the pump, and on examination found that the indiarubber rings had perished, and one of them had actually come off the screw. We thought for sure we were stuck at last, but Sinclair would not give in, and temporarily placed a thin iron washer over the worst ring, replaced it, and we determined to make another attempt. A few young farmers were just passing to attend a harvest festival at Lindale, and at my request willingly gave us a push to the top of the hill, and from there we managed to reach Newton five hours behind time. I at once wired for new rings, which, owing to the out-of-the-way place we were at, did not arrive, and so we had to start for Tebay, a journey of over thirty miles, and one which I never shall forget. We got through Kendal—sixteen miles—all right, and then struck the worst hills yet seen by us, and in the middle of one our car again stopped. We were practically exhausted, and inclined to despair, but it being market day at Kendal several farmers' carts were returning home, and after asking six or seven for assistance, at last a Mr. Prickatt, who lives near Grayrigg, agreed to bring a couple of horses and chains and pull us up the hills and see us to Tebay. So on we went in this fashion up hill, doing the flat and down grade work ourselves, until we reached the famous Docker Brow.

I cannot possibly describe the descent of this hill in such a way as to convey what it really was. The nearest thing I can compare with it is shooting the chutes at Earl's Court, only that it was a great deal longer trip. In the centre was a farmer's cart driven by a woman who was on the wrong side, and we had to pass her round a bend with the car running away. I thought it was all up, and ejaculated a fervent prayer for safety. With a breath of relief and a feeling of great thankfulness, however, we soon found ourselves safe at the bottom. Another examination was then necessary, and after that we knew our motor could do no more, for the result of all the extra strain had bent the pins on the inner part of the friction clutch, and so kept the clutch out of gear. For six weary miles we had to be towed, and, with many happenings that I have not time to relate, reached Tebay at 8.5 p.m. Our show was announced to commence at eight and some 300 persons were around the doors and gave us a hearty cheer as we pulled up in front of the hall. Many willing hands enabled us to get the car right into the Market Hall. A quick unpack, a quick fit up, and the audience seated, the first picture of our motor-car was on the screen at 8.35—surely a record in entertainment work. We were compelled to spend the whole of Sunday to put right the car, and Mr. Sinclair was on his back underneath it nearly all the day. The bent pins referred to had snapped, and had to be drilled out and fresh ones made at the N.E.R. fitting shop at Tebay and put in their places. This was done by the kindness of the railway people. But we could not get our car together again in time to go to Ravenstonedale on Monday, so enlisted the services of the Postmaster of Tebay (Mr. Bell), who drove us there. The people there were greatly annoyed that we had not brought the motor-car which they were so anxious to see, and as we had advertised bringing it we had a very poor house indeed.

On Tuesday at mid-day Mr. Sinclair had everything ready, and then in drenching rain we started for Shap. Although the car was going splendidly I was determined to be prepared for contingencies, and engaged a farmer, Mr. T. Wharton, to accompany us with a trace horse to help us if necessary over Shap Fell. We hardly required his assistance, but as he was there we used the horse over the stiffest part of the fell, and arrived at Shap drenched to the skin, having sat for

the last three miles in a pool of water that had dripped from our mackintosh capes, and by 4.30 p.m. were safely stabled at the King's Arms Hotel, where mine host, Mr. Gregory, gave voice to the words with which I have headed this letter, that we had come over "the worst twenty miles in England." The result of all this appears to me that with endurance, a knowledge of your engine, and not being too proud to yoke up a horse to your car occasionally, you can take a motor to any place in the country. The highest village in England, Nenthead, is on our route, but of this more anon.

Yours, etc.,

T. J. WEST,

Shap Wells,  
October 4th, 1899.

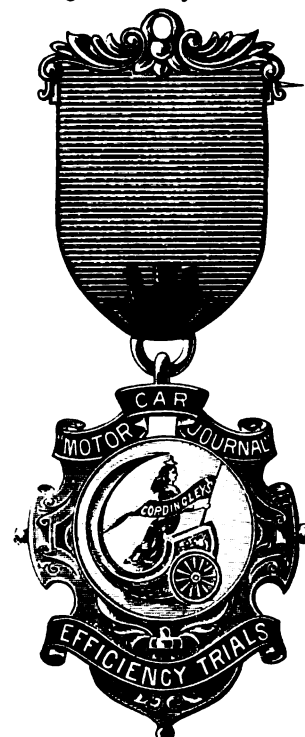
Manager of the Modern Marvel  
Co., Ltd. (of Edinburgh).

## THE RECENT MOTOR-CAR EXHIBITIONS.

WE are able to give herewith two illustrations of the gold medal which has just been issued to those firms which were fortunate enough to secure awards at the Automobile Club's Show at Richmond in June



last. The third illustration depicts the medal which is being prepared for the successful competitors in the "Commercial Efficiency" Trials organized by *The Motor-Car Journal* in



July. As will be seen, it takes the form of a clasp and pendant, the same design of pendant being adopted both for the gold and silver medals.

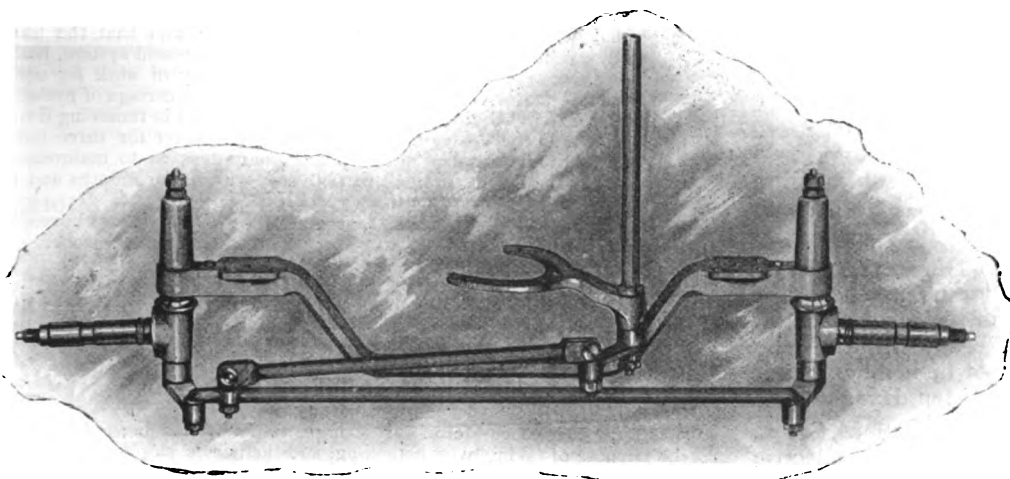
A SERVICE of motor-cars between Lincoln and Brigg is projected. Mr. F. Morriss, of King's Lynn, is the leading spirit of the new venture.

## AN IMPROVED STEERING GEAR FOR MOTOR-VEHICLES.



THE accompanying illustration represents the improved steering gear for motor cars which has lately been devised by Mr. Geo. Iden, manager of the Motor Manufacturing Company, Limited, and which is now being adopted on the vehicles of that Company. The features of the improved gear are (1) the fewness of the number of parts constituting the mechanism, and (2) the construction and arrangement of the parts in such a way that should any nuts, split pins, or washers by any means become loose, no danger would arise, as the gear would not break down or fail to act.

In the case of a motor-vehicle provided with a pair of steering wheels coupled and having the horizontal axle or shaft of each wheel carried on a vertical pin or axis, each of the latter is provided with a crank arm or lever extending horizontally therefrom. The cranks are coupled or connected by means of a stout, solid bar, each end of which is turned down at about right angles, the turned down ends being screw-threaded and adapted to pass through—so as to be free to turn in—the crank arm or lever on each steering wheel. Nuts and washers are screwed on the connecting rod underneath each crank arm or lever, the latter being thus securely coupled together by a single rod, which is generally termed the "coupling rod."



Towards one end of this coupling rod is pivoted thereto or connected by means of a link or knuckle joint or eyebolt one end of a rigid connecting rod which at its other end is similarly connected to a crank arm or lever, known as the "tiller crank," operated by the steering handle or "tiller." The shaft of this tiller crank is pivoted or journaled in a bearing mounted on a fixed part of the vehicle frame or otherwise suitably mounted, and the tiller itself is rigidly fixed to the tiller crank shaft, so that whatever movement is imparted by the steersman to the tiller will consequently be transmitted to the tiller-crank, which latter, through the medium of the connecting rod, will thereby operate the coupling rod, which in turn will simultaneously move the pair of steering wheels in the same direction, right or left.

It will be seen that the improved steering device is of a very simple character, and consists of but a very few parts.

It is considered that motor cycling in America would develop much more rapidly if the prices of motor-cycles were lower. The import tariff, it is considered, is too high. Carriages and motors imported into the United States are classified as "manufactures of metal," and the tax is 45 per cent. *ad valorem*. One of our transatlantic contemporaries considers that if the tax were reduced to a nominal figure no injury would be done to American manufacturers of automobiles, and that an impetus would be given to automobilism.

## THE COMPRESSION SPACE NECESSARY FOR PETROL MOTORS.\*



FOR determining the size of the compression space of a gas or petroleum-spirit engine a number of things have to be taken into consideration, and the best designed engine in this respect is in the end the best practical compromise between what ought to be done theoretically and what must be done mechanically. The theoretical considerations (*i.e.*, most power for the least consumption of fuel and, incidentally, the least size of cylinder) all point to the side of the smallest possible compression space. This, of course, entails the disadvantages due to a greater percentage of leakage at the enormous explosion pressures. But leakage past the piston and rings of an engine built according to the most advanced knowledge can be reduced almost to a negligible quantity. Fits of piston and rings to withstand satisfactorily pressures in excess of 400 lb. per square inch can, however, not be attained (on a commercial basis) on an ordinary lathe. Such work ought to be done on grinding machinery: the rings especially require such treatment after being cut in order to secure perfect contact all around the cylinder. As such work is a question of proper tools rather than extreme skill of labour we may dismiss the question of leakage at this point by the statement that a petroleum-spirit engine, if properly constructed and properly lubricated, will not waste any appreciable

amount of power in leakage at any pressure we would be able otherwise to employ. The compression of the petroleum-spirit vapour and air (or any gas) produces heat; we can therefore work with a compression up to the point where the heat produced is enough to light the mixture. With very weak mixtures (mixtures so weak in petrol that they cannot be exploded at all unless compressed) the compression of course can be carried to a higher point than if the ordinary "good running mixture," about 1 to 8 or 1 to 9, is used. Leaving out of consideration engines of the Diesel type and considering only the ordinary or Otto cycle engines, fitted with the usual means of

adjusting the mixture and with a fixed time of ignition, we cannot have a higher temperature of compression than about 700 degrees Fahrenheit without premature explosion, which corresponds to a pressure of about 220 lb. per square inch above the air, and at the moment of explosion to something in the neighbourhood of 1,000 lb. per square inch. The compression space in such an engine, if very fast running and provided with very large valves, would be about 13½ per cent. of the whole volume of the cylinder (including the compression space); in other words, 15.45 per cent. of the volume passed over by the piston. Such high compression is only practicable with dilute mixtures, and cylinders that are well cooled by free circulation of cold water. Perhaps the highest practical compression in unjacketed engines would be not far from 200 lb. per square inch, which entails a compression space of about 17½ per cent. of the piston displacement. Such an engine is easy to ignite, even with mixtures which will not work satisfactorily in most engines (which have much lower compression). The drawbacks, however, are that the pressure at explosion is very high—it may reach nearly 900 lb. per square inch. The net working pressure will, however, be higher too, but not in the same proportion. The chief drawbacks are the much greater weights of shaft, connecting rod, frame, and fly-wheel necessary, and, above all, the greater effort required to start the engine; for if the compression is

\*By A. M. Herring in *The Horseless Age*.

relieved beyond a certain limit the energy of the first explosion will not be sufficient to produce the succeeding compression and thus keep the engine going.

For practice the compression space for vehicle motors is often as large as one-half the stroke of the piston, and although this means the consumption of about double the petrol for the same power, and makes ignition more difficult and uncertain and the motor as a whole heavier than it might be, and entails greater necessity of cooling, it still has its advantages—it works satisfactorily (?) in cheaply built engines. Where minimum weight of the engine as a whole (including fly-wheel, etc.) is looked for, a compression space of one-third to one-fourth the volume passed through by the piston is about as small as should be used. This entails explosion pressures from 400 to possibly over 500 lb. per square inch.

THE Countess of Warwick asks, with reference to the proposed ladies' automobile club, "Why do women want to dissociate themselves from men in everything?"

A COMPANY has just been formed at Jersey City, N.J., with a capital of £20,000, to be known as the Mercantile Manufacturing Co., to manufacture motors, vehicles, etc.

THE latest bulletin states that the condition of M. Craninckx, the well-known Belgian chauffeur, has again become precarious, although the doctors still have every hope of saving his life.

THE inauguration of the service of motor-omnibuses between Kennington Gate and Victoria, S.W., mentioned in our last issue has been postponed, the final arrangements for running them not being yet completed.

IT is reported from America that the police of Hartford are to be supplied with automobiles for patrolling and ambulance work. The introduction of such a scheme into England would almost tempt one to join the force and become a "patrol" on a "petrol."

OUR Midland correspondent was fortunately wrongly informed last week regarding the condition of Breakwell, the driver of the motor-car which met with a serious accident at Edge Hill the other week, for on Wednesday we received a letter from Breakwell himself, stating that he is much better and hopes to be back in London in nine or ten days.

THE Columbia and Electric Vehicle Co., Hartford, Conn., who have been devoting most of their attention to electric vehicles for the past two years, have, it is reported, turned to petroleum-spirit motors again with renewed energy, and are experimenting with every known type of petrol motor both in the shop and on the road.

COMMENTING on the recent invasion of motor-cars in the town the *Dover Observer* remarks that compared with the first appearance of these motors the latter day style is positively beautiful; there is no appearance of a cart or 'bus cut off at the shafts, but the whole thing is graceful in its outlines and exceedingly comfortable in its internal economy.

The *World*, in commenting on the increasing popularity of motor-cars, remarks that—"It requires no gift of prophecy to foresee motor-meets in Hyde Park in the course of next season, and to predict the speedy advent of a time when proficiency in the steering of an automobile will be almost as much esteemed as skill in the 'tooling' of a four-in-hand."

A PRESS despatch from Fabyan House, N.H., states that "the first automobile to make the ascent of Mount Washington, 6,300 feet above sea level, arrived at the summit shortly before noon on the 31st ult. In the carriage were Mr. and Mrs. F. O. Stanley, of Newton, Mass. The climb up Mount Washington began at Pinkham Notch, where they spent the night. The distance of ten miles was covered in two hours and ten minutes. This time included delays in replenishing the water tank. Mr. Stanley had never been over the carriage road, which was opened this year, and he says that he could reduce the time to ninety minutes on another trial."

## MOTOR-VEHICLES FOR MUNICIPAL WORK.

THE following is a copy of a letter which has been addressed by the Surveyor (Mr. T. W. E. Higgins, A.M.I.C.E.), to the Vestry of the Parish of Chelsea:—

Surveyor's Department, Town Hall.

Re CARTAGE BY MEANS OF MOTOR-CARTS.

To the Vestry of Chelsea,

My Lord and Gentlemen,

The Vestry has from time to time had under consideration the question of carting dust by means of motor-vans, and I am still making enquiries in the matter. I think the reason why motor-vans were considered most suitable for the removal of dust was because the motor-vehicles which were being made were of large capacity, and therefore seemed adapted to carry material which was of considerable bulk but not of very great weight, but there is probably a greater saving to be accomplished by using motor-vehicles for carrying heavy materials. An ordinary dust van carries 3 cubic yards of house dust, and a motor dust van cannot conveniently carry more than 6 yards, but with heavier material the quantities carried by one-horse carts and motor-cars respectively show much more favourable results as regards the latter vehicles. A one-horse cart carries about 1½ cubic yards of sand or hogging, and about 1 ton 10 cwt. of granite; whereas a motor-van would easily carry 6 cubic yards of sand or hogging, and 4 tons of granite.

For a cart horse and driver, per day, we now pay 9s. 6d., and when at work, per load, 1s. per ton of granite, or 1s. 3d. per cubic yard of sand or hogging. Thus under the present system the cartage of 10 tons of granite and 10 cubic yards of hogging or sand costs £1 2s. 6d., or a week's cartage of such materials £6 15s.

This amount of cartage could be done by one motor-van, and the expenses of such a van are estimated by makers (according to the different types of vans), allowing for depreciation (15 per cent.) and for repairs, from £4 18s. 9d. to £5 12s. 6d. per week.

There is no doubt that we have sufficient work to keep one motor-van constantly employed on ordinary cartage, and that the use of such a vehicle would be less costly than the present system, besides being more cleanly. There would also be plenty of work for one or two more motor-vehicles, to be used ordinarily for cartage of materials, but when not required for that purpose to be used in removing dust.

I think the Vestry might issue advertisements for three motor-vehicles, to be supplied under proper guarantees as to maintenance, cost of working, etc., one to be delivered within four months and the other two within six months.

I should perhaps add that one of the Vestry's two horses has become so infirm that it can no longer be put to its usual work.

I am, my Lord and gentlemen,

Your obedient servant,

T. W. E. HIGGINS, A.M.I.C.E.,

September 26th, 1899.

Surveyor to the Vestry.

## MOTOR-CARS AT LEICESTER.

THE Leicester Motor-Car Company, Ltd., has been formed for the purpose of taking over, extending, and further developing the business of the Leicester Motor-Car Company, Ltd., which was established on April 20th of this year. Since the formation of that Company its business is said to have exceeded the expectations of the shareholders, and the new Company has been formed to provide additional capital for purchasing more cars and generally extending the business. In addition to acquiring more cars of the Daimler type, the directors propose purchasing cars propelled by steam, with a carrying capacity of from fourteen to sixteen passengers, equipped for both summer and winter traffic. The weekly cost per car is stated as having amounted to about £3 3s. per week, and the average weekly earnings of each car to £10, and the directors anticipate that with a larger number of cars a sufficient income will be earned to pay the shareholders substantial dividends. The Company will acquire the whole of the undertaking, property and plant of the first Company, including four specially-built cars, tools, duplicate parts of cars, oil tanks, pumps, oil shed, together with stock of oil, etc., as a going concern, for the sum of £2,500, the vendors taking the whole of the purchase money in fully paid-up shares. The share capital of the Company is £30,000 in £1 shares, of which the public have this week been asked to subscribe for 15,000 shares.

## MOTOR-CAR ACCIDENT.

WHAT might easily have culminated in a very serious accident happened about half-past seven on Friday night last to the large motor-car belonging to the Newport Pagnell Motor-Car Syndicate, and plying between that town and Olney Station. The car, with about half-a-dozen passengers, had just safely descended a hill about a mile outside Newport and was going at a fair speed, when a frightened horse pranced with its rider right in front of the car, which crashed into it with much force. The horse temporarily lost its equilibrium, but fortunately did not unseat its rider, and regaining its feet went off at a furious speed, nothing more being seen of it. The force of the blow knocked the steering apparatus out of the hands of the driver, and even before the brakes could be applied the car had crossed the grass at the side of the road, and its front wheels fell right into the ditch under the hedge, where it remained throbbing and

Plunging until the engines were stopped. The occupants, who included two ladies, were thrown to the front of the car, but luckily no one was hurt, and with assistance the car was drawn out of the ditch, it being found that the only damage done was the breaking of one or two spokes. The journey was resumed at a slower speed and Olney Station reached in safety, though somewhat behind time.—*South Buckinghamshire Standard*.

#### LICENCES FOR PETROLEUM-SPIRIT STORAGE.

At Southwark, on Tuesday, the Holborn Tyre Company, 86 Newington Causeway, were summoned before Mr. Paul Taylor, at the instance of the London County Council, for having in their possession at their premises, 22 Stamford Street, a quantity of petroleum without having a licence, as required by section 7 of the Petroleum Act, 1871. Mr. Colman, who appeared in support of the summons, said that an inspector visited the premises on July 25th, and found five gallons of petroleum-spirit in a cellar and three pints in a room where some men were at work. Mr. Horner Hargreaves, for the defence, said the Company admitted that they had the petroleum in their possession. They did not apply for the necessary licence because the premises were only temporarily occupied. The defendants were fined £7 and 18s. costs.

#### LIGHTS ON MOTOR-CARS.

At Thorpe-le-Soken Petty Sessions on Monday a heavy penalty was imposed in a case brought against William Fenton, motor-car driver, Clacton-on-Sea, for driving a motor-car without a lighted lamp as required by the Light Locomotives Act. It was stated that the Act provided that vehicles should possess a lamp showing not only a white light in the direction the vehicle was proceeding, but exhibit, in addition, a red light behind. The police evidence was that defendant, who was driving a motor-car at about twelve miles an hour, had a light attached to the front of the car, but not in such a way that a red light was shown behind. It was acknowledged that the bracket provided for fixing the lamp was broken, and could not be used. Superintendent Ackers mentioned that he had received several complaints, as the way in which defendant had the light fixed was very misleading. The magistrates imposed a fine of £5 and 9s. 6d. costs; failing distress, twenty-eight days.

#### SERIOUS FIRE AT MCKENZIE'S MOTOR-CAR WORKS.

ONE of the biggest fires the Metropolitan Brigade have had to deal with recently broke out in the early hours of Wednesday morning in Walnut Tree Walk, Lambeth, at the works of Messrs McKenzie, carriage and motor-car manufacturers. The alarm was raised about half-past two, and it is supposed that the fire must have been smouldering for some hours, as by the time the first engine arrived the flames had obtained a good hold of the building. The flames spread with such rapidity that by a little after three the whole place was like a furnace, and the entire district of Lambeth was illuminated. Eventually the services of a large section of the Fire Brigade were called into requisition, and Commander Wells and the principal officers were in attendance. It was soon seen that efforts to save the property itself were useless, and attention was directed to that adjoining. This proved a comparatively easy task, although the Walnut Tree Walk Board Schools, which face the west side of the works, were considerably scorched. Messrs. McKenzie's premises were completely burnt out. Extensive show rooms running around the top floors of the building, containing a large number of motor-cars and carriages, as also 60 electromotors, were destroyed, only four vehicles in various stages of completion in the works underneath being got out and subsequently removed for safety to the Southwark Bridge Road quarters of the London Salvage Corps. Mr. Frost-Smith's car, on which we had an eventful ride in July last, was, in Mr. McKenzie's own words, burnt to a cinder. About 150 hands are thrown out of employment for some months, and the actual damage is roughly placed at about £40,000. The loss, however, it is understood, is fully covered by insurance. The following is the official report which the chief officer presented to the London County Council in the course of Wednesday: "Called at 2.44 a.m. (Wednesday) to 27 Walnut Tree Walk, S.E., to the premises owned and tenanted by A. McKenzie, coach builder; cause of fire unknown; insurance unknown; damage, a range of buildings of three floors, covering an area of about 140 feet by 90 feet (used as manufactory, office and stores), and the contents nearly burnt out, and the roofs destroyed (adjoining and communicating); 27a, ditto, let out in tenements, back front scorched; Walnut Tree Walk ditto; the London School Board, side front scorched; 56 Fitzalan Street, ditto, G. Brittain, builder, a back building of one floor, about 40 feet by 20 feet (used as stores), roof damaged by breakage and the contents by water.

#### FINED FOR FURIOUS RIDING.

At Boston, on Wednesday, Mr. Frederick Rice Goodwin, of Newcastle-on-Tyne; Mr. J. W. Stocks, of Birmingham; Mr. S. F. Edge, of London; and Mr. Harvey Ducros, of Birmingham, were summoned for furious riding on the highway at Swineshead on September 21st. The case

against Mr. Ducros was withdrawn. The evidence against the other defendants showed they were riding at a rate of over twenty miles an hour in connection with Mr. Goodwin's attempt to beat the twenty-four hours road record. Mr. Goodwin was fined £5 and £2 14s. costs; Mr. Stocks was fined £5 and £1 7s. costs. The charge against Mr. Edge was dismissed for lack of identification.

FOR maliciously cutting the tire and air-tube of one of the wheels of a motor-tricycle, a Strathmiglo contractor has had to pay £3.

SIR FRANCIS AND LADY JEUNE left their Berkshire seat, Arlington Manor, near Newbury, on Thursday last week, on a motor-car tour.

THE Wilkins Automobile Co. is the title of a company which has just been formed at San Francisco, Cal., with a capital of £20,000, to make and sell automobiles.

MESSRS. GROSSE, BOUBAULT & Co. is the style of a new concern which has just been formed in Paris (97 Boulevard Montparnasse) to manufacture petrol motors and motor-tricycles, etc.

MM. CHARRON, GIRARDOT & VOIGT will shortly remove to new and considerably larger premises, situate at 45 Avenue de la Grande Armée, Paris, formerly the show rooms of the Singer Company.

JOSEPH APPLEBY, LTD., of the Castle Chain Works, Aston, Birmingham, are devoting attention to the manufacture of driving chains for motor-vehicles, their first production in this direction being roller chains of 1 in. and 1½ in. pitch.

THE Anglo-American Motor-Car Mfg. Co., of Halifax, is at present engaged in removing to new works at Hull Road, York. As soon as they are settled down in their new quarters they promise to send us particulars and illustrations of their new automobile vehicles.

WE learn that Messrs. Clarkson & Capel, of the Clarkson & Capel Steam Car Syndicate, Ltd., London, S.E., left for the United States on Wednesday, the 4th inst., per the "Oceanic." Their visit to America is a business one in connection with their steam motor-vehicles.

WITH reference to Houpiéd's magneto-electric ignition device, illustrated and described in our issue of August 25th last, we learn that the Automobile Association, Ltd., of Prince's Road, Holland Park Avenue, London, W., hold the sole agency for the device in this country.

MESSRS. CHESNEY, DE FALLETANS AND Co. is the style of a new firm which has just been formed at Dijon (21 Boulevard Carnot) with a capital of £4,750 to manufacture and deal in automobiles. We hope to illustrate the vehicles of this new concern in an early issue.

THE Chief of the Fire Department of Baltimore, U.S.A., is reported to be making a thorough study of the automobile with the object in view of using it in the fire brigade service. If he is satisfied with the result of his investigations he will recommend the purchase of one or more automobiles for the Department.

AT a meeting at Portland, Me., recently, of the stockholders of the Keating Wheel Co., of Middletown, Conn., it was unanimously voted to increase the capital to 5,000,000 dols. (£1,000,000), and to change the name to the Keating Wheel and Automobile Co. The present capital is 250,000 dols. (£50,000).

THE Dunlop Pneumatic Tyre Co., Ltd., has sent us a letter in which they point out that all the motor-cycle tires manufactured on the Continent, and which are now being imported into this country, are infringements of patents the property of their Company, and that all importers or users of these tires render themselves liable to legal proceedings. They state that they shall have no other option than to take proceedings against any person engaging in the importation of the tires referred to.



## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**QUADRICYCLE.**—2½-h.p. De Dion Motor, two speed gear; mounts any hill. Any one requiring latest Paris type Quadricycle should inspect this. Write in first instance to Silverton Lodge, Dagmar Road, South Norwood, S.E.

**TO MOTOR MANUFACTURERS.**—The Civil Service Cycle Agency, Ltd., having extensive Show Room Accommodation at 292 High Holborn, London, W.C., is prepared to take up Agencies for Light Motor-Cycles. Address with terms as above.

**SPACIOUS PREMISES** to LET or SELL cheap; lately carriage builders to Royalty; main London road; very suitable for motor-car factory.—Write Clemetson, Ashford.

**PARISIENNE VICTORIA COMBINATION.**—New tires; in perfect working order; £85 or nearest offer.—Bickford, Wick Lodge, Brighton.

**TO LADIES.**—Beeston drop-frame Motor-Tricycle; 66 m.m.; beautiful runner; £50; trial invited.—1 Elm Tree Road, St. John's Wood.

**TWO MOTOR DELIVERY VANS**, in good condition; can be altered into wagonettes; one £70 and one £125.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**MOTOR-QUADRICYCLE**, interchangeable to tricycle, by De Dion and Bouton, very little used, exceptional bargain, in grand running order; price £67 10s.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**DAIMLER MOTOR-WAGONETTE**, 5½ h.p., grand carriage, in perfect condition, new tires, repainted and upholstered, to carry four or six, free trial to buyers; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**DAIMLER MOTOR-WAGONETTE**, 5½ h.p., to carry eight passengers besides driver; geared low for hill climbing, suitable for passenger service, in perfect running order, hardly been used; price £265.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**BENZ INTERNATIONAL**, to carry three; beautifully upholstered, very powerful, all latest improvements, in grand order; price £120.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**DE DION TRICYCLES** (two).—1½ h.p.; electric ignition; in first-class order; £35. Also Werner Bicycle, in running order, £20.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**MORS CAR** to be Sold.—Very fast; splendid condition; 8 h.p.; to carry six persons.—Apply Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**WELLINGTON'S "MOTOR-CAR REGISTER AND ADVERTISER"** posted free to any address; send post card for copy to Frank F. Wellington, Proprietor, 36 St. George's Square, Regent's Park, N.W.

**COVENTRY MOTETTE** for Sale, in splendid working order. New 3½ cylinder. What offers?—Grose, Limited, Northampton.

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# 1900

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To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, OCTOBER 13th, 1899.

[No. 32.]

Published Weekly by CORDINGLEY & CO., 39 & 40 Shoe Lane, London, E.C.

## COMMENTS.

LAST week we invited information as to the advisability or otherwise of an English gentleman acquainted with engineering seeking employment in a French motor-car works in the position of an apprentice paying a premium as in English works. In response we have received several letters from gentlemen intimately acquainted with the conditions of French motor-car works, and they are unanimous in the view that our correspondent will not be doing a wise thing in becoming an apprentice at any of the French works. The idea prevalent in many of the French engineering establishments is that an apprentice should be given plenty to do, and after the term of apprenticeship is over, unless he has proved himself a very smart man, they take no further interest in him.

At the same time it would probably be extremely difficult for an Englishman to obtain such a position in a French motor-car works, as the French firms are not at all ready to instruct English or foreign persons in the construction of motor-cars, etc. All who have written on the subject conclude with the pertinent question, "Why doesn't your correspondent try some of the English houses? He would obtain very much more satisfaction, and quite as much knowledge."

### Automobiles for Municipal Work.

In our last issue we printed at length a report presented by Mr. W. H. E. Higgins, the Surveyor to the Chelsea Vestry, recommending the Vestry to issue advertisements for three motor-vehicles to be supplied under proper guarantees as to maintenance, cost of working, etc. The matter came up for consideration at a meeting of the Vestry on Tuesday evening, when, we are glad to be able to state, the Surveyor's recommendation was agreed to. The advertisements for the three vehicles will therefore make their appearance in due course.

### "Emancipation Day."—A Run to Brighton.

THE Motor-Car Club were the first to celebrate "Emancipation Day," and they have consistently kept in mind this most notable date in the motor-car movement. This year, instead of a run to Sheen House as was the case last year—a run that hardly served to impress the general public with so good an idea of the modern reliability of motor-cars as compared to a longer run—they will repeat their original plan of journeying to Brighton. The meet will take place outside the Hotel Metropole, on Monday morning, November 13th. The route selected to Brighton will be a repetition of the first run of the Club, viz.: via Croydon, Merstham, Gatton Corner and Reigate—where luncheon will be partaken of at the "White Hart"—and then along the usual road to Crawley and on to Brighton via

Hixstead. In the evening a banquet will be served at the Hotel Metropole, Brighton, to which the Club cordially invite all owners of cars who take part in the run, whether members or not. Those who intend to participate are requested to communicate as early as possible to the Hon. Sec. of the Motor-Car Club, 40 Holborn Viaduct, London, E.C.

### Keep to the Road.

THE lot of the automobilist would not be a happy one if such magistrates as those at Aberystwyth and Stonehaven were as common as horses. Of the eccentricities of the former gentlemen Mr. Hollier has told in our columns, and now we learn that the "Great Unpaid" sitting in solemn state at Stonehaven have fined a motor-car driver of Aberdeen 10s., with £1 2s. expenses, for driving his motor-car on the footpath of the road between Aberdeen and Stonehaven. It appears that there was on the roadway an excitable sort of horse whose bad temper might easily have placed him beyond the control of the driver. To prevent any likelihood of accident to the driver of the animal, and probably a desperate kick at his car, the motor man went to the sidewalk, choosing the lesser, but in the end the most expensive of two evils. Really, what are automobilists to do?

### "Murderous Motor-Cars."

VARIED are the headings under which the weekly newspapers startle their readers with highly-coloured descriptions of alleged motor-car catastrophes, but the palm for sensationalism must be awarded to the *Essex County Chronicle*, which under the heading we have reproduced has some rambling remarks on the subject of automobilism, concluding, after referring to "stenches" and "dangerous nuisances," with the statement that "some of them (the motor-cars) are, in fact, little less than instruments of torture." Such language is too absurd—even for the average penny-a-liner—and we would suggest to the editor of our contemporary that he should watch his young men's "copy," and use the blue pencil with more freedom.

### The Brake Horse-Power of Motor-Cars.

MR. JOHN S. V. BICKFORD, of Camborne, Cornwall, makes the following suggestion with regard to testing the brake horse-power of motor-cars in the last issue of the *Engineer*, adding that if it gives accurate results it would have the advantage of being very easy to carry out: "Let a wooden platform be laid in the examination yard near a strong wall or post with a ring-bolt in it sufficiently strong to stand the utmost pull of the car to be tested. The platform must be quite level, and means should be provided to wet it to keep it from burning. Place the car on the platform and anchor it to the ring-bolt. Now start the engines, and either jack up the weight off the driving wheels or add weight to them till they slip at the speed corresponding to the speed at which it is desired to test the horse-power of the car. I take it that the pull on the ring-bolt measured by suitable means, and

multiplied by the peripheral speed of the driving wheels, will give the power given out at the rims. The platform or brake, being of wood, would not wear the tires, and could be prevented from burning by water."

#### Cambridge City Trams.

CAMBRIDGE is considering the adoption of electric traction in connection with its tramways, which the Council have been empowered to purchase. A rather keen debate took place on the report of a special committee recommending this course, and Mr. Alderman Redfern offered strong opposition to the report, pointing out that the motor-omnibuses were meeting with great success in London, and sooner or later they would probably be tried and adopted in Cambridge. Eventually the tram lines would be worth only the price of old iron should the motor-buses be adopted. He moved that the matter be deferred for six months. Unfortunately, Mr. Redfern could not point to any long period of experience in London, but he and other public men in the provinces will do well, as in this case, to "keep their eye on London," for in motor-omnibuses there is profit for the future. Ultimately it was decided to go on with the tramway scheme; motor-omnibuses will have to wait.

#### Automobiles and Electioneering.

RECOGNISING that automobiles are still a novelty, the managers of the political parties in the United States have, naturally, sought to enlist their aid in advertising the candidates. The agent of the Republican candidate for the Lieutenant-Governorship of Massachusetts contracted with the New England Electric Vehicle Co., of Boston, for a



MADAME SARAH GRAND AND MRS. BAZALGETTE ON A BENZ CAR.

certain number of vehicles for the transport of electors, and "for the proper, legitimate, and modest display from these automobiles of cards and signs calculated to attract the attention of and to notify the public that Republican caucuses are being held on that day, and calculated to attract the attention of Republican voters who shall be favourable to the nomination of the said Bates (the candidate) as aforesaid to go to the polls and vote." Unfortunately the Company repented of the contract, with the result that they are being proceeded against by the other parties. It is hardly a characteristic of Americans to refuse business, and doubtless much surprise will be felt by other business houses in Boston at the action of the Electric Vehicle Company. Probably at the next General Election in the Old Country the employment of motor-vehicles will be as common as tradesmen's traps. So far they have not been greatly tried;

in a Norfolk election both candidates had motor-cars, and one was ordered by Mr. Winston Churchill in his Oldham contest, but it did not reach Lancashire in time to be of service.

#### The Storage of Motor-Car Spirit.

At the last meeting of the Brighton Town Council the General Purposes Committee presented a report from Mr. H. Webster with respect to the use of petroleum-spirit for motor-cars. Mr. Webster stated that he had visited all those places in the borough known to him where motor-car spirit was being kept for use in connection with motor-cars, and in every case found that such petrol was not being kept according to the Secretary of State's regulations. The excuse in every instance given for this irregularity was that firms thought they were exempt from having a licence for petrol, but he pointed out to them that it was only in such cases where the regulations of the Secretary of State were complied with that a licence was not required, and produced a copy of the regulations and instructed those in charge as to what was required of them. He therefore proposed visiting these places again with the object of seeing what had been done in the matter, and would then report further to the Committee. The report was ordered to be entered on the minutes.

#### The Tare Limit of Heavy Motor-Vehicles.

IN his paper on steam vehicles at the recent British Association meeting, Mr. J. I. Thornycroft drew particular attention to the drawback attending the limiting of the tare weight of heavy motor-vehicles to three tons, considering it to be "the one and only obstacle now remaining in the way of the complete solution of the problem of steam on common roads." We now learn that a special conference between members of the Automobile Club Committee, the Council of the Liverpool Branch of the Club, and the representatives of firms engaged in the manufacture of heavy automobile vehicles will be held at the Club on Wednesday, the 15th prox., at 12.30 p.m., the subject of the conference being the advisability of attempting the introduction of a Bill to raise the tare limit.

#### A New Motor Starting Device.

MESSRS. STRADLING & PLENTY, of Newbury, who are agents for the well-known Benz cars in that district, have, we learn, recently introduced a slight improvement in these vehicles whereby the motor may be started without it being necessary for the driver to dismount from his seat. Briefly, the new starting device consists of a special pulley fixed to the fly-wheel with an automatically-acting ratchet, which engages when the wheel is pulled by the wire cord extending to the driver's seat, and is taken out of gear when the engine starts.

#### Accidents and Automobiles.

WE would suggest to those who direct motor-car services for public convenience that they should keep a record of the incidents attending their running, and carefully note all accidents and mishaps. The publication of such results would, we are confident, re-assure those timid men who write to the papers against motor-cars. The Edinburgh Company, for instance, has run over 20,000 miles during the past summer without loss of life or injury to limbs or nerves of passengers. Two accidents to persons in charge of horse-driven vehicles happened, but in each case the drivers of the motor-vehicles were blameless, the cars being at a standstill in both instances. It is gratifying to know that a good type of driver is becoming available for these services; and should any proprietors of cars take our hint we shall be glad to have reports of their observations from time to time.

**Speed on Highways.**

MR. W. T. ELTRINGHAM, of The Mount, Shrewsbury, boldly advocates a lessening of the restrictions on the speed of motor-cars in this country, so that our makers may be encouraged to face the competitors of France and

Germany with racing-cars. In a letter to a Birmingham paper he shows how local authorities are harassing the



THE HON. J. SCOTT-MONTAGU, M.P., ON HIS DAIMLER 12-H.P. MOTOR-CAR.

industry by the imposition of unnecessary restrictions. We are sorry to dampen the ardour of an enthusiast for automobilism, but he must not forget that these restrictions are a result of the breaking of the law in several places. Records of road races are well calculated to alarm aldermen and others who have not the springiness of youth, and if Mr. Eltringham's suggestion as to high speeds reaches the ears of some of them things will go even harder with the automobilists. The average Briton is differently constituted to the Frenchman, and he wants to see a practical car for practical purposes rather than a high-flyer that would be notoriously out of place operating, say, along Cheapside or the Strand.

**An American Authority on the Prospects of Automobiles.**

ON the occasion of a recent visit to Washington, Colonel Pope, the head of the concern manufacturing the "Columbia" electrical vehicles, is reported to have stated, in the course of an interview: "The automobile is the vehicle of the twentieth century. It is certain to make the horse a scarce animal in the big cities. Ten years from now I venture to predict there will be vastly more conveyances of the self-propelling order seen on the streets of Washington than those drawn by horses. Just now electricity has the call in America as a motive power, but it is still in the era of experiment, and no settled opinion can be given as to what force will be ultimately regarded as the best. As yet the cost is too great for the automobile to become popularised, but the high prices of to-day cannot be maintained permanently."

**In "Vanity Fair."**

*Vanity Fair's* cartoon this week is entitled "Automobile," and depicts the Comte de Dion on one of his motor-tricycles. "Jehu Junior" thus refers to the well-known French automobilist:

"Once he was a man of joyous company and dissipation; now he has the honour of being a chief man of the world of automobilisation, which is the newest sport in Paris. He is therefore vice-president of the Automobile Club; and, in association with M. Bouton, the

engineer, he is at the head of the greatest motor-cycle works in France. His position and his relations have done much for the new sport; but his credit is that, having spent his patrimony, he has shown himself able to tackle industry with more than a Frenchman's pluck. He is a good, cheerful fellow, who is generally liked."

**In the West Indies.**

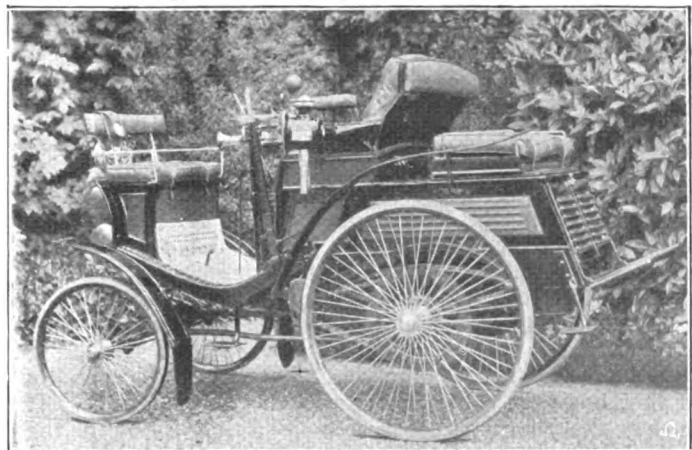
AN excellent little guide to their tours in the West Indies has been issued by the Royal Mail Steam Packet Co., and comes to us through Messrs. Street & Co., from which we learn that a motor-car company has been established at Martinique, and will soon place cars on the road between St. Pierre and Red Cliff, a distance of four miles, occupying the coaches  $1\frac{1}{4}$  hours on the journey, at a charge of 3 francs each passenger. The fare by motor-car is to be 60 centimes, and the journey will be done in half an hour.

**Disorder!**

"THE destructive fire at Mackenzie's carriage and motor-car factory at Lambeth is likely to throw the motor industry into great disorder," writes a gentleman on the staff of our contemporary, the *Financial News*. Probably he thinks that is so, and doubtless has no intention of giving inaccurate information, but we are afraid the statement savours of that frequent desire to decry motor-cars which is a strong point in the programme of the *Financial News*. Still, the industry will survive the opposition of such a journal. At the same time, while smiling at the suggestion that a fire in one motor-car works will dislocate the whole industry, we must not be understood to minimise the loss sustained by Messrs. Mackenzie, whose works were of considerable size and capacity.

**A Day's Run from Sheringham to Blackheath.**

MR. FRED HORNE, of "Chaworth," Blackheath, sends us the following brief account of his recent run from Sheringham to Blackheath, *via* Cromer, Norwich, Thetford, Bishop's Stortford, and Woolwich, with a view of demonstrating the capabilities of a simple motor, such as the Benz, in the hands of a novice: "We left," states Mr. Horne, "Sheringham on our Benz Ideal car at 7.15 a.m. and arrived at Blackheath at 9.45 the same evening (distance, 140 miles), and had a most enjoyable run without any incident

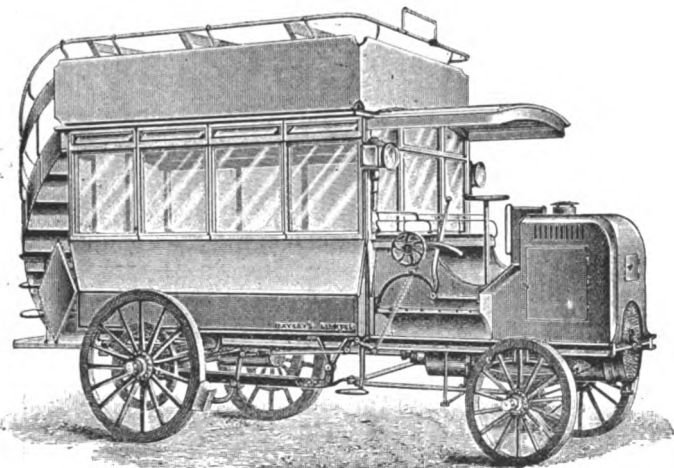


whatever. The roads were very heavy, and the wind strong and dead against us, but the car ran magnificently. When I bought a motor-car eighteen months ago I was entirely ignorant of an engine of any description, but in a month I was quite at home with it, and find motoring the most fascinating sport I have ever taken up. I have driven over 7,000 miles,

and have only once been delayed on the road. I am sending you a photo of my car, which has been slightly altered by Messrs. Mulliner, of Brook Street, W., with excellent results."

#### London's Motor-Omnibus Service.

AFTER some delay the motor-omnibus service in London has been duly inaugurated. It is true that the start is on a very small scale—at present only two vehicles are employed, these running on alternate days—but the Motor Traction Co., Limited, prefer to make sure, if slow, progress, rather than put a large number of 'buses in operation ere the public (and also the horses of the horse-drawn vehicles) have become accustomed to the automobiles. The route is from Kennington Park, S.E., to Victoria *via* Kennington Road and Westminster Bridge, the fare for the whole journey being 2d., with intermediate 1d. stages. The service was inaugurated on Saturday afternoon last. One 'bus has been running daily since, and, so far, we are glad to say, without hitch of any kind. On Wednesday morning, in the fog, we formed one of a small crowd of persons awaiting the "motor" at Kennington Gate, which, on its arrival, filled up so rapidly that we were forced to take an inside seat. We had wished to ride outside, so as to be better able to notice the effect of the motor-'bus on the horses and drivers of the old style omnibuses and trams. The tram horses appeared to take not the slightest notice of the new vehicle, but a few of the 'bus horses were not so quietly disposed, and the drivers of these had their work well cut out to hold them in. When the 'bus was in motion, we, as an inside passenger, felt no more noise than is experienced in ordinary horse-drawn 'buses, it being only when the vehicle was brought to a stop that the beat of the motor was heard and a slight vibration felt. We were particularly interested in



watching the manœuvring of the 'bus when the conductor rang the gong to stop and start to allow passengers to ascend and descend. This was accomplished several times in the course of our ride with the greatest ease, and a nasty block in the traffic in Westminster Bridge Road was negotiated in a manner which should be calculated to give the public a good impression of the motor-omnibus. In fact, it would seem that this has already been achieved, for we were much struck with the calm way in which women folk with babies in arms, on their way to St. Thomas' Hospital, signalled for the 'bus to stop, and took their seats as coolly as if they had been riding in motor-'buses all their lives. It is not necessary for us to give a lengthy description of the 'bus at this time, as it is familiar to most of our readers, and was, in fact, exhibited by Messrs. Bayley's, Ltd., Newington Causeway, S.E., at the Exhibition at the Agricultural Hall in July last. We may mention, however, that it has accommodation for twelve inside and fourteen outside passengers, and that it is propelled by a four-cylinder Daimler motor of 12 h.p.

#### JOTTINGS BY A WORLDLING.



I HAVE a book in my library which has always afforded me much amusement. Published in '27, with the lugubrious title of "Death's Doings," it consists of a series of badly written "original compositions in verse and prose" in illustration of thirty execrable copper-plate conceptions of Death, "At the Feast" and everywhere else that he is least wanted. One of these,

"Death and the Gay Charioteer," deals with the fate of a youth—"the laughter-loving Cytheron"—who took a singularly unattractive lady, with arms out of drawing, for a drive in a sort of *sitz-bad* on wheels, urging her with the fiery words:

"Ah! this is life, happiness, splendour, and glee;  
Mount, mount, my sweet damsel, and journey with me!"

The expedition was an utter failure, for an imperfectly constructed skeleton who had been hanging about the back of the picture suddenly pulled off one of the wheels, to the obvious delight of the poet, who sings in triumph:

"He takes the wheel from thy splendid car,  
And hurls thee prostrate on the plain!"

How like to this petty rhymester is the London public I learned to my own discomfort the other day. When in the North End Road—always fatal to me—flames suddenly burst from an electric car I was driving. All the hobbledoys in West Kensington were round the car in less time than it takes to write of it, laughing and jeering, but not offering a little of that help we so much needed owing to the fact that, as it was Sunday, not a shop was open and not a drop of water to be had. "Not a shop" is wrong, for I discovered at no great distance one of those funny little *boutiques* where they sell chocolates and bootlaces and papers and candy—door open, but no one there. The tutelary god of the chauffeur, however, turned my eyes on a large tin of milk on the counter. I stole it, and soon our fire was out and the car on its way again, followed by the blessings of an old lady, who hoped "as 'ow we'd want milk hev'ry day."

CHORUS (*leg.*): "What, ho! She bumps!"—a cryptic saying, which is especially annoying on another occasion—when, pedal as you will, you cannot get a spark.

A FEW years ago, French women, lead by the Duchesse d'Uzès and other *grandes dames*, took to "bloomers" for cycling in the Bois. English women did not follow their example, and there was a boom in cycling skirts. Now Fashion says to the charming inhabitants of the Champs Elysées and the Avenue du Bois that skirts alone are possible, and the other garments are left to the *gamin* patronesses of the Châlet du Cycle, whose attractive impertinence it suits. A divided skirt is worn on motor-tricycles. *Quæ quum ista sint*, as the Eton Latin grammar has it, I trust that the Chauffeuses' Club may come into existence on an irrational basis, and that Lady Harberton—why will Miss Bacon insist on calling her "the Viscountess"?—will not expect her members to hark back to what will soon be a fashion as extinct as that of the simple woad.

As for the designing of motor-car dresses, I am not a Mrs. Aria or I should be glad to help: but I can tell prospective "chaffeuses"—there is no better word—that many women I know swear by Redfern of the Rue de Rivoli, and say that he and Fred have alone studied the new question thoroughly. The hat is the great difficulty.



# The Underberg-Petroleum-Spirit Motor-Voiturette.

(For description see page 507.)

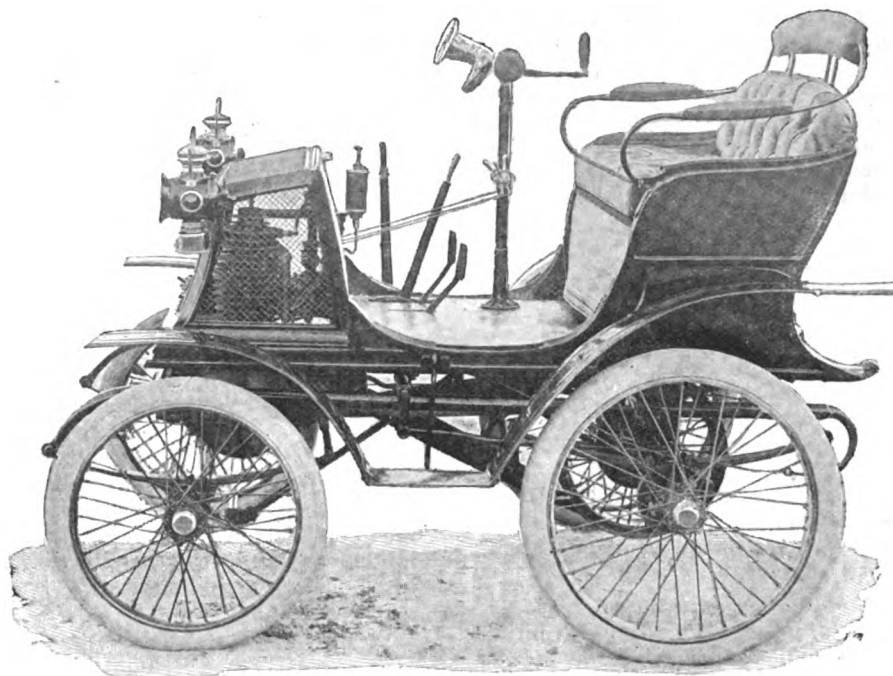


FIG. 1. GENERAL VIEW

I NEVER went to a *malinée*, but I understand the hat controversy since I bought a motor-quadricycle.

CHARLES V. drove horseless carriages. Albert Durer designed them, and Mother Shipton prophesied of them.

"Carriages without horses shall go.

The world then to an end shall come  
In eighteen hundred and eighty-one."

This was putting the cart before the horse with a vengeance.

THE first time I rode on a motor-car was many years ago. I was a student at the University of Freiburg in the Black Forest. One morning coming back from an early *mensur* a friend of mine in the Renanen corps drew my attention to a large crowd in the Holzmarkt Platz round an automobile stopped for some small repair. I had never seen one before, and with the nascent enthusiasm of the chauffeur I persuaded the driver—with a few marks—to drive me about a mile along the river Dreisam. Our progress was slow, noisy, and bumpy. We had to stop to let the carriage of the Hereditary Grand Duke pass by, when, doubtless nervous of her grimy self before such splendour, the car refused to budge till the next day. Then with many a cheery "*Auf Wiedersehen*" she crawled back to Daimler's works in Karlsruhe, whence she had come.

THE *Age of Steel* recognises that "in a few years the manufacture of the automobile will represent one of the important industries of the United States."

THE motor-cycle race which, as mentioned in our last issue, should have taken place at St. Albans yesterday afternoon between Mr. C. Jarrott and Mr. C. G. Wridgway on the one side and Mr. F. Cooper and Mr. Marriott on the other, was, we learn, just as we go to press, unavoidably postponed owing to something going wrong with the latter's machine.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### Letter Collection in Paris.

THE experiment of effecting the collection of letters by means of automobiles to which I referred last week is now in course of progress, and so far capital results have been obtained. It is in the 12th arrondissement that the work is proceeding, and an average gain of forty-five minutes on the time of the pedestrian postmen has been made.

### A Challenge.

THE three famous chauffeurs, MM. Levegh, Antony, and Broc, who have been so successful with their 16-h.p. Mors cars this season, have just issued a truly sporting challenge, in which they express their willingness to contest a match over the Paris-Bordeaux route with any three other automobilists now racing. This challenge is open for two months, and the challengers are willing to race merely for the honour, or for such a stake as may be agreeable to the acceptors.

### The Heavy Motor-Vehicle Trials.

THIS competition, promoted by the Automobile Club of France under the title of "*Le Concours des Poids Lourds*," commenced at Versailles on the 5th inst., and terminated on Wednesday last. As was only to be expected, the general public showed but little interest in the trials, and the daily attendances consisted almost entirely of persons interested in the automobile industry. Of the original entries only seven were present at the start, and several of these bore the appearance of having been hastily completed for the contest; indeed, in one or two instances it was the vehicle's

initial trip. The competitors were: 1, Krieger delivery van; 2, Jenatz delivery van; 3, De Dion steam omnibus, 30 h.p.; 5, De Dion steam lorry, 25 h.p.; 6, De Dion steam tractor, 50 h.p.; 7, Panhard omnibus; 9, Dietrich lorry. Nos. 1 and 2 are exactly similar to the vehicles respectively employed by the two great Paris establishments, "Bon Marché" and "Le Louvre," and are therefore well known both to all residents of Paris. No. 3 is a type almost equally well known, and has accommodation for twenty passengers. The two types as represented by Nos. 5 and 6 were competitors in the trials of 1898, and Messrs. Panhard and Levassor ran a similar type of car to their present representative (No. 7) in the competitions of 1897 and 1898. The type No. 9 was also represented in last year's trials, and is destined for use in the Soudan. I hope to send you details of these most interesting trials next week.

#### Motor-Cycle Races at Madrid.

ON Sunday next, on the Campos Eliseos track, at Madrid, there will be contested the first motor-cycle race yet held in Spain, and valuable prizes are offered.

#### Automobile Service at Brunswick.

IN common with so many of the Continental towns, Brunswick, Germany, is to have an automobile transport service. The first vehicle will probably commence operations about the 15th instant.

#### Automobile Exhibition at Lyons.

IT is proposed to hold an exhibition of automobiles and cycles at Lyons towards the end of November. Full particulars will be announced in due course.

#### The Automobile Club of France.

At a recent meeting the Committee of the Automobile Club of France decided to offer a bronze medal to M. Forestier as an acknowledgment of his work in organizing the various competitions promoted by the Club, and a medal and a diploma were also awarded to M. Georges Prade, of the *Vélo*, as a souvenir of the Paris-Ostend race. At the same meeting it was resolved to charge all new members joining the Club after January 1st, 1900, an entrance fee of 200 francs. I may mention that the present annual subscription is 200 francs, and that the number of members on the books is 1,934. The Committee will endeavour to obtain a part of the Bois de Boulogne on which to hold next year's International Exhibition of Automobiles, so probably manufacturers will have an opportunity of showing their vehicles in motion.

#### The Count de Dion.

IT is rumoured that at the next election the Count de Dion will stand as a candidate for the representation of the canton of Carquefou in the general council of the department of Loire-Inférieure.

#### More Records.

BÉCONNAIS is truly irrepressible! Not satisfied with beating the records of other motor-cyclists, he reduces his own times from week to week with almost clockwork regularity, and I very much doubt whether he will cease his efforts even after he has achieved his ambition of covering 70 kilometres in the hour. On Sunday last, at the Parc des Princes, he gave an exhibition of speed-travelling which fairly electrified the crowd of spectators. He covered 16 kilometres in 13 m. 59 $\frac{3}{4}$  s., thus making an average speed of 20 metres per second. But it was on Monday afternoon

that he achieved a still more wonderful performance, for he then succeeded in beating the existing figures for the hour by no less than 4 kilometres 244 metres. His times were as follows:—10 kilos., 8 m. 41 s.; 20 kilos., 17 m. 19 $\frac{1}{2}$  s.; 30 kilos., 26 m. 3 $\frac{1}{2}$  s.; 40 kilos., 34 m. 55 s.; 50 kilos., 43 m. 48 $\frac{3}{4}$  s.; 60 kilos., 52 m. 49 $\frac{1}{2}$  s. Hour—67 kilometres 901 metres. All previous records were beaten with the exception of that for the first kilometre, which remains at 1 m. 3 $\frac{1}{2}$  s. Béconnais rode a Phébus tricycle.

#### Automobiles for the French Soudan.

*La France Automobile* in its last issue illustrates a special 9-h.p. De Dietrich car, which is about to be despatched to the French Soudan, where it is to be used in connection with the postal service. The car takes the form of a charr-a-banc, the seats being made to lift up. The entrance to the car is located at the rear.

#### The Bennett Challenge Cup.

THE Commission Sportive of the French Automobile Club is drawing up a series of regulations regarding the automobile races in connection with the Bennett Challenge Cup. It is rumoured the projected regulations provide that any races in connection with the cup will not be between individual riders, but between three or five members of each of the contesting clubs, the race to be run in the country of the club holding the cup, and the distance to be at least 600 kilometres.

#### Price of Motor-Car Spirit in Paris.

FROM the first day of the present month the price of motor-car spirit for automobiles has been advanced 5 cents per litre. "Chauffeurs," says the *Figaro*, "now have to pay 65 cents per litre in Paris and 50 cents outside the fortifications."

#### The "Ailsa Craig" Motor - Tricycle Stand.

THE "Ailsa Craig" motor-tricycle stand is now being introduced into France. The agency for it has just been taken up by Messrs. Farman and Co., 25 Rue de la Paix, Paris. Mr. Craig writes us from the French capital, stating that the stands have created a favourable impression in motor-cycling circles there, and that he has already booked orders which will take him three months to complete.

C. R. IUNGERICH and Dr. M. L. Williams have petitioned the City Council of Champaign, Ill., U.S.A., for a 20-year franchise to operate a system of automobiles. The carriages will be run at 10-minute intervals over a regular route, and as soon as the franchise is granted it is stated that a company will be organized to further the project.

THE Duryea Mfg. Co., of Peoria, Ill., have for some time been making three-wheel motor-cars. Since many people, however, look with suspicion on anything out of the ordinary, the Company, and their licensees, the Peoria Rubber and Mfg. Co., of Peoria, Ill., have decided to also make their motor-vehicles in the four-wheeled style, although stating that they believe the three-wheeler to be superior in many respects. The mechanism of the vehicle is similar to that used in their other cars, consisting of triple-cylinder motor geared by chain to the driving axle for ordinary speeds, but having a power gear for hill-climbing or reversing. The steering of the four-wheeler is effected by pivoted heads just inside the forward hubs. These new vehicles, like the three-wheelers, have the driving wheels well under the load, so that ample traction is secured, while the steering wheels are placed well forward, making a long wheel base which gives steady and secure steering.

## THE UNDERBERG PETROLEUM-SPIRIT MOTOR-VOITURETTE.

WE have already referred in previous issues of this journal to the large number of light two or three-seated motor-vehicles which have lately made their appearance in France. Among these is the voiturette made by M. E. Underberg, of Rue Coulmiers, Nantes, of which we are now able to publish a brief description, together with illustrations (Figs. 1, 2 and 3). The car is arranged to carry two persons, although a small folding seat may also be adapted

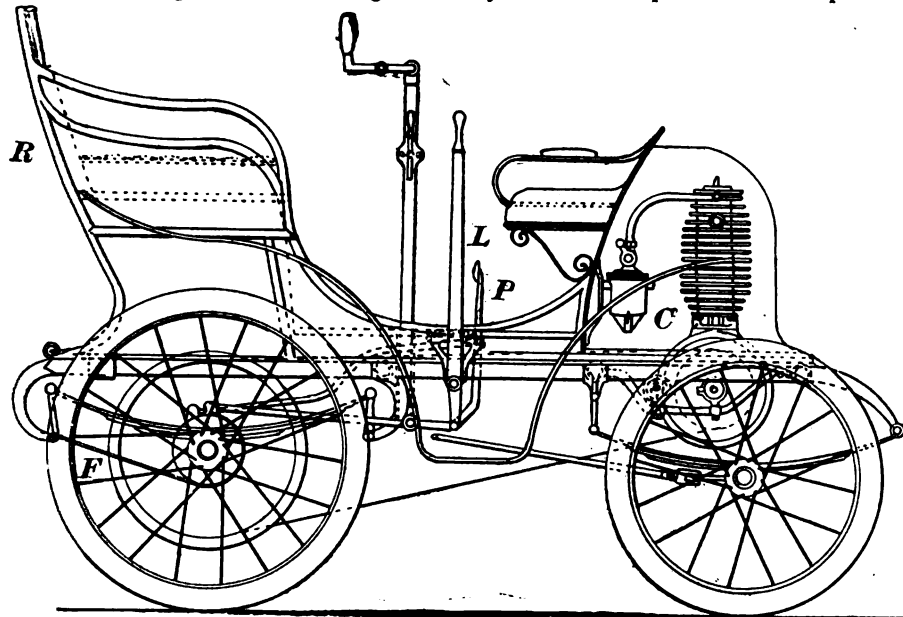


FIG. 2. ELEVATION OF UNDERBERG MOTOR-VOITURETTE.

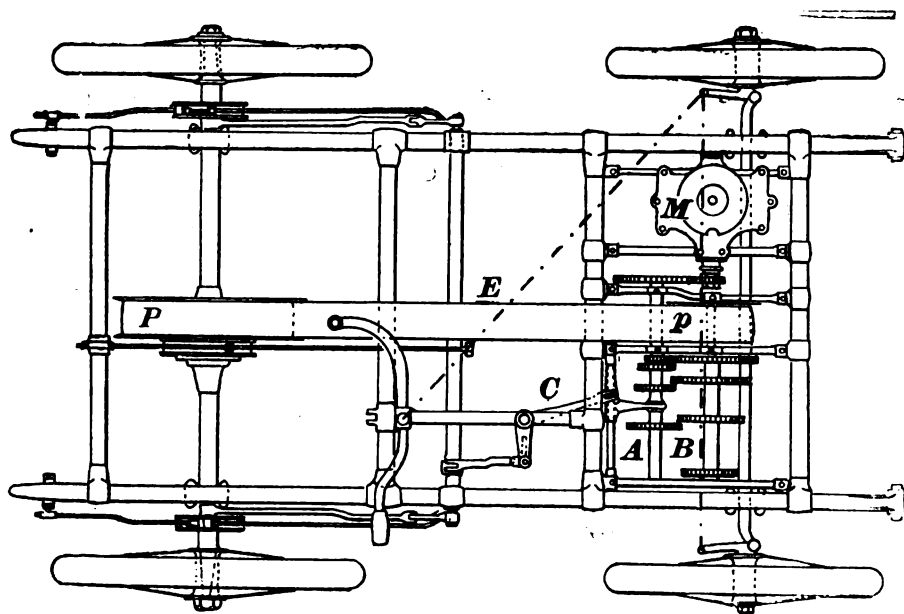


FIG. 3. PLAN OF UNDERBERG MOTOR-VOITURETTE.

in front for a third passenger or for luggage. The motor is a single-cylinder Gaillardet, of the type described in our issue of July 7th last. It is capable of working up to 3 h.p. The ignition is electrical, while the cooling of the cylinders is effected by means of radial fins. As will be seen it is located at *M*, in the fore part of the carriage. The carburettor *C* is of the constant level type, and is fed under the action of gravity from the petrol storage tank arranged under the main seat. It is provided with a two-way valve, controlled from the steering pillar, by means of which both the amount of air and spirit in the explosive mixture can be regulated. Provi-

sion is made for starting the motor by means of a detachable handle. Four forward speeds are provided, the variable speed gear being controlled by the lever *L*. The motor transmits its power to an intermediary shaft *A*, on which are mounted four gear wheels in such a way that while rotating rapidly with the shaft they are free to move laterally under the action of the lever. Thus any one of the wheels can be placed in gear with the corresponding pinion on the second countershaft *B*. On the inner end of the latter is mounted a pulley *p*, which is connected by a belt *E* to a large pulley *P* surrounding the differential gear on the rear road axle. The latter is carried in a special manner, in such a way that by means of the foot pedal *P*<sup>1</sup> it can be moved backwards or forwards a small distance, thus tightening or slackening the driving belt, the use of a friction clutch to cut out the motor from the driving gear being in this way obviated. The frame of the vehicle is built up of steel tubing, and is supported on the axles by means of springs. The road wheels are of the cycle type, fitted with pneumatic tires. The car weighs, complete, 5½ cwt. It can, it is claimed, attain an average speed of twenty-five kilometres per hour and ascend gradients of 12 per cent.

THE Hudson Gas Motor and Vehicle Manufacturing Co. has been organized at Saratoga Springs, U.S.A., with a capital of £20,000, to manufacture motors, vehicles, etc.

ON another page of the present issue we publish an interesting account of a race and a tour in the South of France, for which we are indebted to Mr. Staplee Firth.

IN answer to "H. T. L.," we may state the agency for this country for the Empress motor-voiturette described in our issue of the 9th ult. is held by the United Motor Industries, of 3 Rue Meyerbeer, Paris, to whom all enquiries regarding the vehicle should be addressed.

ON Wednesday last Messrs. Hewetson, of Dean Steet, Oxford Street, London, W., subjected one of their No. 1 Benz "Ideal" cars, with parcel van top to a 100 miles non-stop run in connection with the trials that are being organized by the Automobile Club. The route was from the second milestone past the Marble Arch to the fifty-second one on the road to Oxford, and back. We are pleased to be able to report that the car accomplished the journey without a stop or hitch of any kind in 7 hours 35 minutes, the time being taken by Mr. Swindley, the Club's official timekeeper. Mr. E. J. Coles was at the helm, and accompanying him were two other gentlemen, their total weight aggregating 29 stones 10 lb.

WHEN last heard from, Mr. and Mrs. Davis who started to ride from New York to San Francisco in a motor-car, were somewhere in the neighbourhood Adrian, Mich. The latest news from these plucky but ill-starred travellers was as discouraging as the first. The car was hauled to Adrian for inspection and general repairs. The last recorded speed made by the automobile was twelve miles in four days!

MR. W. J. STAPLES, of Maryville, Mo., has built an experimental petroleum-spirit carriage. Belts are used for transmitting from the motor-shaft to the counter-shaft, tightened by a jockey-pulley. A chain runs from the counter-shaft to the differential. Wood wheels, 36 in. and 32 in. in diameter respectively, are used, 1½-in. solid rubber tires and electric ignition. The maximum speed is twelve miles per hour.

## SCOTTISH NOTES.

**Keep to the Road.**

At Stonehaven, N.B., last week, James W. Garden, motor-car driver, Wellington Road, Aberdeen, was charged with driving a motor-car for at least 120 yards on the footpath of the road between Aberdeen and Stonehaven. Accused said this step on his part was rendered necessary by a horse taking fright at the car. The Bench imposed a fine of 10s., with £1 2s. expenses, or seven days in prison.

**The Edinburgh Motor Postal Van.**

FROM enquiries made this week I learn that the electric van which has been employed by the Edinburgh postal authorities has given satisfaction, and that it is intended shortly to extend the service. The van referred to was built by the Madelvic Motor-Carriage Co., Ltd., of Granton.

**The Weather.**

THE weather in the North recently has reminded chauffeurs that winter is fast approaching, and that soon indulgence in their favourite pastime must be largely curtailed. After some exceptionally stormy days, however, one or two perfectly ideal ones have been thrown in, as it were, for the express purpose of allowing one or two good spins before the roads are in quagmire condition or in the hands of the steam roller. These fine days have largely been taken advantage of by votaries of the pastime, who have enjoyed the exhilarating exercise under conditions of the most pleasing description. There is no such thing as dust to trouble one at this time of the year, and on the days in question a bright October sky and clear, crisp air made an outing truly invigorating. A lady of my acquaintance remarked, after just such a spin, that she infinitely preferred driving at this time of the year to the summer time. The dust at the latter period was simply abominable, she said, and, unless after a shower of rain, she really did not care to go out driving then in any but old clothes. I dare say there is something in this lady's complaint, but the fair sex have yet to learn what is the most appropriate wear for dry, dusty weather, and once they give the matter their attention doubtless something appropriate will be evolved from their imaginative and fertile brains. I have heard many members of the sterner sex growl, too, about the mess they get their clothes in through rapid travelling over dusty roads in summer; but, after all, this is surely a very small matter to make a fuss about, and soap and water are generally available at the end of one's journey. All the same, I have myself been so ingrained with dust on more than one occasion that a bath was absolutely imperative. One soon learns to treat these matters philosophically, however, and wear clothes or overalls which will stand a good "dousing" of dust, and brush easily.

**"Information Wanted."**

AN Edinburgh correspondent, "T. R.," makes some queries in a recent issue regarding a hooded motor-carriage which he saw at Strathpeffer recently, and which he thought ran very sweetly. He was under the impression that it was an electric motor, and expressed a desire to obtain further particulars regarding it. From enquiries made I believe the only electric vehicle in the district mentioned came from Clifton, a shooting-lodge about twelve miles from Strathpeffer, and if my information is correct it came to grief very early in the season. The driver, it appears, ran it off the road, the car turning a somersault and landing, with a boy, at the roadside, where it remained for a fortnight before

it was freed from its ignominious position. The severe shock to the system apparently proved too much for the car, and it has not been seen out since. There were several oil motor-cars running about Strathpeffer and neighbourhood this season, however, and one of them had a hood. These, so far as I could learn, were all Daimlers, and it is very likely that it was one of these your Edinburgh correspondent saw. There is a gradient of about 1 in 16 coming into Strathpeffer, and it is the usual thing when coming down this hill to take out the clutch and run the car out of gear. Were this the case when "T. R." met the car in question it would probably account for its apparent phenomenally quiet running. I was told of one motor-vehicle—a sporting dog-cart—which enjoyed the credit of being the sweetest running car in the district. It was hired for the shooting season by a gentleman from, I believe, the Hiring Co. in Hamilton.

**Another Tourist.**

MR. E. CAMPBELL MUIR, of Inistry, Dalmally, and Ebury Street, London, has been "doing" Scotland well this year with his Grafton-Daimler car. He "motored" from Oban to Glasgow recently, and was very enthusiastic over the good runs he had made. It is only those who, like Mr. Muir, have "done" some of our more popular Scottish routes can speak with authority on the keen delight of traversing mile after mile through the choicest of scenery—mountain, moorland, loch, and pastoral—on a horseless wonder which knows not fatigue.

**A Motor-Van.**

I NOTICED a motor-van in Glasgow the other day belonging to a firm of Hamilton stationers who travel all over the country selling goods and canvassing for orders, and was much struck by the amount of interest it excited. Quite a number of people stopped to look at it, while almost every second person turned round to gaze at the novel sight. I use the word "novel" advisedly, for, strange as it may seem, motor-cars are a comparative novelty in "the second city of the Empire." Beyond the three cars belonging to the curiously-named Mo-Car Syndicate, the only other car in Glasgow is a small motor-bus belonging to the Scottish Co-operative Wholesale Society. Mr. John Anderson, of the Royal Polytechnic, for some time used a motor-car for goods delivery purposes, but I have not seen it on the road lately. Mr. Johnstone and Mr. Murray, of the Mo-Car Syndicate, may often be seen out driving in one or other of their electric or oil motors, but beyond these and the ones already mentioned I do not believe there is a single motor in Glasgow owned by a private individual. The Mo-Car Syndicate booked an order from the Corporation of Glasgow some time ago for an electric dust-cart, but I have not heard anything further of it. Its advent will be awaited with interest, for an electric car of the size required will be a decided novelty.

**Edinburgh.**

EDINBURGH is in a very different position from Glasgow in regard to things automobile, the fleet of eighteen cars belonging to the Edinburgh Auto-Car Co., and which daily ply with full loads of passengers, having made the motor-car a familiar sight in "Auld Reekie."

**The Scottish Club.**

THE movement to form a branch of the Automobile Club of Great Britain in Scotland has, for this year at any rate, apparently died a natural death. Edinburgh autocarists were keen in having the headquarters of the club in Edinburgh, and there was some talk of Eastern chauffeurs making an effort to get the affair carried through, seeing

Glasgow was not in any hurry over the matter; but apparently their zeal has cooled down, too, for another season, for nothing more has been heard of the matter. The number of people interesting themselves in the movement, however, is daily on the increase, and by next year I anticipate that that number will have been so added to that the formation of a Scottish branch of the Automobile Club will be merely a question of another nine months.

**"Motor-Car Accidents."**

MR. C. W. COWAN, Valleyfield, Penicuik, writes to the *Scotsman* on the 5th inst. as follows:—

In the report of the Edinburgh Autocar Company, Ltd., it is stated that there had been no accident during those months. They do not mention that accidents have happened from motor-cars on country roads. I know of two, in one of which, because the driver of the motor took no notice of a signal from the driver of a four-wheeled dog-cart, a lady was pitched from the box-seat over a wall into a field, and the trap damaged. Fortunately the lady escaped with severe bruises, but she might have been killed. Another friend driving in the country had his trap damaged by a motor-car frightening the horse. If traction engines, road rollers, etc., constantly stop and offer assistance to restive horses, why not motor-cars?

To this Mr. Outhwaite, managing director of the Edinburgh Autocar Company, sent the following reply:—

With reference to the letter in your issue of 5th inst., stating that while the cars of the Edinburgh Autocar Company, Ltd., have run over 20,000 miles during the past summer without loss of life or limb to passengers, the drivers of them are directly responsible for two serious accidents to parties in charge of horse-drawn vehicles, permit me to state that most careful inquiries were made in each case referred to, the result of which proved that our drivers were entirely free from all blame, and, moreover, the cars were standing still at the time of both accidents. Our drivers have very special orders to show every consideration to drivers of horse-drawn vehicles, as is only right, but experience has shown that the more our men go out of their way to assist drivers in any difficulty the greater is the abuse showered upon them. I would further point out that our drivers have orders to stop the motor on their car when necessary, although this is not required by law, so that the accusation which you publish to-day can only be the outcome of a biased mind. Both horse and motor have their place, and it is certain that, did the injured parties attach any blame to our drivers, the Company would have been called to account ere this.

This is just the old story of attempting to class carriage accidents as motor-car ones. In all cases automobilists worthy of the name do their best to render assistance to drivers of horse-drawn vehicles when they notice that the animal shows signs of fright, and stop when they are signalled to do so. As has often been said before, in nine cases out of ten the drivers of the traps themselves are more frightened than the horses, and in a great many cases completely upset the animals' nerves by the manner in which they pull at the reins and prepare for a bolt, which in numerous instances the horses never intended making.

"BROWN HEATHER."

A MOTOR-CAR has been put in service between St. Peter's Church and Trent Bridge, Nottingham. The car makes a journey every quarter of an hour, and carries an average of ten passengers at 3d. a head.

A MOVEMENT is on foot to organize a large motor-car exhibition in New York. It is considered that the organization of such a show would be one of the best means to help American manufacturers to get ready for the Paris Exhibition, and that the most opportune time for holding it would be in February next.

MESSRS. FRIEDHEIM & Co., of 34 Amhurst Road, London, N.E., the agents in this country for Messrs. Zimmermann, Knauth, & Co., of Kappel, Chemnitz, Saxony, have sent out a copy of their catalogue of cycle and other lamps. Glancing over the list we find illustrations of a neat form of acetylene lamp specially designed for motor-cars. Those automobilists in need of such accessories would do well to enquire further into the merits of the "Saxonia" lamps.

**THE ALLARD LIGHT MOTOR-CAR.**

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OUR Midland correspondent, "Hercules," referred last week to the new light motor-car which has just been brought out by Messrs. Allard & Co., Ltd., of Earlsdon, Coventry. We are now able to give an illustration of the new vehicle, which takes the form of a two-seated *vis-à-vis* or *tête-à-tête*, as the firm term it. The motor is of the vertical type, of 2½ h.p., with radial discs for cooling purposes. The ignition is electrical, while the carburettor is of the Longuemare type. The motor is geared to the rear axle



through the medium of a Didier two-speed gear, which, aided by the variations possible with the electric ignition device, gives a wide range of speeds. The road wheels are of the cycle type, fitted with pneumatic tires. The body is suspended on the frame by means of compass springs at the front and C springs at the rear. The little car is about 42 in. wide, and weighs only 5 cwt. "Hercules" has already had a trial trip on the car, and expresses himself satisfied with its hill-climbing capabilities, Gibbett Hill being mounted at a speed of between nine and ten miles per hour.

A NEW motor-bicycle is, we hear, about to be put on the market by Messrs. Ambrose Shaw & Sons, of the Gazelle Cycle Works, Crawley.

LA SOCIÉTÉ DES MOTEURS ROTATIFS (Arnaud & Marot) is the style of a new firm which has just been formed in Paris (155 Boulevard Malesherbes) with a capital of £8,000.

THE United States Consul at Shanghai regards that place as eminently suitable for motor-vehicles, more particularly as the present locomotion is entirely by means of horses.

AN enterprising grocer in a northern town advertises "motor tea," and in sending this information a correspondent asks if it is of China, Scotch, or Irish origin. We know not.

THE Automobile Carriage Co. has been organized at Amesbury, Mass., by a number of well-known carriage builders, with a capital of £30,000. The motive power of the vehicles will be electricity.

WE have received from Messrs. Brampton Bros., Ltd., of Birmingham, a large chart giving particulars and illustrations of the many sizes of block and roller chains they manufacture for use on motor-vehicles. The chart not only gives the various pitches and breaking loads of the chains but also the dimensions of the blocks and rollers in the same, and should be found useful for reference purposes by all interested in the manufacture, sale, or repair of motor-vehicles.



## MIDLAND MOTOR NOTES.

By "HERCULES."

Motor-Cars  
in Leicester.

LEICESTER, one of the most progressive of Midland towns, is keenly alive to the great utility of the motor-car. The conversion is all the more gratifying because it is based on practical experience. A few months ago the motor-car, when first introduced there, was looked upon as the playful hobby of a few gentlemen, and found little favour; to-day, after practical experience of its claims and capabilities, it is considered the safest, most comfortable, and best means of locomotion for the conveyance of passengers in the town. The first cars were introduced in April of this year, when a few gentlemen developed the business of what is known as the Leicester Motor-Car Company, Ltd., to test by experience the running of motor-cars for public use. Subsequent results have conclusively proved that they were justified in their anticipations. The success which has attended the service they established has been phenomenal, and there is every reason to believe that in the near future this success can even be improved upon. From the experience of the Company's working the weekly cost per car for storage, oil, petrol and driver has amounted to £3 5s., while the average weekly earnings of each car has been £10, which leaves for depreciation, repairs and renewals, and other incidental expenses, reserve fund and dividends, £6 15s. per car per week. These facts have been duly testified to by a chartered accountant with the view to the flotation of a company with a share capital of £30,000. When this has been accomplished it is proposed to purchase several more cars, and make the service a much more extended one. These particulars are sufficient to show that the motor-car has come to stay in Leicester.

Motor-Cycling  
in  
Coventry.

MR. GEORGE DU CROS, of the Dunlop Tyre Co., Coventry, was the defendant in a motor case at the Coventry Police-Court on Thursday last week. Mr. Du Cros is a motorist, and when riding through one of the streets of the city of spires he suddenly became aware that the driver of a vehicle coming in the opposite direction was signalling him to stop. Mr. Du Cros did not attend the court in person, but was represented by a solicitor, who informed the Bench that his client did not notice the gentleman signalling to him until he was within twenty yards. As the street was on the decline and the surface very greasy at the time, he was unable to stop the tricycle until he was close to the horse and vehicle. The driver of the vehicle, a licensed victualler residing in the city, complained that Mr. Du Cros did not pull up so quickly as he ought to have done, and informed the court that he was signalling for some time before defendant attempted to stop. Regret was expressed that Mr. Du Cros had not complied more closely with the requirements of the Act, and the Bench, in fining him 10s. and costs, pointed out that it was essential motorists should be on the alert for requests made by drivers of restless horses.

The First  
Case.

THIS was the first case of the kind in Coventry, and considering the number of motors which pass through the streets it speaks well for motorists that such a long time should have passed since the Act was put into operation without any action against them having been taken. In this case one wonders why a summons was taken out. The complainant was a private individual, and no evidence was given to show that Mr. Du Cros sought to set the law at

defiance. His error was in not seeing the driver signalling the moment he put his hand up; when he did become aware that someone desired him to stop he did all he could to comply with the request. Consequently there seemed little reason for dragging the case into the police-court. Mr. Du Cros is regarded as a very careful and experienced driver, and an apology for not "complying more closely with the requirements of the Act" should have satisfied the owner of the horse.

## A Warning.

THE case will doubtless serve as a warning in the district, and motorists will no doubt be on the *qui vive* for restless horses and the demands to stop. Such demands are not always made with the best grace; some drivers are apt to think that no one else is entitled to the road but themselves, and look upon a motor-car with special aversion. If they can put the driver of the "light locomotive" to any trouble they will do so; they are, they are proud to say, masters of the situation: they have only to put up their hand, and the motorist must stop. No driver of any type of automobile wishes to cause a horse to prance about the road just for "the fun of the thing," and as far as I know they are only anxious to meet with the desires of drivers whose horses have not yet become accustomed to the new mode of locomotion. On the other hand, drivers should be equally considerate, and not call upon motorists to stop when there is no reason for so doing.

A Hint to  
Drivers  
of Horses.

WASN'T the fine in the case referred to a trifle "stiffer" than was required by the circumstances? It was the first case of the sort; no complaints had been previously made against the defendant; the non-stopping was evidently not intentional; and yet the defendant had to pay 10s. fine and perhaps twice as much in costs. One can't help comparing the amount with the fines inflicted upon drivers who have been convicted of furious driving, or who have bored a cyclist on to the kerb, or who have been asleep or too far off their horses to have any control over them. These cases are constantly occurring. No one would say that motorists or cyclists are perfect, but they surely cannot be worse offenders, and cannot endanger public safety to a greater extent, than a horse and vehicle in the hands of a careless or reckless driver. Mr. Onativia, of Kenilworth, who is well known in the motor world, will bear this statement out, for his brougham was simply wrecked the other night when driving along the Coventry and Kenilworth Road.

The  
"Princess" Car.

THE Motor Manufacturing Company, Coventry, are experiencing the truth of the old saw, "Nothing succeeds like success." They are experiencing a gratifying demand for their "Princess" car, and have been compelled to increase the number of their employés and work at full pressure. The results are very satisfactory, and cars are being turned out with the greatest expedition which the best workmanship and care for details permit. Except tires, everything required in motor-car construction is made on the premises, and a visit to the works the other morning proved highly interesting, especially the wheel-building, joinery and coach-building departments.

Motoring Visitors  
to Coventry.

LAST week Coventry was favoured with distinguished motorists in the persons of Sir Francis and Lady Jeune, who have been making a motor-car tour in the district. They stayed at the King's Head Hotel in Coventry, and made daily excursions to the many historical places of interest in the neighbourhood.

**A New Motor-Car Company.**

STILL they come! The Melbourne Carriage, Motor and Cycle Co., Ltd., of Green Land, Wolverhampton, have now started in the motor manufacturing industry. This is an amalgamation of the firms of Allan & Summerfield, cycle makers, and Beech & Onions, carriage builders.

**The "Star" Car.**

MR. LISLE, of the Star Cycle Co., Ltd., Wolverhampton, asked me a few days ago to accompany him on a trial run of one of their motor-cars. I consented, and spent a very pleasant time, thoroughly enjoying the ride and appreciating the enervating and exhilarating influences of the bright sunshine and crisp air as we glided easily and smoothly along. I was impressed at the comfortable motion of the car and the ease with which it was controlled. The speed capabilities of the vehicle were also tested, and once or twice we seemed to fairly fly. Had not such a thoroughly experienced driver as Mr. Lisle been at the helm I might have been alarmed, but as it was I soon became accustomed to the rapid motion. There is no mistake about it, motoring has only to be experienced a few times for one to grow enthusiastic in the sport. I may add that the management of the car is exceedingly simple, and a short time sufficed to grasp the theory of its control, which seems to be perfect. On the same day I had a run over the firm's premises, and was astonished at the large number of cars in course of construction. Some had been but recently commenced, whilst others were being painted, and upholstered with handsome cushions.

**The Wearwell Car.**

I HAD a chat the other day with Mr. Clarke, of the Wearwell Cycle Co., and gather that he is most sanguine as to the success which this Company's motor-cars will achieve. They will, he believes, prove to be amongst the fastest and lightest on the market. The cars will be fitted with duplex engines, which can be used singly or jointly as desired.

**A Motor-'Bus Service for Wolverhampton.**

A REMARK in a previous issue of this journal regarding a service of motor-'buses for Wolverhampton seems likely to bear fruit ere long. I understand that the matter was discussed a few days ago at a private meeting of a number of gentlemen, and that it was decided to ascertain the prices of vehicles suitable for the purpose, and other information bearing upon the subject. I feel confident that when these gentlemen learn the success with which similar services are being run in other towns they will have no hesitation in following suit. Publicity of the fact that the matter is under contemplation is only necessary, I feel sure, to lead many others to interest themselves in what is believed would prove not only a boon to the town, but also a most successful venture.

**More Eadie Specialities.**

THE Eadie Manufacturing Co., of Redditch, are now, we learn, prepared to supply to the trade motor axles, bridges, and balance gears. The Company have arranged to make the components in question in extensive quantities, so that firms who purchase from them will save loss of time and much expenditure by taking advantage of the product of a large and specialised, and therefore economical, output.

THE Ariel Cycle Co., Ltd., Birmingham, have now introduced a 2½-h.p. motor quadricycle convertible to a tricycle.

**CORRESPONDENCE.**

**THE FAULTS OF MOTOR-TRICYCLES.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I intend going in for a motor-tricycle, and want to learn all the details of the motor and electric ignition, so that I can use the machine with confidence after a little practice.

Will you assist me in advising the best way to learn, as I am perfectly ignorant of both, but with a little clear explanation of the working, etc., I shall get over it. What book is there published, and what are the bad points in a motor-tricycle? When I used to drive I always requested to be told the faults of a horse. When one knows these he is more master at once; and there must be some drawbacks to a motor-tricycle. Thanking you in anticipation,

Wotton,

October 10th, 1899.

Yours truly,

G. D. H.

[Our correspondent would do well to place himself in communication with the firms now manufacturing and vending motor-tricycles. They will, we feel sure, be only too pleased to afford him full information and every facility possible.—ED. M.-C. J.]

**TOLL CHARGES FOR MOTOR-TRICYCLES.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In riding a motor-tricycle, I find in certain parts of the country, and notably on several bridges over the Thames, that toll keepers try to exact various sums varying from 6d. to 1s. 6d. from me for passing through. On looking at the scale of charges exhibited on the board, the description runs: "For every description of steam or other machinery-propelled carriage, 1s. 6d.," and no mention whatever is made of a motor-cycle. I invariably refuse to pay, and make sure always when approaching the gates to propel the machine by the pedals only. I, in common with no doubt many other motor-tricyclists, should be pleased to know whether this tax can be legally enforced, more especially as no charge is made to pedestrians and riders of the bicycle and tricycle without motor attached.

15A Baker Street,  
Portman Square.

October 11th, 1899.

Yours faithfully,

EDWIN S. CHEEL.

**THE CINEMATOGRAPH ON TOUR WITH A MOTOR-CAR.**

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—What a difficult matter it seems to be to obtain reliable information as to the state of the roads, even from the people who have lived all their lives in the vicinity of the same, and who, moreover, are constantly travelling over them. This I have proved on more than one occasion, and especially so last week. In a journey from Orton to Appleby, Westmoreland, there was a choice of two routes, one over Orton Scar, and the other a longer route *via* Kirkby Stephen. Both it was agreed on all hands were very bad roads, but which was the better was what I wanted to know, and despite the most persistent enquiries I could not get any definite answer. I had to decide myself, and as if by a spirit of obstinacy selected the one which at the start at all events presented the greatest difficulties. We elected to climb Orton Scar, and this we accomplished safely. We had an early start—7.30 a.m.—and on reaching the summit of the Scar were rewarded with a magnificent view. A bank of light fog, stretching apparently for miles, lay at our feet, and the tops of the surrounding mountains peeped out here and there like islands in a big lake. This sight alone was worth a greater effort than we had to make to take our car up Orton Scar. The road thence to Appleby was indeed very rough. We, however, reached Appleby at 9.15, just one hour and three-quarters for fourteen miles—not so bad when one considers the heavy load we carry. On arrival at

Appleby I found an urgent summons awaiting me to proceed to Edinburgh. This I was compelled to attend to, and so for the balance of the week's tour to Warcop, Brough, and Kirkby Stephen, Mr. Sinclair and Mr. Lax had it entirely to themselves. On my return they reported no incident and all well, so that this letter will be void of any such exciting experience as noted in my last. Next week we are to visit several of the highly-situated towns in the Teesdale district, most of which, from what I can gather, have never yet had a motor-car in their midst, so we naturally anticipate a good reception, the result of which I will let you know in due course.

I am,

Yours, etc.,

T. J. WEST,

Manager of the Modern Marvel  
Co. (Ltd.), of Edinburgh.

Kirkby Stephen,  
October 11th, 1899.

### SOME QUESTIONS REGARDING THE DE DION MOTOR-TRICYCLE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am surprised that none of your motor-cyclist readers have taken the trouble to reply to Mr. Shardlow's queries in your issue of September 29th. I will endeavour to do so to the best of my ability.

(1.) The dry battery of a De Dion tricycle certainly should not give out after a mileage of only 550. The makers claim for them a maximum of 200 hours continuous running, i.e., about 2,400 miles. I have run nearly 1,800 miles with my present battery, which still gives a good spark. Is Mr. Shardlow sure that before the machine came into his hands the contact plug had not been carelessly left in after using?

(2.) A French dry battery (the same as supplied by the De Dion firm) can be obtained through the British Motor Co., 40 Holborn Viaduct, at 35s.; it gives about five amperes when new. I saw recently at the offices of the London Autocar Co., 183 Gray's Inn Road, W.C., an English 4-cell battery made to fit the De Dion case, listed at only 16s. 2d. I have not tried this, but should think it quite worth a trial at the price. This is said to give eleven amperes.

(3.) The machine with thirteen teeth in the pinion wheel is a medium gear, and the makers do not claim that it can climb any hill. If Mr. Shardlow is a heavyweight, why does he not convert it to the low gear, with 11 and 106 teeth? These gear-wheels could be obtained from either of the above firms for about 30s. I ride a low gear, and in this hilly district I find it faster than the medium. The 2½-h.p. motor made by the Motor Mfg. Co. is said to fit a De Dion frame, but I do not know if much more power can be got from it, and it would certainly be more difficult to keep cool. These air-cooled motors quickly lose their compression, and then their hill work is poor; the valves, piston rings and joints should be carefully adjusted and tested. I can only say that my machine does its work admirably, and that I find it invaluable.

Ringmore, Teignmouth,  
October 10th, 1899.

Yours truly,  
W. E. TESCHEMAKER.

THE Perfect Compound Kerosene Gas and Compressed Air Automobile Fire Engine and Motor Manufacturing Company is the somewhat lengthy name of a company which has just been formed at Hoboken, N.J., with a capital of £100,000, to manufacture automobile fire engines and motor-vehicles.

THE Automobile Exchange, an emporium and training school, has been opened at 213 West Fifty-Eighth Street, New York. Vehicles propelled by different motive powers will be kept in service, and competent teachers and repairers will always be ready to instruct the novice or put vehicles in order. Courses will consist of five or ten lessons, and charges for vehicles and instruction will be made by the hour.

## A RACE AND A TOUR IN THE SOUTH OF FRANCE.

—❦—

THE race was from Bordeaux to Biarritz, and the gentlemen responsible for its arrangement were M. Felix Mouren, Mayor of Biarritz; M. le Docteur Cr<sup>eu</sup>zan, M. Despaur, M. Rene Marman, M. le Marquis de Vivier, and M. le Baron du Barry. The judges were the Marquis de San Carlos and other prominent noblemen.

The racing was divided into classes. In the class for 6 h.p. and more the Hon. C. S. Rolls competed. Another English gentleman, Mr. C. L. Barrow, a resident of Biarritz, also competed in this class. The Hon. C. S. Rolls drove his 8-h.p. Panhard car and Mr. Barrow an elegant De Dietrich car. The start was made at Bordeaux, but Rolls' car had not proceeded more than 10 kilometres when a chain jumped the wheels. The only observation by the occupants of the car was "chain off." They rapidly alighted, and soon replaced it, and again started. However, after travelling a further 20 kilometres "that chain" jumped off again, but it was again rapidly replaced and the tension rol adjusted. Some of the roads were worn and lumpy, but on the whole they were superior to English roads. At Largon, Mr. C. L. Barrow and M. Calvert were respectively first and second, and Rolls—owing to his two accidents—third. At Auros, good work by Rolls had gained him second place, with Mr. Barrow still first. The merry hum of the engines inspired everyone with confidence, and at Grignols Rolls' car passed Barrow's, and was first to arrive at Casteljaloux. From there to Mont-de-Marsan the lead was gradually increased, and the first day's run of 176 kilometres was done in 4 hours 13 minutes.

After arriving at Mont-de-Marsan the engine suddenly turned stupid, and it was found that the governors were acting quite too energetically and preventing the engines from running properly. Rolls was not the man to sit down and weep, and promptly set to work to remedy the defect which ultimately ended in disconnecting the governor spindle and connecting the "cut outs" with wire to be used when necessary, and although this misfortune was not temporarily adjusted until the night and early morning had been spent in unwearying toil, the reward was at hand and ended next day in victory for the car.

The next day broke with a bright morning, and the start from Mont-de-Marsan was made at 11.38. After a splendid run through the pine forests, Saint Paul le Dux was reached at 1.15, and the journey was continued without interruption to Bayonne which was reached at 2.23.

Shortly after, the arrival of the car at Biarritz was signalled by the firing of two guns, and the Englishman's car had won the race by 27 minutes. The average speed for the two days run was over 27 miles an hour, including stoppages.

It was a delightful trip, the long, straight roads through the pine forests adding greatly to the enjoyment. Everybody made way for the automobile except two dogs, which committed suicide in a zealous and determined endeavour to throw the car off the road. An interesting feature of the roads in Southern France is the numerous yokes of oxen, which seem to have better sense than most cattle, for they regard the automobile with a look of silent admiration; and throughout the race and subsequent tour there was only one horse that had the bad taste to make a fuss. This is easily accounted for from the fact that Frenchmen are good horsemen, and when a horse shows signs of unrest or fright they treat it properly. Ninety-nine out of every hundred Englishmen (who think that holding two strips of leather and a whip, with plenty of use of the latter, constitutes horsemanship) commence to flog a horse when it shows signs of unrest, which only forces the poor animal into a state of fear, and increased danger on a recurrence of the circumstances which raised its curiosity.

While speaking of animals it should be mentioned that the mules seem particularly sensitive and apprehensive of danger from automobiles. But what can you expect of a

mule? But to return to the subject of the race. The Mayor and authorities at Biarritz had fenced off the grand esplanade and made a fine enclosure for the automobiles. The reserved portion was thronged with a fashionable crowd of visitors and residents, and the utmost enthusiasm was shown on all hands.

A grand reception was given by the Mayor in the evening, and a large assembly of automobilists took place under the most happy circumstances. A stay in Biarritz until Wednesday was eventful, as many prominent automobilists were there, among whom were Prince Orloff, Marquis de Tovar, and Mr. C. L. Barrow, who, with the Marquis de San Carlos de Pedrosa, presented the Cup, which the Hon. C. S. Rolls had the satisfaction of bringing back to England with him.

A start was made on Wednesday morning from Biarritz, and the run for that day included Bayonne and the other places passed on the day of the race, and a halt was made for lunch at Mont-de-Marsan. After lunch a start was called for Bordeaux. The darkness, however, came on suddenly, and as it was very dangerous travelling through the deep pine forests, and uncomfortable in consequence of the heavy downfall of rain, a halt was made at Langon, having run nearly 200 miles. There was only one hotel in the place, which was not exactly like the Grand Hotel at Paris or the Savoy in London, but the people were very anxious to do the best they could for the comfort of their guests. The next morning at breakfast we had some delicious peaches and strawberries grown in the garden of the hotel.

A start was made next day at 11, and Bordeaux was reached before lunch, when it was discovered that one of the brakes had given way, and upon examination it proved that two of the pinions had dropped out, although these had been recently put in on fixing new brakes at Charron's works at Paris. The car was taken to an engineer's place who advertised as an automobilist, and after some few minutes' conversation with the principal, a fine, handsome man, he politely intimated he spoke a *little* English. When he began to speak English his dialect was distinctly Lancashire, and he turned out to be a native of Preston. He had very competent workmen, who effected the necessary repairs in a very short time. Once more—at 3.30—the journey north was resumed, through Libourne, St. Denis de Piles, Barbezieux, Petignac, and Angouleme, where, as time was pressing and both the voyagers on the car were due in London on Saturday, the journey to Paris was resumed by train. The civility, courtesy, and appreciation of automobilists is a great feature in France, no matter what district one is in, and a very enjoyable tour will long be remembered by those who took part in it.

THE Lanchester Motor Company, recently organized under the laws of New Jersey, proposes to erect a factory in Pittsburg, to employ about 600 hands.

"OWNERS of horses" says the *London Letter* "should take every opportunity of accustoming their steeds to the sight of the new phenomenon of the roads." Quite so.

AN automobile cab company organized in Portland, Me., recently intends not only to do a local business, but also to take passengers up through the White Mountains. The vehicles for the latter traffic will, according to an American contemporary, probably be tally-ho coaches capable of holding ten persons.

At a meeting of the Kesteven Standing Joint Committee at Grantham this week, Captain Bicknell (chief constable) reported that there was a certain amount of bicycle racing on the highways in the district, and he was doing his very best to put it down. He hoped the magistrates would impose the heaviest fine they could, and that in cases where the defendants did not appear warrants would be issued. The committee approved of the action he was taking.

## THE VALLÉE RACING CAR.

WE are now able to give a brief description, with illustrations, of the special racing car constructed by M. Vallée, of Le Mans, France, and ridden by "Flash" (Dr. Lehweß) in the recent Paris-Saint Malo and Paris-Ostend races. There are quite a number of

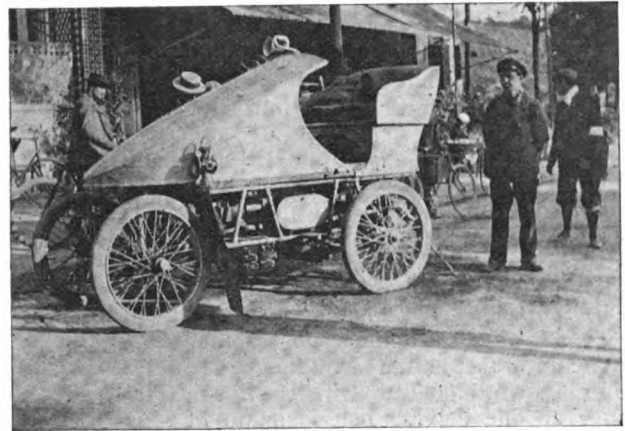


FIG. 1.—GENERAL VIEW OF THE VALLÉE 16-H.P. RACING CAR.

special features in the car, the main ones of which are the total absence of driving chains and variable speed gear. The motor is a four-cylinder one of 16 h.p., and is located in the front portion of the car; it is provided with a water-jacket, a governor, and electrical ignition. The power of the motor is transmitted directly to the rear road axle by a single wide

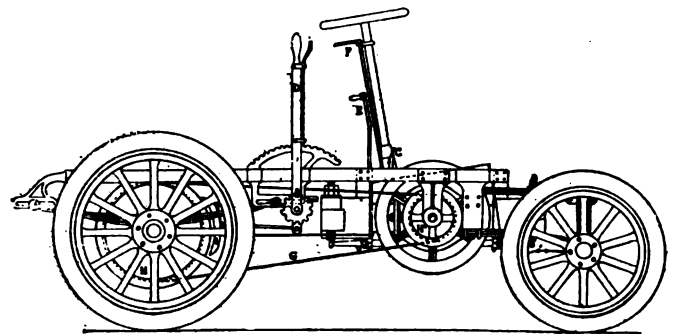


FIG. 2.—ELEVATION.

belt *G* working on the pulleys *H H'*; there is thus no mechanical variable speed gear provided, it being by means of the control of the motor that the different speeds are obtained. The governor with which the motor is equipped

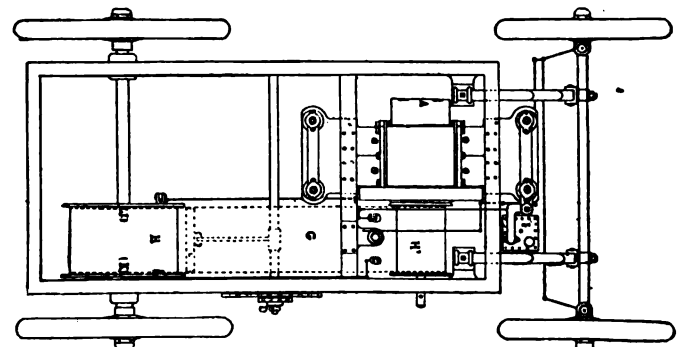


FIG. 3.—PLAN.

permits the latter to run at its normal speed on open country roads; in riding through traffic, etc., the motor can be instantly slowed down by pressing the pedal *B*, which prevents the opening of the exhaust valves, and consequently stops the admission of fresh explosive charges. Furthermore,

the speed of the motor can be additionally varied by means of the electrical ignition device. In providing the car with a four-cylinder motor, the makers claim that not only can the car go at a high speed on the level, but that it can mount any hill at a good pace without any mechanical hill-climbing gear being necessary; in fact, they claim that not only is a simpler arrangement obtained but that also a saving in weight is effected, the supplementary two cylinders weighing less than the usual variable speed gear and its accessories. The pistons are connected to the crank-shaft in such a way that the latter receives two impulses at every revolution of the fly-wheel. The motor can, it is stated, be slowed down to a speed of only fifty revolutions per minute without it coming to a standstill.

Referring to the diagrammatic illustrations (Figs. 2 and 3), *A* is a box containing the governor and sparking gear. The carburettor is located at *I* in front; on the pipe which connects it with the motor is fitted the mixing valve, controlled by the handle *F* on the steering standard. The frame of the car is entirely constructed of steel tubing. The belt pulley *H* surrounds the differential gear *K*, while inside the pulley is a backward motion device controlled by the handle *E*. A hand brake, actuated by the foot pedal *C*, is arranged to be brought into contact with the inside of the pulley *H*. The driving belt is made of special waterproof material, so that it is unaffected by rain, or splashes during the washing of the vehicle; it is also of an unusually wide width. The rear axle is supported in a special manner, it having a slight forward and backward movement, which is controlled by the handle *D*. By means of this arrangement the full tension of the driving belt can be maintained, and, if necessary, can be slackened, thus permitting a further variation of the speed of the vehicle, and, in fact, serving somewhat the purpose of a friction clutch by preventing the power of the motor being transmitted to the rear axle in case of emergency. In addition to the hand brake inside the pulley *H*, the manœuvring of the handle *D* to slacken the driving belt also brings into action a shoe brake *L* on to the face of the pulley, between the upper and lower portions of the belt.

Although "Flash" was unfortunate in the Paris-Ostend and Paris-Saint Malo races when he drove the car above described, yet he attained with it an average speed of from 40 to 42 kilometres per hour.

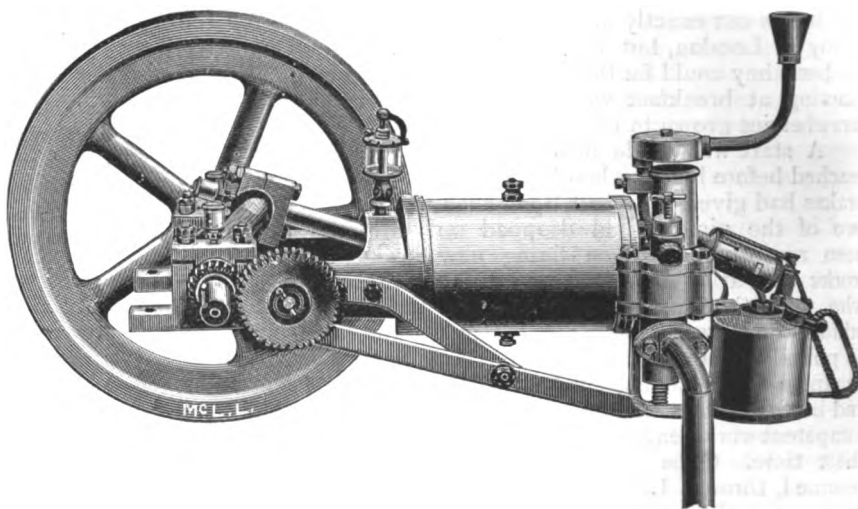
We learn that the construction of motor-cycles is being taken up by the Riley Cycle Co., Coventry. The types they are about to turn out are tricycles and quadricycles fitted with De Dion motors.

THE annual general meeting of the Liverpool Self-Propelled Traffic Association will be held on Monday next, the 16th inst., in the Council Room of the Liverpool Chamber of Commerce, B 10 Exchange Buildings, at 12.30 p.m., when the report of the Council will be presented.

THE first number of the *Automobile Magazine*, issued by the United States Industrial Publishing Company, of New York, for October, contains a well written and profusely illustrated article on the recent automobile craze at Newport by Edwin Emerson, jun. Baudry De Saunier, one of the founders of the Automobile Club in France, contributes an article describing the origin and subsequent progress of this club. An entertaining article is Sylvester Baxter's feeling plaint on "How the Horse Runs Amuck," aptly illustrated by one of F. C. Atwood's laughable drawings. The seriousness of the subjects discussed in the technical section is lightened by a special department containing reproductions of the most amusing drawings of automobiles and automobilists published in the leading comical papers of Europe.

## THE McLACHLAN HEAVY OIL MOTOR.

THE accompanying illustration shows the McLachlan horizontal petroleum motor. The makers—the E. A. McLachlan Engine Co., of 14 Holborn Viaduct, E.C.—claim to have produced a heavy oil engine that is in every way a success, the fuel used being ordinary paraffin. The motor is made in both vertical and horizontal forms, and in a variety of sizes ranging from 2½ h.p. up to 7 h.p. For motor-cycles or light cars the Company recommend their vertical engines, Nos. 1 and 5, of 2½ and 2¾ h.p. respectively, which are of the well-known De Dion type. No carburettor is necessary; the oil is supplied by gravitation and is at once vaporized, giving exceptional power to the explosions. The horizontal engines work on the same method, and are made from 2¾ to 7 h.p., with either single or double cylinders according to the power of the engine desired. The driving-weight capacity of the largest size of this pattern engine is one ton. The cost of running these engines is described as being purely nominal, and to drive the above weight the consumption of oil would be about three pints of paraffin per hour (which can be bought at 6d. per gallon), or less than 3d. for one hour's work.



The McLachlan Co. claim that there is hardly any noticeable smell with these heavy oil engines—in fact, none when the car is running—and owing to the special method of vaporising there is no clogging in the cylinder. Simplicity is another feature of these engines, there being only two valves: an automatic admission valve and an exhaust valve controlled by a rocking arm actuated from a small cam shaft. The motor can be fitted with either electric or tube ignition as desired.

In addition to the above engines the McLachlan Co. are manufacturing specialties in electric plants complete, suitable for recharging accumulators, lighting, etc. One of their special lines for country shops is a heavy oil motor-engine and dynamo fixed upon an iron bed 6 ft. long by 2 ft. broad. The plant is capable of lighting up a shop or house with fourteen or sixteen incandescent lights of 16 c.p., or for recharging. The engine runs at 1,500 revolutions per minute; the dynamo giving out 60 volts and from 18 to 20 amperes. The weight of this special outfit is about 11 cwt.

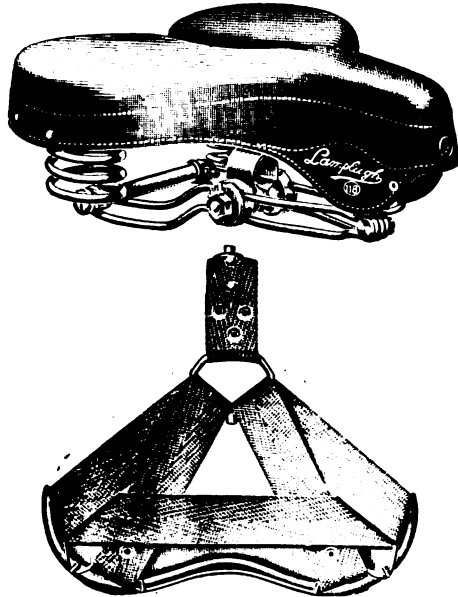
THE *Church Family Newspaper* has an interesting interview with a member of the Automobile Club in which the claims of motor-cars to public consideration and confidence are well brought out.

MESSRS. J. G. & B. S. FERGUSON, bakers, of Boston, Mass., are contemplating the change of their entire delivery service from horses to motors. They have an electric delivery van already in use, and a steam wagon is being built for them.



## THE LAMPLUGH MOTOR-CYCLE SADDLE.

WE illustrate herewith the new motor-cycle saddle which is being put on the market by Messrs. Lamplugh & Co., of 67 Aldersgate Street, London, E.C. The saddle measures 10½ in. across at the broadest part and 10½ in. in length. The cover is made in one piece of leather, and is lined with felt, which encloses the cushions.



The cover is placed over the webbing and riveted on to the frame. As all the support is taken from the webbing the leather is not under tension. The system of webbing-tension, shown in the second illustration gives, it is claimed, a perfectly firm yet flexible support, and the tension is equally distributed. This webbing does not stretch like leather, and, if necessary, it can be re-tensioned by means of the screw in front of the saddle. The springs screw into sheet

metal loops, which are made in the cantle for the purpose. For motor saddles this is claimed as an advantage, as it prevents any chance of the saddle becoming detached from the frame through the nuts loosening. The clip is made of sheet steel, and has two double-grooved surfaces, which prevent the saddle moving out of position after being once screwed up. At the same time it allows of a very close adjustment in tilting.

ACCORDING to New York advices, Mr. A. H. Overman, of the Overman Wheel Company, has started for Europe. He is bringing with him an automobile of the latest model produced by this Company, and will be away indefinitely on business connected with it.

L'AGENCE INDUSTRIELLE D'AUTOMOBILES (Corre, Directeur), 54 Rue de Villiers, Levallois-Perret (Seine), have sent us a copy of their abridged price list, which gives particulars of the Corre motor-tricycles and quadricycles (De Dion motor), De Dion and Renault voituresses, Peugeot cars, etc.

At Coventry, on the 5th inst., Mr. George Du Cros, of the Dunlop Tyre Company, was summoned for neglecting to stop a motor-tricycle he was driving in the city when signalled by the driver of a restless horse. Defendant did not appear, but apologised through his solicitor. The magistrates fined him 10s. and expenses.

WE understand, says the *Kent Argus*, that at an early date the Auto-Motor Express Co., Ltd., will run its first car about the streets of Ramsgate. The Company, after examining a great many different models, have decided that the steam omnibus brought out by Messrs. Coulthard & Co., of Preston, is the most suitable for local requirements.

EARLY on Tuesday morning, as Messrs. Spiers & Pond's steam van was proceeding towards the city depot of the firm along Blackfriars Road, the car became fixed close to the kerb. The driver tried to extricate it, when, according to the daily papers, the steam-pipe burst. The driver was scalded in trying to close the valve, but a further explosion was prevented.

## MINDING A MOTOR-CAR.

MR. CHARLES FRISWELL, of 18 Holborn Viaduct, E.C., was summoned at the City Summons Court on Friday last week for causing a light locomotive to be used on the highway, there not being in charge of the same a person competent to control and direct its use and management. Police-Constable Jenkinson, 454, deposed to finding a motor-car in Moorgate Street with an obstructive crowd round it. He found a boy of thirteen in charge of it, who said he could not manage it. After waiting eight minutes defendant, the owner, came up, and, in answer to witness, said he left the boy to mind it. Defendant said it was an electric motor-vehicle, and the machinery could not have moved while he was away, as he took the key, but it could have been pushed out of the way. There was no danger of it running away. Alderman Samuel Green fined defendant £1 and costs.

## ANOTHER FURIOUS DRIVING CASE.

EDWARD CHILVERS, a motor-car driver, in the employ of Mr. F. Morris, of Lynn, was summoned to Rollesby Petty Sessions last week for furiously driving one of those conveyances at Ormesby. Mr. Clowes prosecuted on behalf of the Cabmen's Protection Association, and Mr. G. H. Lovewell Blake defended. Witnesses gave evidence to the effect that the motor-car was being driven from Yarmouth in the afternoon, when it overtook a cab driven by Edward Bunting, of Yarmouth, and in passing the back hub of the motor-car struck the front wheel of the cab, throwing the horse down. Fined £1 and costs.

## LONDON ELECTRICAL CAB COMPANY, LIMITED.

IN a motion before Mr. Justice Darling on Wednesday last week (London Electrical Cab Company, Limited, v. Bersey) an application was granted, by consent, for an order for the appointment of a receiver with power to act at once. Counsel stated that the gentleman appointed was one who had been selected by the debenture-holders.

## THE NEWCASTLE-UPON-TYNE AND DISTRICT MOTOR-CAR COMPANY, LIMITED.

THE statutory meeting of the shareholders of this Company was held on Monday, Councillor Jacob Daglish, the chairman of the Board, presiding. The Chairman said that the Company was registered on June 10th, 1899. The prospectus was issued on August 3rd, and the Company had practically been formed some two months. The cars were first started at Tynemouth, where the traffic was less than in Newcastle, thus gaining experience both for drivers (who were difficult to get at first) and others. The Company was singularly fortunate in securing the services of Mr. Allison, of Sunderland, as manager, and with an efficient staff the Company is practically able to do the whole of its own repairs. The directors have entered into an arrangement with Mr. Slater for 500 square yards of ground off Barras Bridge, and the Company will erect thereon a corrugated iron building suitable for twenty-five to thirty cars, as well as repairing shops, etc. This is expected to be finished in about two months. The Company received two new cars last week, and two more are due to arrive this week, and so far the two received have given every satisfaction. The directors are satisfied that the demand for motor-cars in Newcastle is increasing. More capital will probably be asked for to purchase cars, as the establishment charges would not be increased by the addition of ten more cars. Mr. S. Benson moved, and Mr. Watson seconded, the re-election of the present directors, who retired according to the articles of association. The meeting concluded with a vote of thanks to the directors.

## HEAVY FINE FOR "SCORCHING."

At Norman Cross, on Tuesday, Mr. J. W. Stocks, of the Ariel Cycle Works, Birmingham, was fined £8 and costs for furiously driving a motor-tricycle on the Great North Road near Peterborough. Superintendent Allen said that Mr. Stocks was pacing a man on a bicycle, and was going at a speed of twenty miles an hour. The magistrates said they were determined to prevent the roads being turned into racecourses.

At the last meeting of the Dover Town Council, an application for a licence for another (the third) steam motor-bus was made by the East Kent Motor-Bus Co., and was referred to the Surveyor for report.

A NEW English-made sparking plug has lately been designed and is being manufactured by Mr. Frank F. Wellington, of 36 St. George's Square, Regent's Park, N.W. As Mr. Wellington has had nine years' experience with porcelain tubes, the new device ought to be a reliable ignition plug. The price is, we understand, very low.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

**FRENCH RACING BOLLÉE**, only been run three months, 4 h.p., geared very high, splendid hill-climber, to seat two persons, front seat detachable; price £70.—Apply, Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W.

**BENZ INTERNATIONAL**, to carry three, beautifully upholstered, very powerful, all latest improvements, in grand order; price £120.—Apply, Frank F. Wellington, as above.

**MOTOR-QUADRICYCLE**, interchangeable to Tricycle, by De Dion and Bouton, very little used, exceptional bargain, in grand running order; price £67 10s.—Apply, Frank F. Wellington, as above.

**MOTOR-WAGONETTE** by Daimler, 5½ h.p., grand carriage, in perfect condition, new tires, repainted and upholstered, to carry four or six, free trials to buyers; price £265.—Apply, Frank F. Wellington, as above.

**MOTOR-WAGONETTE** by Daimler, 5½ h.p., to carry eight passengers besides driver, geared low for hill-climbing, suitable for passenger service, in perfect running order, hardly been used; price £265.—Apply, Frank F. Wellington, as above.

**MORS CAR**, very fast, splendid condition, 8 h.p., to carry six persons; price £250.—Apply, Frank F. Wellington, as above.

**1½ H.P. DE DION TRICYCLES** (two), electric ignition, in first-class order, £34; also Werner Bicycle, in running order, £20.—Apply Frank F. Wellington, as above.

**TWO MOTOR DELIVERY VANS**, in good condition, can be altered into waggonettes; £75 and £125.—Apply Frank F. Wellington, as above.

**WELLINGTON'S MOTOR-CAR REGISTER AND ADVERTISER**, posted free to any address.—Send postcard for copy to Frank F. Wellington, proprietor, 36 St. George's Square, Regent's Park, N.W.

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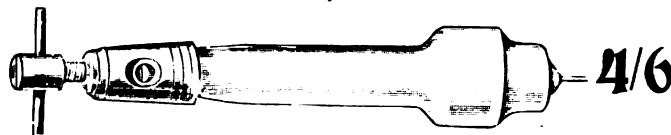
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# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, OCTOBER 20th, 1899.

[No. 33.]

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## COMMENTS.



THOSE responsible for the behaviour of the horses at Windsor which are employed in the service of the royal family have taken the wise course of putting them through a course of instruction with the motor-car. Recognising that the automobile is becoming an increasingly familiar object in Berkshire, Lieutenant Hickey determined to act upon the advice recently given by Captain Langrishe, and train the

horses under his care to the sight of the automobile. Dr. Bruce Porter, an enthusiastic automobilist, of Windsor, was invited to try the nerves of the royal animals. Taking his vehicle to the mews, the horses were ridden or led round the automobile to give them an opportunity for observation. Secondly, Dr. Porter drove his car round the horses, and finally he appears to have run amuck amongst them in a way that would have sent some of the less respectable London cab horses into hysterics. Never did a horse get beyond control during the whole series of experiments, and although the car was made to puff and snort and perform various objectionable feats, the animals expressed no great concern. The least notice of the novelty was taken by a pure bred Arab, whose dignified demeanour demonstrated that manners and blood go together in the equine nature. It is to be hoped that the example of the director of the royal stables will be followed throughout the country. If country jobmasters and 'bus proprietors, etc., would have a motor-car in their yards for a day or two the horses would quickly become accustomed to its presence, and the excitement now felt by some unmannered brutes on seeing a motor-vehicle would no longer lead to accident and danger.

### A Dream of a Horseless City.

ONE of the young men on our staff is a Visionary—with a capital V—and he has asked for publicity for the following: "I hate the din and clatter of our busy streets, the rumbling of heavy wagons along our thoroughfares, and the constant tapping of iron-shod horses upon stone setts or hardwood roadways. To me the odour of the Ludgate Circus area in the summer days is offensive, while I equally dislike the stables—there must be thousands of them in our City—which are the great breeding-ground of flies. Oh! how I long for the day when the swiftly-gliding motor-car will defy the fog and police alike, rendering locomotion a pleasure, and in its almost silent progress do something to bring about that condition of quiet which Daudet thought he realised when in London a few years ago. With the universal adoption of the motor-car and the disuse of the horse for ordinary vehicular traffic, the smell of the wood pavement will not rise so high in summer, and the flies not buzz so monotonously about our ears. Then, Mr. Editor, shall I be glad." So, too, will others, for stripped of its semi-sentimentality the foregoing is useful in calling attention to two great annoyances

experienced as the result of the number of horses now on our streets.

### Punctuality.

To secure the success of motor-car services the punctuality with which they arrive at the starting-point and the regularity with which they call at the advertised stopping-places are alike indispensable. Otherwise disappointment to would-be passengers will develop into disgust, and disgust will lead to loss of patronage. We are led to thus emphasize the point because of a letter from a gentleman at Neath, who complains that the driver of a car which should have stopped at Gnysymardy Road at a certain time did not do so, causing inconvenience to several who had wanted to travel. Every proprietor of such a service should arrange a timetable and regard it as the law of the Medes and Persians. If this is true of the railway and tramway services it should be even more important in the case of a new means of public convenience and conveyance.

### Motor-Vehicles for Transport.

ON the occasion of the garden party given by Sir W. D. Pearson, M.P., at Paddockhurst, Three Bridges, we were able to show the immense advantage possessed by the automobile over horse-drawn vehicles in conveying guests to and from the station—saving considerable expense, and getting everyone away in good time. A correspondent of *To-Day* has also discovered the advantage. He lives six miles from the railway station, a good way up an eminence of no slight gradient, and the transport of visitors and their luggage by the old methods was a matter requiring careful adjustment. "The motor-car," we are told, "has changed all this. It can be sent as often as may be desired, can carry heavy weights, never tires, and does not mind the hill, while the expense is infinitely smaller than that of maintaining two strong horses for the omnibus." It is very clear that the advantages of the motor-car are illimitable.

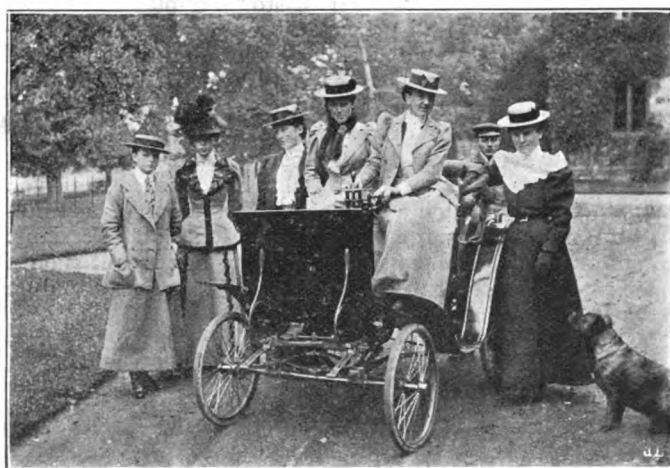
### Motor-Cars in Australia.

IN the last issue to hand of the *Australian Cyclist* there appears a lengthy interview with Mr. Kelburne E. Edge, managing director of the Austral Cycle Agency Proprietary Ltd., Melbourne, in the course of which an interesting reference is made to the question of automobilism and motor-cars in the Antipodes. Mr. Edge's impression is "that it will be a considerable time before there is any profitable business to be done in motor-cars or motor-cycles in Melbourne, as people want definite proof that they have shown themselves successful in this country; and, again, we have to face the fact that motor-cars are operated here under very different circumstances to that which obtains in England or on the Continent. Nearly all the motors being built in England or France are operated by petrol, or, as we call it, gasoline. At present, in Australia this oil can only be obtained in small quantities, and at so higher price that it is almost prohibitive. Another point against the importation

of motor-vehicles is the high cost of freight and duty, which, added to the original figures, makes the price very steep. Our Customs demand a duty of 30 per cent. on the motor portion of any motor-carriage or cycle, and the balance is subject to 25 per cent. if a carriage, or 10 per cent. if a cycle. I have been surprised that the G.P.O. authorities and other large concerns to whom cheapness of transport is a matter of great importance have not followed the example of many of the great home firms and adopted motor-cars in place of the lumbering horse-drawn vehicle. However, I think there will be a number put into use in Melbourne during the next years."

#### A Lady Automobilist.

AMONG lady motorists Mrs. Kennard is rapidly coming to the front, achieving fame as the driver of a motor-car. She has previously won distinction as a novelist. Mrs. Kennard lives in view of the hunting fields of Northamptonshire and Leicestershire, and she is as keen a sportswoman as any in the neighbourhood. She is the second daughter of Mr. Samuel Laing, the late chairman of



the Brighton Railway, and all her novels ("Wedded to Sport," "Straight as a Die," "Twilight Tales," etc.) are of a sporting character, and this fact makes the lady's accession to the ranks of automobilists the more noteworthy. As is the case with several leading horsemen, she recognises that there is nothing incongruous in owning horses and driving her own motor-car—whose praise she sings in our correspondence columns this week. In the accompanying illustration Mrs. Kennard is seen mounted on her car, ready for a run.

#### Motor-Cars in Surrey.

At the Surrey Quarter Sessions, at Kingston-on-Thames, on Tuesday, the Standing Joint Committee reported that complaints had been received by them of the rate at which motor-cars were driven through the various parts of the county. As they believed the complaints to be well founded, the committee had sent a communication to the Local Government Board to the effect that in their opinion it was desirable that a by-law should be forthwith made requiring every motor-car to carry a denoting mark or number so placed upon the vehicle as to be at all times easily seen by pedestrians. The action of the committee was confirmed.

#### Charging Stations for Electrical Vehicles.

As the use of electricity extends, many new features of interest will be found along our country roads, and the development of electrical vehicles may completely revive the old coaching roads. At various points there will be opportunities for the erection of comfortable hotels, not only

with housing accommodation for automobiles, but also in conjunction with charging stations. Chicago is the first American city to possess a charging plant for its electrical cabs and other vehicles. Livery stables in Michigan Avenue, Chicago, are to be remodelled for the purpose by the Illinois Electric Vehicle Transportation Company, and current will be obtained from the Chicago Edison Company. Machinery will be installed for handling the battery trays, so that a set of exhausted cells can be taken from a cab and replaced by a fresh battery in about two minutes. The operation of charging the cells will be going on constantly, so that charged battery sets can be had at any time. The electric stations in this country should, remarks our contemporary, *Industries and Iron*, bear the foregoing development in mind.

#### The Automobile Club Trials.

We are informed that the committee of the Automobile Club, of Whitehall Court, S.W., have made arrangements by which manufacturers, authorised agents, and owners may at any time submit motor vehicles for trial and certificate as to (a) hill-climbing speed, (b) 100-mile record, (c) speed of motor-cycles on a racing track. A small fee to cover expenses of the trials and certificates will be charged. The hill-climbing trials and 100-mile trials may be made in the neighbourhood of London or in the Coventry and Birmingham districts. As regards speed on the road, no pace beyond the legal limit will be permitted or recognised.

#### Brougham v. Motor-Quadricycle.

BEFORE Judge Addison in the Southwark County Court on Tuesday a leading London jobmaster obtained a verdict against the London Autocar Company, in which the difficulties of automobilists were fully revealed. As will be seen from the special report in another page of the present issue, on the side of the jobmaster were a trio of horsey witnesses—his driver, a cabman, and a 'bus driver—backed up by a policeman, while the driver of the quadricycle which got into difficulties could only call his passenger, and as the plaintiff's witnesses declared they had seen the accident and those of the defendant company had not, the former won the case. It was agreed that the quadricycle—described by one of the counsel engaged as a "four-wheeled tricycle"—was under the brougham, and the question was, How did it get there? We should have been pleased to have heard from Judge Addison his reason for coming to the conclusion that it was all the fault of the motor-cycle. Expert evidence was to the contrary; the opinion of those who saw the accident exonerated the brougham. Under the circumstances, the most satisfactory ending would have been for each party to have paid for the repairs to his own vehicle, but that the London Autocar Company should have to pay both bills seems contrary to common sense.

#### The Speed of Motor-Cars in Rural Districts.

THE question of the speed of motor-cars in rural districts came up at a meeting of the Yeovil District Council last week, when the Rev. W. D. H. Armstrong moved "That the Local Government Board be asked to revise their rules regulating motor-car traffic in rural districts, so that the danger to which drivers and occupants of carriages are now exposed in consequence of this traffic may be minimised." The rev. gentleman urged the importance of the resolution, remarking that motor-cars were apt to come very suddenly upon the pedestrian. He would specially ask the Council to draw the attention of the Local Government Board to the necessity of giving warning on the part of the drivers when within 200 yards of a *pedestrian* or vehicle, and he considered the speed of twelve miles an hour excessive; ten miles was sufficient. After some discussion the resolution was amended to read "That it be desirable to have the

rules revised." The resolution was then adopted, and a committee of three appointed to draw up the letter to the Local Government Board. We can hardly believe that the gentleman was serious in his suggestion that the hooter should be sounded when within 200 yards of a pedestrian. If he is, and the Local Government Board adopts the recommendation, there will be room for some one to devise a continuous-sounding hooter, driven, say, off the motor-shaft. The probability of such an arrangement being necessary is, however, very remote; not only so, but it is altogether unnecessary and highly undesirable.

#### The Progress of Automobility in Scotland.

OUR correspondent "Brown Heather" keeps our readers well posted regarding the progress that is being made in connection with the adoption of motor-cars in Scotland. If further proof of this progress be required it can be found in a letter we have received this week from Mr. Percy Richardson, of the Daimler Motor Co., Ltd., an extract of which we give below. Mr. Richardson has just completed a business tour through Scotland, and gives a couple of instances to show how the industry is developing. The first case is that of the Edinburgh Autocar Co. This Company have been running eighteen cars since the beginning of the year in competition with the tramways in Edinburgh at



penny fares, and also letting them out for private parties. "They have made extensive experiments, both from a profit-earning point of view and also to find out the most suitable car for their purpose, with the result that I had the pleasure of booking an order from them for twenty cars, seventeen of which are to be ten-seated wagonettes with detachable light wood covers, fitted with glass windows, a photograph of which I enclose. These cars are for street service." The Company have also purchased a Daimler "Universal" sporting car, adaptable to seat two, four, or eight persons, for private hiring, and also a Daimler 12-b.h.p. car to seat sixteen persons, which they intend to utilise for public and private work. The second case instanced by Mr. Richardson is that of the Caledonian Motor-Car and Cycle Co., of Aberdeen, from whom he secured an order for six Daimler wagonettes to seat eight persons.

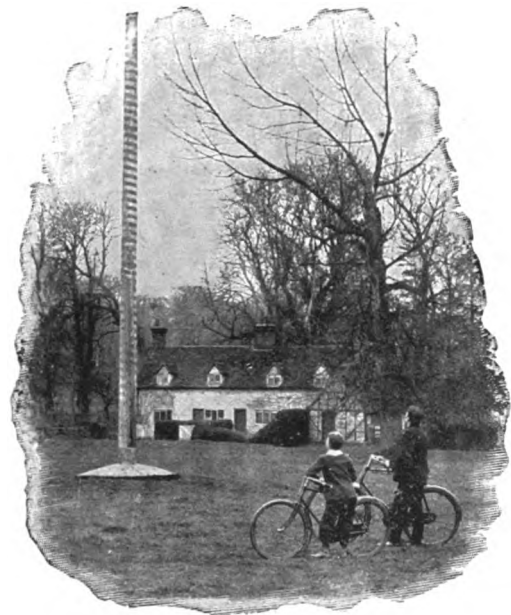
#### Maps for Automobilists.

THE Board of Agriculture notify us that the Ordnance Survey are issuing a new series of special folding pocket maps for certain towns and country around on the scale of one inch to the mile. The maps, which are printed on thin tough paper in a cover, are not only useful for general topographical purposes, but should also prove serviceable to

motorists, cyclists, and pedestrians, since they show all the roads in colour, indicating their character and whether metalled or not, also footpaths, hills, rivers, towns, villages, railway stations, and local boundaries.

#### A Short Run in Bedfordshire.

LAST week end we had the pleasure of a short run in company with Mr. Dan Albone, of Biggleswade, on his little "Victoria Combination" car. The morning was bright and fine, and leaving the Ivel Hotel we first visited the quaint old village of Ickwell, on whose green there stands the curious Maypole depicted in the accompanying illustration. A few miles further we came to the model village of Warden, where the cottages are in marked contrast with



those at Ickwell. The little "Victoria Combination" car gave Mr. Albone some slight trouble when first he acquired it, more particularly as regards the manœuvring of the variable speed gear, but he is now fully acquainted with the method of controlling the vehicle, and in his hands, on the short ride above mentioned, it ran splendidly, a speed of twenty miles per hour on the good roads of Bedfordshire being easily attainable.

#### The Albone Motor-car.

WHILE at Biggleswade we had an opportunity of inspecting the new car on the construction of which Mr. Albone has for some time been engaged. The vehicle takes the form of a four-seated *vis-à-vis*, the body being entirely independent of the frame. There are numerous special features in the new car, particularly as regards the construction of the frame and also the arrangement of the motor and transmission mechanism. As soon as the vehicle is completed we hope to be able to publish a description of it, with illustrations.

#### The Identification of Motor-Cars.

THE Standing Joint Committee of the Surrey County Council has sent us a copy of the letter it has addressed to the Local Government Board urging that regulations should be issued providing for the more easy identification of light locomotives. The Committee refers to the increased number of motor-cars and cycles and to the complaints it has received of the undue speed at which many of them are driven, and expresses the opinion that the time has arrived for some regulation to be made as to a denoting mark or number upon all light locomotives, so placed upon the vehicle as to be at all times



easily legible. Appended to the letter are a series of extracts from letters received from the chief constables and superintendents of police in the neighbouring counties and boroughs in reply to a circular sent by the Chief Constable of Surrey requesting an expression of opinion on the matter; these are practically unanimous as to the advisability of an addition to the regulations in the sense indicated.

#### The Proposed Ladies' Automobile Club.

It is this evening that the meeting takes place at Lady Harberton's residence to consider the proposal to form a Ladies' Automobile Club. From a letter we have just received from Miss N. G. Bacon, the proceedings promise to be of an interesting character, for in addition to the consideration of the question of forming an Automobile Club for ladies, three short papers are to be read—one by Mrs. Bazalgette on "Lady Motorists," one by Miss Clara Fazan on "Reformation of Horseless Vehicles," and one by Miss Bacon on "Women and Automobiles." The proposal appears to be



THE "CHAUFFEUR'S" WINTER COSTUME—A FRENCH SUGGESTION  
FROM *L'Illustration*.

meeting with approval, as favourable letters have been received from Sir David Salomons, Sir Francis and Lady Jeune, the Dowager Duchess d'Uzes, Madame Sarah Grand, Mr. Hiram S. Maxim, Mr. Henry Cunynghame, Mrs. Jacob Bright, Professor C. Vernon Boys, Miss Frances Lord, president of Bond of Union, who owns and drives a car; Miss Goodrich-Freer, late secretary Swanley Horticultural College, who last summer went on a tour in Northern Highlands, with six other people, in a motor-car; Miss Emily Janes, editor of "Englishwoman's Year Book"; Mr. J. K. Starley, Mr. R. W. Buttemer, and Mr. F. H. Bowman, D.Sc., F.R.S., whose eldest daughter drives his car.

MESSRS. RENNIE AND PROSSER, LIMITED, Mitchell Street, have been appointed sole agents for Glasgow and district for Royal Enfield motor-tricycles and quadricycles.

## A LARGE GERMAN ELECTRICAL OMNIBUS.

IN our last issue we illustrated the large petroleum-spirit omnibus which has lately been put in service in London. Through the courtesy of the builders, Messrs. Lange and Gutzeit, of 22 and 23 Frankfurter Allée, Berlin, O., we are able to give herewith an illustration of a large electrical omnibus they have lately constructed for the Neuer Berliner Omnibus Gesellschaft. The vehicle has accommodation for twenty-eight persons, including the driver—two on the front platform, twelve inside, and fourteen outside. It is driven by two 4-h.p. electro-motors, geared by large spur wheels to the rear axle. The electrical energy is supplied by a battery of Tudor accumulators slung in a box underneath the body of the car. Unfortunately, we are unable to give the number or electrical capacity of the accumulators, but the makers inform us that a run of 12 kilometres can be made on one charge and that the battery can be recharged in a very short space of time. The vehicle is provided with both electrical and mechanical brakes, which can pull the vehicle up in a very short distance, even when travelling at full speed. The steering is effected by a vertical hand wheel connected with the front road wheels. The 'bus has, we learn, been in use in the German capital for over a month, and has, so the makers inform us, given every satisfaction. Messrs. Lange and Gutzeit are at present engaged on the construction of a 'bus on similar mechanical lines but having no outside seats. It will have accommodation for eighteen passengers, and is intended for service in small towns.

## THE HEAVY MOTOR-VEHICLE TRIALS IN FRANCE.

(From Our Own Correspondent.)

I AM now able to supplement my remarks of last week *à propos* of the recent heavy automobile trials at Versailles by means of various data relating to the daily performances of each competing vehicle. In the first instance I would remind English readers that the two routes, known as B and C, over which the trials were made, measured respectively 46 kilometres 500 metres and 66 kilometres 500 metres, both embodying a fair amount of hilly country. Taking the competitors in order the first was:—

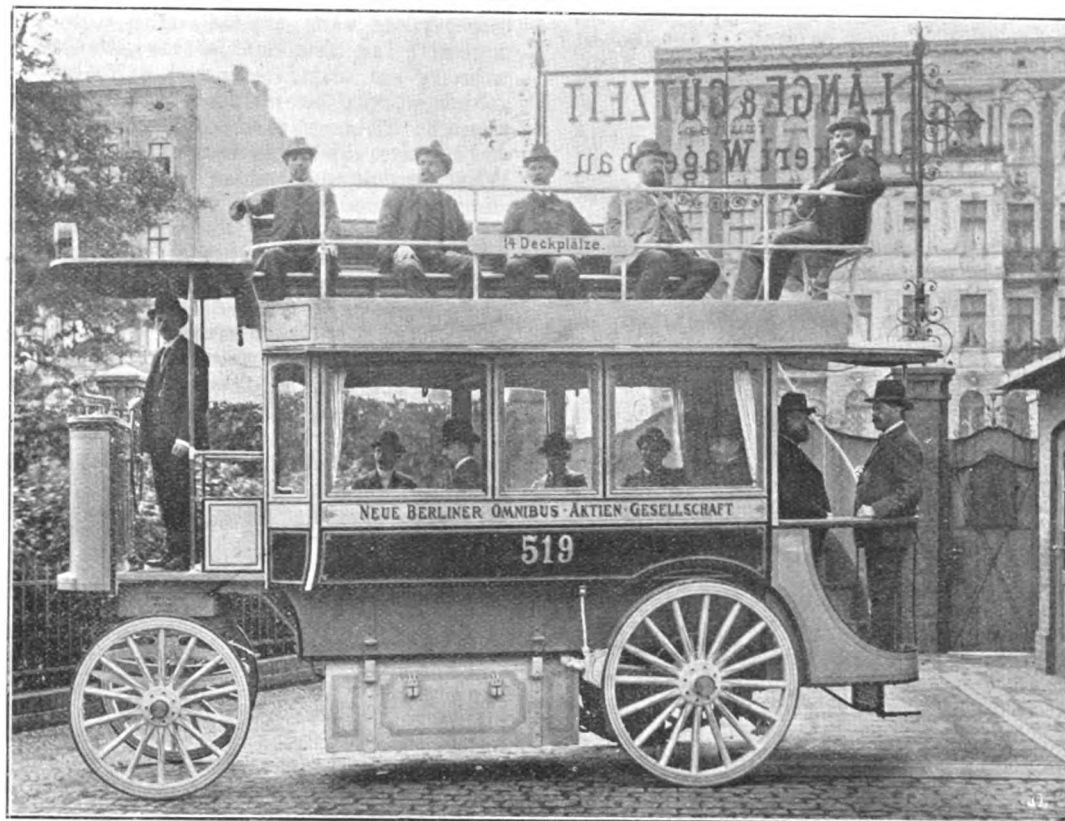
(No. 1).—KRIEGER ELECTRIC DELIVERY VAN, which made the following record:—First day: started on route B at 11.33 a.m. and returned at 11 p.m., having found it necessary to recharge once *en route*. Second day: started on route B at 10.41 a.m. Third day: did not start, owing to slight accident sustained previous evening. Fourth day: started on route B at 9.4 a.m. and returned at 3.16 p.m.; time occupied in ascending the hill of Pecq, 4 minutes. Fifth day: started on route C at 9.25 a.m. and returned at 6.27 p.m.; delayed two hours at Cernay, and two hours at Gif. Sixth day: started on route C at 9.23 a.m. and returned at 6 p.m.

(No. 2).—JENATZY ELECTRIC DELIVERY VAN.—First day: started on route B at 9.26 a.m.; two kilometres from start an axle was "seized" and vehicle returned to Paris for repairs. Second day: started on route B at 9.11 a.m., returned at 2.32 p.m. Third day: started on route C at 8.50 a.m. Fourth day: started on route B at 9.41 a.m. and returned at 3.14½ p.m.; time occupied in ascending the hill of Pecq 3 m. 18 s. Fifth day: started on route C at 9.9 a.m. and returned at 3.43 p.m. Sixth day: started on route C at 9.12 a.m. and returned at 4.15 p.m.

(No. 3).—DE DION 30-H.P. STEAM OMNIBUS.—First day: started on route C at 9.32 a.m. and returned at 3.44 p.m. Second day: started on route B at 9.6 a.m. and returned at 12.31 p.m. Third day: started on route C at 9.4 a.m. and returned at 2.36 p.m. Fourth day: started on route B at 9.6 a.m. and returned at 2.27 p.m.; time

## A Large German Electrical Omnibus.

(For description see page 520.)



occupied in ascending the hill at Pecq 4 m. 20 s. Fifth day: started on route C at 8.56 a.m. and returned at 2.53 p.m. Sixth day: started on route B at 9 a.m. and returned at 12 p.m.

(No. 4).—DE DION 25-H.P. STEAM OMNIBUS.—Did not compete, as the recent strike of workmen prevented the vehicle being finished in time.

(No. 5).—DE DION 25-H.P. STEAM LORRY.—First day: started on route B at 9.36 a.m. and returned at 3.12 p.m. Second day: started on route C at 8.33 a.m. and returned at 3.23 p.m. Third day: started on route B at 8.37 a.m. and returned at 1.42 p.m. Fourth day: started on route B at 8.45 a.m. and returned at 2.39 p.m.; time occupied in ascending the hill at Pecq 4 m. 20 s. Fifth day: started on route C at 8.43 a.m.; on the hill of Vaumussien met with a slight accident owing to mistake by driver. Sixth day: started on route C at 9.19 a.m. and returned at 4.19 p.m.

(No. 6).—DE DION 50-H.P. TRACTOR LORRY.—First day: started on route B at 10.16 a.m.; broke down, and abandoned competition.

(No. 7).—PANHARD 12-H.P. PETROL OMNIBUS.—First day: started on route C at 9.59 a.m. and returned at 6.20 p.m. Second day: started on route B at 9.10 a.m. and returned at 3.11 p.m. Third day: started on route C at 8.47 a.m. and returned at 2.17 p.m. Fourth day: started on route B at 9.2 a.m. and returned at 3.16 p.m.; time occupied in ascending the hill of Pecq, 6 m. 55 s. Fifth day: started on route C at 9.6 a.m. and returned at 3.11 p.m. Sixth day: started on route B at 9.15 a.m. and returned at 2.37 p.m.

(No. 8).—DIETRICH 9-H.P. PETROL LORRY.—First, second, and third days: did not run. Fourth day: started on route B at 9.10 a.m. and returned at 3.30 p.m.; time occupied in ascending the hill of Pecq, 12 m. 50 s. Fifth day: started on route C at 9.7 a.m. and returned at 3.27 p.m.

Sixth day: started on route C at 8.53 a.m. and returned at 4.46 p.m.

(No. 9).—DIETRICH 9-H.P. PETROL LORRY.—First day: started on route B at 9.13 a.m. and returned at 4.52 p.m. Second day: started on route C at 8.31 a.m. and returned at 4.5 p.m. Third day: did not start owing to absence of mechanic. Fourth day: started on route B at 8.45 a.m. and returned at 3.25 p.m.; time occupied in ascending hill of Pecq, 12 m. 50 s. Fifth day: started on route C at 9.6 a.m. and returned at 4.17 p.m. Sixth day: started on route C at 8.30 a.m. and returned at 4.27 p.m.

(No. 10).—CHABOCHE 15-H.P. STEAM DELIVERY VAN.—First day: did not run. Second day: started on route B at 10 a.m.; broke down, and abandoned competition.

(No. 11).—PURREY 30-H.P. STEAM LORRY.—First, second and third days: did not run. Fourth day: started on route B at 9.18 a.m. and returned at 9 p.m. Fifth day: started on route C at 9.45 a.m. Sixth day: started on route C at 9.35 a.m.

The indifferent display made by one or two of the competing vehicles was attributable to their not having been properly tested previous to these trials, for which they had been hastily completed. The official figures and results of the tests are not likely to be issued for some time to come, and until their production it is not possible to gauge the merits of the competing cars.

WE learn that in addition to supplying "Star" motor-cars complete, the Star Motor Co., of Wolverhampton are now in a position to supply the same without "body," as also all the various parts and accessories comprised in the same such as axles, wheels, tanks, springs, silencers, etc. The company are also arranging to undertake repairing, overhauling, and repainting, etc., of any type of motor-car.

## MIDLAND MOTOR NOTES.

By "HERCULES."

Motor-Cars  
at  
Leicester.

LAST week I referred to the proposal of the original promoters of the Leicester Motor-Car Company, Limited, to extend their operations by the introduction of fresh capital. I am glad to say that the plain facts adduced as to the working of the cars and the anticipations of future success have caught on with the public, who have faith in the undertaking, not only as a good investment but as a popular public institution. Progressive as Leicester is as a centre of commerce it is greatly behind the times in its 'bus and tram service. The patience of the populace has been long-suffering in this respect, though now and again a cry of indignation has been raised with the view of quickening the minds of the Tramways Company to a keener recognition of their obligations to those whom they had undertaken to serve. The apathy of the tramway people promises at last to receive its just reward, for I understand that the new project has been taken up with zest, and that the allotment will take place in a few days. It may be safely concluded, therefore, that in a short time Leicester will be in possession of an efficient motor-car service for the conveyance of passengers not only to the outlying suburbs but from point to point in the very centre of the town. In other words, there is to be a determined opposition to the present slow and inefficient 'bus and tram service, and for this purpose the Motor-Car Company will introduce the well-known "Lifu" steam 'bus. Several experimental trials have already been run, and they have given great satisfaction both as regards speed and comfort. The introduction of this service into a large town like Leicester will no doubt popularise motoring in the neighbourhood. Already one doctor has secured a splendid advertisement by the adoption of a neat little car, and there is no doubt that in the near future this example will be followed not only by the medical profession but by tradesmen and others who at present have to rely on the slow and yet costly work of the horse.

A New Tire and  
Wheel-Making  
Concern.

MR. J. J. HART, of the "Fleet" Carriage and Motor-Wheel Works Co., Fleet-street, Coventry, has resigned his position with one of the leading motor manufacturing companies in Coventry, and has commenced business on his own account. He tells me that he has already more work on hand than he can comfortably deal with, and has engaged a number of men who are experienced in the trade. His chief attention is devoted to the supplying of tires of all descriptions for motors, and to building wheels for the motor trade.

## "On the Road."

THE Beeston Motor Co., Ltd., Coventry, have arranged for their traveller, Mr. E. A. Job, to do his journeys on one of their latest pattern Beeston motor-tricycles, with a 2½-h.p. motor fitted with electric ignition. This will give the agents an opportunity of seeing a motor-tricycle undergoing the wear and tear of every-day usage.

Motor "Body"  
Building in  
Coventry.

THE Burton Carriage Works, Fleet Street, Coventry, have three motor-wagonettes with canopy attachment in course of completion, and are smart in appearance. Mr. Burton's speciality is the finishing of rough bodies—that is, trimming, painting, etc. He also goes in for carriage designing, and is doing work for the larger motor firms in Coventry. The business has increased so rapidly during the last few months that Mr. Burton is looking out for larger premises.

A New Car  
at Coventry.

A FRIEND of mine tells me that a good deal of attention was devoted to a four-wheeled motor-carriage which made its appearance in the Coventry streets at the beginning of the week. Coventry folk have by this time become accustomed to automobiles of all descriptions—from the heavy trade vans to the light and elegantly constructed dog-cart; but this one, he says, was something out of the ordinary—at least, it seemed so to him; and so when the vehicle stopped he was one of the small crowd that gathered around. There was something of the landau type about it, and his first idea was that it had been built for pleasure. What struck him most was the queer looking arrangement attached to the carriage at the rear. To describe it gave him no end of trouble. I gathered that the engines were concealed inside this arrangement, which he said had the appearance of a huge meat safe, painted white. The body of the vehicle vibrated with each throb of the engine, and he wanted to know how there could be any pleasure to be seated directly over such a contrivance. I told him that the vibration and noise of the motor would be almost imperceptible to the riders as soon as the vehicle was on the move, and he afterwards told me that he was himself greatly surprised at the ease and smoothness with which the landau made its way along the street.

A Novelty  
in Tires.

ONE thing which appealed to my friend was the happy idea which seemed to have struck those in charge when having to deal with a refractory tire. One has often seen the rubber of a solid or cushion-tired bicycle bound to the rim with string, and bandaged pneumatic tires are not unknown; but the tire of this motor-carriage was actually bound on with galvanized wire! The wire was made up of several strands, and about the thickness of a lead pencil. One end was attached to the spoke of the wheel, and the remainder bound the rim and tire together. The wire had found its own depth in the rubber, and effectively answered the purpose intended, though it could not be said that the appearance of the wheel was improved.

THE dissolution is announced of the Société des Automobiles et Automobilettes "Rheda" of Paris.

ACCORDING to the last Australian mail, Mr. E. W. Rudd, of the Australian Cycle and Motor Co., Ltd., Melbourne has just received a Pennington motor-car.

SIR FRANCIS and LADY JEUNE have returned from their motor-car tour to their Berkshire seat, Arlington Manor, near Newbury. They visited Coventry, Birmingham, Malvern, Gloucester, Hereford, Monmouth, Bristol, Wells, and Bath.

FROM all we hear the Motor-Car Club will be very well supported in their run to Brighton on November 13th. They are on this occasion inaugurating a novelty which the public will, we think, not be slow to appreciate. They will issue a programme giving some details of the cars and the names of the drivers. In order that this may be as correct as possible all owners of cars proposing to attend the fixture are requested to send full details of their cars to the hon. sec. of the Club without delay.

THE Cycle and Motor Company, Limited, has been registered with a capital of £60,000, in £1 shares, to acquire the business of the John Griffiths Cycle Corporation, Ltd. (incorporated in 1896), to adopt an agreement with John Gillespie, and to carry on the business of manufacturers of wholesale and retail dealers in and agents for cycles, bicycles, tricycles, velocipedes, carriages, sewing machines, motors, motor-vehicles, etc. The number of directors is not to be less than five nor more than seven; the first are: Harvey Du Cros, jun., Charles Sangster, Robert Burns, P. J. Maloney, John W. Stocks, and George Tuke.

## CORRESPONDENCE.



TO THE EDITOR OF *The Motor-Car Journal*.

### IMPROVEMENTS IN DAIMLER CARS.

SIR,—I think the following paragraph will interest those of your readers who own Daimler cars. I have fitted a very successful cooler to my vehicle; it is arranged in such a manner as to improve the appearance of the car. No pump or fan is required; the quantity of water carried is under two gallons instead of twenty, and this quantity will last many days. As I have several small leaks I cannot say exactly, but I have driven sixty miles and only required a quarter of a pint of water to fill up. The power wasted in driving a pump 300 strokes per minute is considerable, and with the saving in weight effected by dispensing with the pump and fitting a cooler such as I have adopted, and a reduced temperature in the cylinders, I think any 5½-h.p. Daimler would be improved quite one mile per hour. The relief about the pump is very considerable, as before I was never certain when it would stop. Also I have fitted a starter from the seat that makes it quite as easy to start from the seat as with the handle, and much safer, as a kick-back can do no harm. I now always start from seat in preference to the handle. I hope to drive a car to Sheen House fitted with both these improvements on November 14th.

Lowestoft,  
October 14th, 1899.

Yours truly,  
E. ESTCOURT.

### INFORMATION WANTED.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Allow me to thank both you and "Brown Heather" for the information given in your last publication in reply to my letter to you in the issue of September 29th. The car I saw would no doubt be the hooded Daimler that "Brown Heather" refers to. I could not say that it was "phenomenally quiet," as I am too deaf to speak as to that point, but it was running very sweetly, and at a good pace, though up a moderate incline where I met it. I shall no doubt be able to get further information about it from the Daimler Co. The absence of fumes or any smell of oil, so far as I noticed, was what led me to infer that it was probably driven by electricity.

Perhaps you will allow me to ask motor manufacturing companies why they don't make a machine to act as horses, and to draw an ordinary carriage.

Edinburgh,  
October 16th, 1899.

Yours truly,  
J. R.

### EXPERIENCES OF A NOVICE IN SEARCH OF A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In June of this year my husband said he was prepared to buy a motor-car if I could find a suitable vehicle. Knowing absolutely nothing of my subject, I plunged into it with all the ardour of an enthusiast. I went to almost every dépôt in London, and from a mass of miscellaneous counsel gradually arrived at the following conclusions. Practically there were in this country two systems: the Daimler and the Benz. I saw carriages of the former make, and came to the conclusion that they were too cumbersome and intricate for a beginner. The cog-wheel transmission was likely to give trouble, and proved noisy in the running. After seeing a variety of other cars, I gradually arrived at the decision that there was nothing on the market so suitable to a novice and for real hard wear as Messrs. Hewetsons' Ideal Benz. But I wished to do nothing rash, and although I found everyone was willing to give a trial—if they sold a car—my object was to first test the car thoroughly before purchasing. This was not easily achieved. Once more I prosecuted an exhaustive search, and eventually succeeded in finding a teacher who owned a Benz Ideal and was willing to take me for fifty-mile

runs for a week for £1 a day. Although the terms seemed high, I decided it would be money wisely spent. I had no cause to regret the outlay, for not only was I taught the rudiments of driving but soon ascertained the exact capabilities of the car on all kinds of gradients. We went to Ripley, Guildford, Edenbridge, St. Albans, Oxted, etc. In the end we purchased a '99 Ideal Benz. For ladies I can conceive of no more perfect carriage. That very soon we shall see ladies driving their own cars, as they do in France, is my firm belief. To learn the rudiments is comparatively easy—most novices can drive a little alone at the second lesson; but to have complete control of the car and to know what to do in all circumstances requires both time and experience. This is where, I think, many of the manuals are misleading. The great snare, which leads to the undoing of the beginner, is pace. The high speed is so seductive that they are inclined to use it before they have learnt the art of suddenly stopping and of going down hill steadily. The faster the pace, too, the more difficult becomes the steering. Altogether, caution in the first stages is essential; but given ordinary care there is no reason why a woman should not steer a light car as safely as a man. No one who has not tried driving can have an idea of the fascination it possesses. No matter how long the drive we do not know a single moment of *ennui*. This is essentially a hunting country, and a certain prejudice exists against the motor-car, but I have already taken several of my friends for drives, and none have returned without their ideas on the subject undergoing a complete revolution. They have all been delighted and only the price deters them from becoming ardent autocarists. Truly it is a fascinating sport.

Yours faithfully,  
The Barn, Market Harboro',  
October 16th, 1899. MARY E. KENNARD,

### THE VALLÉE RACING CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The Vallée racing car described in your last issue seems to be nothing but a glorified Bollée as to transmission gear, minus the—as I thought—indispensable adjunct to a petrol motor: variable speed or, more properly, power gear. Why M. Vallée's 16-h.p. engine can run satisfactorily without it when similar powered motors by, say, Panhard & Co. cannot, I am at a loss to understand.

The motor speed, of course, is variable, but with it, equally of course, the power. Suppose the car has to be brought up on a steep hill for any reason: I see no means of starting her again. Possibly in such a case the variable gear is supplied by the "mechanicien" with a pinch bar!

Ross, Co. Galway,  
October 16th, 1899. Yours truly,  
C. P. DAWSON.

### THE CINEMATOGRAPH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—This week we have again motored over virgin ground, and as a natural sequence have caused no little sensation, especially amongst the lead miners at Middleton-in-Teesdale. We started on Thursday morning from Kirkby Stephen, Westmoreland, for Bowes, Yorkshire, and experienced considerable discomfort for the whole of the ride from incessant rain; and, travelling over some of the bleakest country we have yet negotiated, we never for a minute obtained any shelter. We had to climb the mountain known as Stainmore and it was all hard pulling for nearly nine miles. Bowes, the stopping-place for the night was duly reached. The room, which was of rather small dimensions, was quite full, and the entertainment a great success. From Bowes to Barnard Castle, only four miles and nearly all downhill until we crossed the Tees from Yorkshire into Durham, was done in 16 m. Just on entering the town we had to climb the Barnard Castle bank, up which we are told

no motor-car has been before without requiring a little pushing from behind. Mr. Lax and myself dismounted to ease the weight a little, but Mr. Sinclair remained at the helm, and with our full load on up we went, to the evident admiration of a crowd of onlookers.

On our next journey we found that something was wrong with the gear, for the cogs on the nine and twelve mile speeds would not engage, and we were compelled to take it easy and work on the three and six mile speeds, but as it was all up hill to Middleton-in-Teesdale this did not make any material difference, and ours being the first car ever seen amongst the lead mines almost everybody in the place turned out at the sounding of the horn. Next morning we had the gear out and examined it, and found that the teeth on the cogs of the nine and twelve speeds were very much worn; and I could see that I must at once arrange to have new gearing placed in the car.

I am quite confident that one gentleman in Middleton-in-Teesdale, having seen our car, is now determined to become the possessor of one for himself, and I gave him all the information I could. I hear the Daimler representative is now in Bishop Auckland and I have wired him to come over here and see my gear and give me his advice, for I can see that until I get new gearing in we must be content to do our next few journeys on the slow speeds.

I am, Sir, yours, etc.,  
T. J. WEST,  
Cotherstone, *Manager of the Modern Marvel*  
October 18th, 1899. *Co. (Ltd.), of Edinburgh.*

### THE BORDEAUX-BIARRITZ RACE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having received a photo taken of my car at Biarritz after the finish of the race, I am sending you one. I have also received exact "classement" of the competitors, which gives the following results:—

#### TOURIST SECTION.

| CLASS A.                      |  | 3rd Series.—                      |  |
|-------------------------------|--|-----------------------------------|--|
| 1st Series.—                  |  | Winner, Versein, 15h. 6m.         |  |
| Winner, H. Lafitte, 7h. 17m.  |  |                                   |  |
| 2nd Series.—                  |  | CLASS C.                          |  |
| Winner, L. Sanson, 7h. 53m.   |  | 1st Series.—                      |  |
| 2nd., Barbereau, 8h. 46m. 1s. |  | Winner, Cuzacq, 7h. 35m.          |  |
| CLASS B.                      |  | 2nd, Geo, 9h. 9m.                 |  |
| 1st Series.—                  |  | 3rd, Conderc, 12h. 35m.           |  |
| Winner, Knapp, 8h. 48m.       |  | 4th, Gintrac, 13h. 3m.            |  |
| 2nd Series.—                  |  | 2nd Series.—                      |  |
| Winner, Rolls, 6h. 44m.       |  | Winner, Cornilleau, 9h. 13m. 30s. |  |
| 2nd, Calvet, 7h. 15m. 42s.    |  | 2nd., Dubois, 9h. 51m.            |  |
| 3rd, Barrow, 7h. 51m. 5s.     |  | 3rd, Legendre, 10h. 1m.           |  |
| 4th, Fourcade, 10h. 27m.      |  | 4th., Bertain, 11h. 52m.          |  |

By this you will see that our car not only won in her own category but also beat the winners of all the other six categories, viz., cars above and below 6 h.p. carrying two, four and six persons, and also the tricycles, which therefore shows her up well especially as there were several Peugeot and other cars of 8, 10 and 15 h.p. in the tourist classes.

The actual arrivals at Biarritz, taking speed and tourist classes together, were as follows:—

|                          |                      |              |
|--------------------------|----------------------|--------------|
| 11 Levegh .. Vitesse..   | 16-h.p. Mors ..      | 2 p.m.       |
| 8 Antony .. " ..         | " ..                 | 2.4          |
| 22 Bertin .. " ..        | 3½-h.p. Trike ..     | 2.10         |
| 7 Petit .. " ..          | 15-h.p. Peugeot ..   | 2.32 15secs. |
| 66 Rolls .. Tourist      | 8-h.p. Panhard ..    | 2.47 30secs. |
| 62 Calvet .. " ..        | 10-h.p. Peugeot ..   | 2.57         |
| 10 Koechlin .. Vitesse.. | 15-h.p. " ..         | 2.59         |
| 83 Cuzacq .. Tourist     | 2½-h.p. Trike ..     | 3.1 30secs.  |
| 12 Broc .. Vitesse..     | 16-h.p. Mors ..      | 3.7 10secs.  |
| 6 Georges .. " ..        | " ..                 | " ..         |
| 71 Lafitte .. Tourist    | 6-h.p. Panhard ..    | 3.15 30secs. |
| 76 Barbereau .. " ..     | 6½-h.p. Dietrich ..  | 3.21         |
| 92 Cornilleau .. " ..    | Voiturette ..        | 3.25         |
| 64 Barrow .. " ..        | 9-h.p. Dietrich ..   | 3.27         |
| 77 Sansom .. " ..        | 8-h.p. Peugeot ..    | 3.29         |
| 9 Schneider .. Vitesse.. | Rochet Schneider ..  | 3.57 10secs. |
| 41 Thery .. " ..         | 8-h.p. Decauville .. | 3.59 30secs. |
| 93 Dubois .. Tourist     | Voiturette ..        | 4.6 30secs.  |
| 54 Knapp .. " ..         | Peugeot ..           | 4.9          |
| 106 Legendre .. " ..     | " ..                 | 4.17 30secs. |
| 103 Bertrani .. " ..     | Voiturette ..        | 4.22 30secs. |
| 91 Gintrac .. " ..       | 1½-h.p. Trike ..     | 4.33         |

|                       |                      |      |
|-----------------------|----------------------|------|
| 25 Rigal .. Vitesse.. | 2½-h.p. Trike ..     | 4.37 |
| 86 Conderc .. Tourist | Trike ..             | 4.50 |
| 65 Fourcade .. " ..   | 9½-h.p. Wagonette .. | 5.12 |
|                       | Dietrich             |      |
| 70 Versein .. " ..    | Brake Peugeot ..     | 6.20 |
| 105 Graz .. " ..      | Auto-tandem ..       | 6.28 |

As regards the checking at *contrôles en route* they give the following results, taking all seven tourist categories together:—

Start at 9 a.m. with intervals of 30 sec.

Passed Langon (27 miles from Bordeaux):—

|                      |                      |
|----------------------|----------------------|
| Knapp .. 10.3 a.m.   | Calvet .. 10.15 a.m. |
| Pascault .. 10.5 "   | Lafitte .. 10.16 "   |
| P. Dumas .. 10.9 "   | Rolls .. 10.19 "     |
| Barrow .. 10.15 "    | Fourcade .. 10.21 "  |
| and eighteen others. |                      |

Passed Auros:—

|                      |                      |
|----------------------|----------------------|
| Knapp .. 10.23 a.m.  | Rolls .. 10.38 a.m.  |
| Pascault .. 10.26 "  | Calvet .. 10.40 "    |
| P. Dumas .. 10.28 "  | L. Sanson .. 10.48 " |
| Barrow .. 10.36 "    | Fourcade .. 10.48 "  |
| Lafitte .. 10.37 "   |                      |
| and eighteen others. |                      |

Passed Grignols:—

|                      |                      |
|----------------------|----------------------|
| Knapp .. 10.54 a.m.  | Barrow .. 11.16 a.m. |
| Pascault .. 10.56 "  | Calvet .. 11.20 "    |
| P. Dumas .. 11 "     | Cuzacq .. 11.25 "    |
| Rolls .. 11.14 "     | Chain .. 11.25 "     |
| Lafitte .. 11.15 "   | Sanson .. 11.26 "    |
| and fourteen others. |                      |

Passed Casteljalous:—

|                     |                      |
|---------------------|----------------------|
| Knapp .. 11.5 a.m.  | Calvet .. 11.35 a.m. |
| Pascault .. 11.8 "  | Chain .. 11.37 "     |
| Dumas .. 11.12 "    | Cuzacq .. 11.40 "    |
| Rolls .. 11.27 "    | Barrow .. 11.43 "    |
| Lafitte .. 11.30 "  | L. Sanson .. 11.44 " |
| and fifteen others. |                      |

Arrived Mont-de-Marsan (end of first day):—

|  |              |
|--|--------------|
| Pascault .. 12.52 p.m.                   | Lafitte .. — |
| Dumas .. 1.3 "                           | Barrow .. —  |
| Rolls .. 1.19 "                          | Chain .. —   |
| Calvet .. 1.39 "                         |              |
| and fourteen others in straggling order. |              |

The first day found us winner of our own category (viz., cars above 6 h.p., and carrying four persons), but left a lot to make up to beat the others. We lost much time first day through chain coming off twice and motor running under power (never on fourth speed except down hill); in fact, at times during the first day it looked like not being placed at all. However, by working till 5 a.m. on the car we succeeded in improving her considerably for second day (the governors, a moving part of which had broken, had to be tied up, amongst other things).

Left Mont-de-Marsan at noon. *Contrôles* (second day) *en route* were:—

Passed St. Paul les Dax:—

|                      |                      |
|----------------------|----------------------|
| 1 Rolls .. 1.15 a.m. | Lafitte .. 1.30 a.m. |
| 2 Calvet .. 1.17 "   | Bergeon .. 1.30 "    |
| Barrow .. 1.26 "     | Sanson .. 1.35 "     |
| Cuzacq .. 1.27 "     | Dumas .. 1.40 "      |
| and seven others.    |                      |

Passed Bayonne:—

|                    |                      |
|--------------------|----------------------|
| Rolls .. 2.23 p.m. | Lafitte .. 2.49 p.m. |
| Calvet .. 2.33 "   | Bergeon .. 2.55 "    |
| Cuzacq .. 2.38 "   | Barrow .. 2.57 "     |
| and twelve others. |                      |

It will be seen that on the second day we almost immediately obtained the lead, and held it to the finish. The weather on the first day was fearful—roads very heavy and blinding storms; second day, fine mostly till finish.

There was one other Englishman racing, viz., Mr. Barrow, of Biarritz, who came in seventh of the tourists, or third in his class, on a Dietrich. It is curious that he offered the cup for the winning tourist, which was therefore offered and won by Englishmen. I hope shortly to have copies of a photo taken at start at Bordeaux, and will send you one.

It might be mentioned that great praise was due to the Committee of Organisation, all of whom were extremely courteous to us, in particular Dr. Creuzan, President of Autoclub Bordelais, and H. Borotar.

Paris,

October 18th, 1899.

Yours truly,

C. S. ROLLS.



# THE MOTOR-CAR CLUB'S OUTING.

TO THE EDITOR OF *The Motor-Car Journal*.

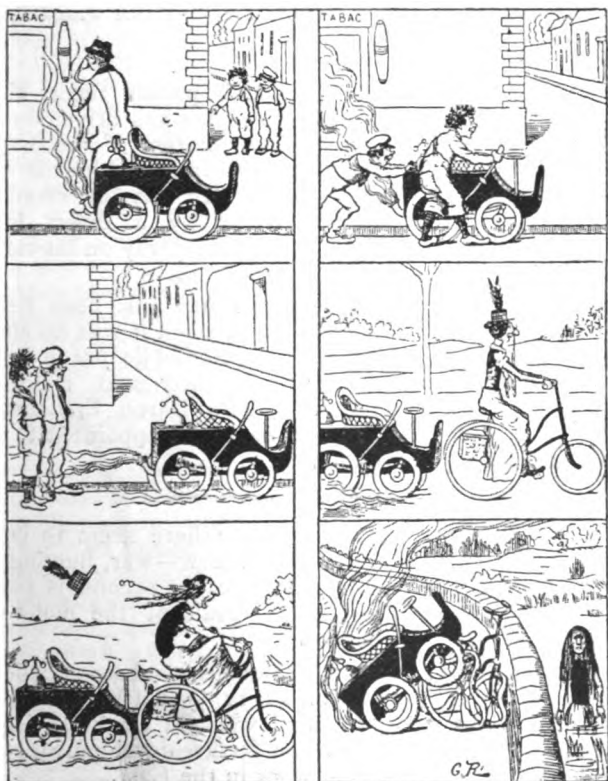
SIR,—For the last thirty years I have been interested in the progress of automobilism, and as a regular reader of your paper I noticed in your last issue an advertisement to the effect that the Motor-Car Club will hold its fourth annual run to Brighton on Monday, November 13th, and all motorists are invited to participate. The Automobile Club of Great Britain, which I believe contains among its ranks most of the best known owners of automobiles, also announces a meeting of motor-cars on Tuesday, November 14th. Both of these meetings are apparently to celebrate the passing of the Act which enabled motor-cars to use the roads. I shall be greatly obliged if you, sir, or any of your contributors (best of all the secretary of the Motor-Car Club) will inform us if it is a bona fide club, and not a trade association; and in order to convince us on this point it is most desirable that the secretary should give us (1) the names of all the members of the Club Committee; (2) tell us whether automobilists who are invited to join the run may inspect a list of the members at the premises of the Club; (3) give us assurances that the Club is supported by members' subscriptions and is not subsidised by the promoters or directors of any companies who are interested in promoting any special make of car. If the secretary of the Motor-Car Club can give this information and these assurances, doubtless many automobilists, including members of the Automobile Club, may wish to take part in the Motor-Car Club's run. If he cannot do this I must point out to ladies and gentlemen that in joining this run they allow themselves to become a means of advertising a trading association.

Knowing, sir, that you have the best interests of automobilism at heart, I trust you may find it possible to insert this letter in your next issue.

Mansion House Buildings, E.C. Yours faithfully,  
Oct. 18th, 1899. R. E. CROMPTON.

## AN AUTO-LIFT.

(From the "Automobile Magazine.")



# THE RAPIN SUPPLY-REGULATING AND CONSTANT LEVEL FLOAT FOR PETROL MOTORS.

THE accompanying illustrations (Figs. 1 and 2) show the details of an improved regulating float devised by M. P. Rapin, of Savigny-en-Septaine (Cher.), France, the object of which is to maintain constantly a certain level of spirit in the carburettor. The float comprises a water-tight cylinder *A* (Fig. 1), in the centre of which is formed the tube *B*. A second tube *C* is fixed to the lower portion of *B*. A third tube *P* is passed through *B* and *C*. The tube *P* is closed at its lower end *E*, but has an opening *X* at the side at about half of its length, the upper end *F* being connected to the spirit storage tank. When the level of the petroleum spirit rises the float also rises, and the tube *C* closes the orifice *X* of the pipe *P*. When, on the contrary, the level falls, the tube *C* descends and opens *X*, the spirit then passing through openings *I* in the tube *C*. A small helicoidal screw *K* is formed on the upper part of *P* to neutralise the movement of the liquid. M. Rapin claims that

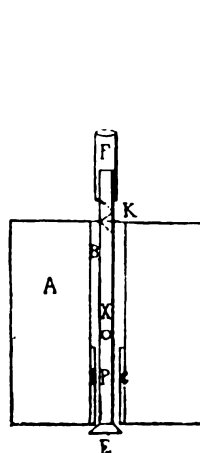


FIG. 1.

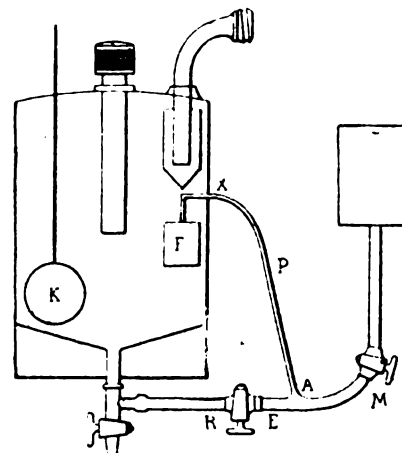


FIG. 2.

not only has the movement of the liquid no detrimental effect, but that, on the contrary, the vibration assists the automatic working of the apparatus, the level remaining constant whatever the speed of the motor, this being attained without the use of valves or springs. The application of the apparatus to a carburettor is shown in Fig. 2. A hole *X* is pierced at the side at a point in such a position that a mark on the float will be at the height to which it is desired the level shall be maintained in the carburettor. This done, a pipe *X* (Fig. 2) is connected to the top of the regulator float *F*, and at *A* to the pipe *E*, which connects the storage tank *D* with the bottom of the carburettor. Two cocks *M* and *R* are introduced in the pipe *E*, one on each side of the junction *A*. On starting, the cocks *M* and *R* are both opened, this allowing the carburettor to fill rapidly. When the desired height is obtained, indicated by an ordinary float *K*, the cock *R* is closed and the engine started, after which the oil is conveyed to the carburettor through the by-pass pipe *P* to the regulator float *F*. It is stated that the apparatus is perfectly automatic in its action, and will maintain a constant supply of spirit, and keep the same at a constant level in the carburettor until the supply in the storage tank is exhausted.

THE Automobile Club de France has now no less than 1,910 members on its list.

A SLIGHT error crept into our description of the McLachlan heavy oil motor last week. We stated that the speed of the engine in connection with the company's small electric lighting plant was 1,500 revolutions per minute; it is, of course, the dynamo that runs at this speed, not the engine.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

**The Paris-Madrid Record.**

CONTRARY to general expectations, M. Enrique Marzo's attempt to beat the Paris-Madrid record now standing to the credit of MM. Edouard de Perrodil and Henri Farman proved unsuccessful, although neither rider nor machine were at fault. The weather was alone responsible for M. Marzo's failure, for it treated him badly from the time of his departure on the night of the 10th inst. until he finally decided, on the 12th, to abandon the essay when a few kilometres beyond Bordeaux. The would-be recordist made his start, in company with Béconnais, from the Châlet du Cycle in the Bois de Boulogne, and arrived at Bordeaux some fifteen hours after the professional, having rested *en panne* at Dangé for a considerable time, due to the heavy rain short-circuiting his electrical connections. Shortly after leaving Bordeaux M. Marzo decided to cease his struggle against the elements, and accordingly returned to that town and took train for Madrid. Béconnais continued to battle on until he reached Bayonne, at which place he also gave in, and joining M. Marzo proceeded by train to the capital. An amusing feature of this latter portion of their trip was their ingenuity



A FREQUENT SCENE IN FRANCE.—MOTOR-CAR WAITING AT LEVEL CROSSING.

in avoiding payment of the railway company's extortionate charge of 320-francs for the carriage of each motor-cycle. Unable to secure a reasonable figure from the authorities at Bayonne the two chauffeurs detached the motors from their machines, and carried them in their compartment as baggage, the tricycles being also conveyed by the railway company as simple tricycles, and free of charge. These gallant motor men certainly deserved to reach Madrid!

**Narrow Escape of a Préfet.**

THE Préfet of Dordogne had a very unpleasant experience on Friday last as he was entering the préfecture at Périgueux on his return from Paris, and was fortunate to escape scathless. At the moment of his entry a motor-cyclist, travelling at a high rate of speed and carrying no lamp, crossed immediately in front of the préfet's carriage, so startling the horses that they bolted. The coachman fortunately retained his presence of mind, and it was due to his skill that a disaster was averted. The préfet subsequently declared that he did not regret the incident, for he would now take steps to ensure that all cyclists and automobilists should comply with the law in his district.

**Hill-Climbing Contest.**

THE annual hill-climbing contest promoted by *La France Automobile* will take place on Sunday, November 12th, on the hill of Canteloup. The length of the course is 1,820 metres.

**M. Léon Serpollet.**

ALL English friends of M. Serpollet, the well-known builder of steam automobiles, will be delighted to learn that he is progressing favourably and bids fair to make a speedy recovery from his recent attack of typhoid fever.

**The Toll at Rouen's New Bridge.**

THE authorities at Rouen having announced that automobiles making use of the new bridge would be charged a toll of one franc, many motor-cyclists were exercised in mind as to whether their machines would be included under this charge. A representative of *Le Journal des Sports* therefore called upon the authorities, and has ascertained that all automobiles weighing not more than 1,000 kilos. can avail themselves of the bridge at the modest charge of 25 centimes.

**A Motor-Car at a Baptism.**

AT Nice, on the 10th instant, there took place the baptism of the infant son of M. and Mme. Braun, the proprietors of the Hôtel d'Angleterre. At the conclusion of the ceremony the guests were taken a long drive in a number of automobiles, but I am unaware as to whether the hero of the day participated in this revelry of "teuf-teufs" or whether he has yet formed any decided views as to the practicability of self-propelled vehicles.

**A New Category.**

THE Commission Sportive of the Automobile Club of France has decided to create a new category of vehicles in addition to those already recognised. It will consist of voiturettes weighing up to 400 kilos. The two other categories recognised by the Club are—1, motor-cycles, etc., not weighing more than 250 kilos.; 2, vehicles weighing over 400 kilos.

**Mountaineering by Motor-Car.**

THE Munich papers report that a Munich sportsman has driven an automobile three-quarters of the way up the Herzogenstand, which is 1,757 metres high. He was prevented from getting further by a defect in the gearing, but was able to return the whole way on his car.

**Automobilism in Italy.**

A MEETING has just been held at Treviso, Italy, when it was decided to organize an automobile *fete* to be held in the town early next month. A committee, with Baron Franchetti as president, has been appointed to draw up the necessary programme.

A DAILY paper remarks that "there seem to be but three subjects of conversation just now—war, hunting, and automobilism. The first is inevitable, the second is seasonal, and the third the natural result of the motor-car's popularity across the Channel.

A LARGE steam motor mail van has just been supplied by Messrs. Julius Harvey & Co., of 11 Queen Victoria Street, London, E.C., for regular postal work in Colombo, Ceylon. It is expected that there will be a further development of this form of locomotion for postal work in the East.

## SCOTTISH NOTES.



### A Correction.

I SEE your "P.D." has been playing pranks with my MS. in last issue, and by means of his apparently very lively imagination made the electric car at Strathpeffer, which I was writing about, upset on the roadside *with a boy*, over and above the driver of the motor.

What I wrote was that the car upset *into the bog*, where it lay, according to report, for about a fortnight before it was rescued from its miry grave. As your Edinburgh correspondent who made the enquiries regarding the alleged electric car may have something to say in your current issue, I will not write further on the subject in the meantime.



### "Emancipation Day" in Scotland.

I UNDERSTAND an effort is being made in the West of Scotland to celebrate "Emancipation Day," 14th November, in an appropriate way. Nothing definite has yet been arranged, but I believe the proceedings will take

the form of a motor-car meet in George Square, Glasgow, with probably a run out into the country thereafter. The idea is, I think, a good one, and should help to let the public of Glasgow see that the automobile industry is still progressing, and may tend to arouse a little interest and enthusiasm in that progressive (apparently in all things but motor-cars) city.



### The Matter of Gears.

HIGH-GEARED cars are a great nuisance when any particularly stiff hills have to be tackled. I had an instance of this last week when visiting a gentleman's place in Lanarkshire.

The approach to the house is down a road which may be an ideal one for tobogganing, but which the driver of an automobile is apt to look at twice before descending, and when he does start on his downward career pray fervently that his hand brake may not fire or his chains break. We all got out of the car, with the exception of "the man at the wheel," to lessen the tension, and after he had reversed his engines he let her go with the clutch disengaged and manipulating the band brake. The descent was made safely, if slowly, and the right angle at the foot (which entirely prevented any insane idea of rushing the hill) negotiated, the rest of the outward journey being plain sailing. But on our return we had that hill to ascend, and it was only in climbing up it, keeping close behind the car all the way to lend a helping hand when necessary, that we discovered what a "tough 'un" it really was. The progress of the car (a Daimler wagonette, weighing considerably over a ton) got slower and slower, until it became absolutely imperative that the four able-bodied pedestrians should exert their muscles on her behalf. The devil-sprag was trailing to prevent any running backward, and for three-fourths of that upward path we had to sweat and pant as we pushed for all we were worth at that over-taxed car. At last the top was reached, and four puffing and blowing specimens were glad to get aboard and have their reward in being taken home the bulk of the journey on fourth speed. In fact, the progress after this was so exceedingly rapid that the current of air set up (for there was no wind) resulted in one of the lamps being blown out. It turned out to be slightly defective (possibly accounting for some of the car's sluggishness in taking the hill), but was soon put to rights, and the remainder of the journey accomplished in a most enjoyable fashion. For flat districts a high-gear car must be a great source of pleasure, but in this "up hill and down dale" country of ours a medium gear is undoubtedly the more useful with which to fit our "flying machine." Talking of gears, a gentleman whom I know substitutes a low gear in the winter time for the high speed one

which does duty on his car in the summer. The idea is a good one if much travelling is done in the winter season, for what with greasy roads or mud, slush or snow, one rarely, if ever, gets on to the top speed. If the gearing is consequently reduced, so as to bring the fourth speed in winter time to the equivalent of the third in summer, one will get more satisfaction and consistent work out of one's car. Better a willing third than a sluggish fourth.



### The Madelvic Cars.

THE Madelvic Motor-Carriage Co., Ltd., whose very extensive works are situated at Granton, near Edinburgh, are still successfully carrying out their mail contract with the Post Office authorities by means of their electric car. There have been comparatively few hitches, but it must be taken into consideration that the distance to be traversed between Edinburgh and Leith is a very short one, and even after knocking a very liberal percentage off the mileage which electric batteries are said to be capable of accomplishing without re-charging, there should always be more than ample energy left to ensure the successful carrying out of the runs. From all accounts the oil motor of Mr. Peck, the managing director of the concern, from which great things were expected, is still undergoing improvement in the workshops. Once it is finally tested and proved, and can be turned out in large numbers, the Company, with their splendidly equipped works, should be in a position to do a big business in automobiles.



### A Hint to Bazaar Promoters.

It is not an easy matter nowadays to introduce novelty into the modern bazaar, and promoters are now almost at their wits' end to get some new thing worked in. Several Scotch bazaars during the last few months have made use of the motor-car as an advertising medium, and from inquiries I am informed that the result has been satisfactory in almost every case. A week or two ago, at Castle Douglas, a motor-car was running about each day conveying parties to the bazaar. Last week two motor-cars were in evidence at Motherwell in connection with the great bazaar held on behalf of the building funds of the Y.M.C. Institute now in the course of erection in that town. Mr. James Burns, hon. sec. of the bazaar, kindly lent his own private wagonette for the purpose of the collection and delivery of goods, and another wagonette for the same purpose was lent by Messrs. Stirling, of Hamilton. A very satisfactory revenue was obtained from these vehicles, as a charge was of course made for delivery of goods purchased at the bazaar. I think bazaar promoters who have not yet tried the motor-car would do well to follow the example of others in this respect.



### Motor Making.

SCARCELY a week is passing just now without the announcement being made that another firm of cycle makers, engineers, or other manufacturers have joined the motor industry and are bringing out something new in the line. This is extremely interesting information, and indicates the belief of the firms concerned in the business that is coming, and their determination to obtain a share of it, and it is only what was to be expected. The "slump" in the cycle trade perhaps hastened in some degree this result, at any rate so far as some of the cycle makers are concerned, who, having a surplus of idle plant, naturally sought something to employ it which held out more prospect of profit. It is very gratifying that so comparatively early in the development of the new industry so many well-known firms of high repute in various departments of the mechanical arts are attaching themselves to it, and I have no doubt that in the course of the next few years many of these concerns will stand in the front rank of motor-carriage makers.

**The Proposed Scottish Club.**

MESSRS. MITCHELL AND SMITH, of Glasgow, who some time ago took up the matter of the formation of the proposed Scottish Club, write me complaining of my remarks on this subject in last week's issue of *The Motor-Car Journal*. As I am in close touch with everything that is going on in the motor-car "world" in the North, as well as in frequent communication with the leaders of the movement in Scotland, I am in a position to speak with knowledge on the subject. If Messrs. Mitchell and Smith will take up the matter energetically, probably the Club may yet be boomed through their agency.

**Some Advice.**

WHEN many persons who, while being skilled in other manufactures, are wholly inexperienced so far as motor-car making goes, are almost rushing into the new business, it may not be inopportune to lay down a fundamental principle which in my opinion should from the outset govern the manufacture of every detail in the construction of motor-vehicles, and that is that as regards the workmanship and the materials used they must be above and beyond doubt or suspicion—they must be of the very highest class, of the very finest description. One has only to consider for a moment the innumerable shocks, jars and strains which are inflicted on a vehicle travelling at even fourteen miles an hour over our ordinary highways, to be impressed with the absolute necessity of makers exercising the most scrupulous care in the selection of their materials: not only that they should be of the right sort and quality, but that they should be of the right weight and strength for the work they are called upon to perform. Especially is this desirable where there is so great a temptation to reduce weight wherever possible, as in the light vehicle class. To many experienced engineers this advice is wholly superfluous, but to many others who are just starting out it may prove useful, and I am sure in the end work out to their profit. Thinking people for some time to come will no doubt be inclined to place their orders with firms who have had the longest experience, but if the younger makers only start out and follow on in the lines indicated they will very soon attract to themselves a large and lucrative business.

"BROWN HEATHER."

MR. W. H. NEWMAN, of Totteridge Park, Herts, writes us this week to the effect that his variable speed gear, which was exhibited at the Richmond Motor-Car Show in June last, has since then been considerably improved. With the driving shaft running at 650 revolutions per minute the driven shaft can be varied in speed from 0 to about 500 revolutions per minute, the apparatus being capable of transmitting about 3-h.p. at that speed. Mr. Newman is arranging to exhibit the device at the works of Mr. P. Hooker, of Pear Tree Court, Farringdon Road, London, E.C., from the 19th to the 25th inst., inclusive, where he will be pleased to explain the apparatus to any one interested.

THE Southern Motor-Car and Cycle Co., of Brixton Road, S.W., inform us that it was through their instrumentality that the Coulthard steam omnibus was brought before the notice of the Auto-Motor Express Co., Ltd., of Ramsgate, and that the order for the vehicle was placed through them.

In connection with the Motor-Car Club's run to Brighton on November 13th, Messrs. Hewetsons, Ltd., of Dean Street, Oxford Street, W., propose to run one of their ten-seated Benz wagonettes with covered top. Early application should be made for seats in the car.

AT Falkirk on Tuesday James Hunter, one of the drivers in the employment of the Falkirk Motor-Car Co., was fined 10s. or seven days' imprisonment for driving a motor-car at a speed greater than ten miles an hour.

**THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.**

THE third annual meeting of the Liverpool Self-Propelled Traffic Association was held on Monday in the room of the Chamber of Commerce, Exchange. Mr. Alfred L. Jones, Senior Vice-President, presided, and amongst those present were Dr. Hele-Shaw (Vice-President), Messrs. F. C. Danson (President Liverpool Chamber of Commerce), S. B. Cottrell (Engineer and General Manager Liverpool Overhead Railway), W. Becket Hill (Messrs. Allan Bros.), Richard Bennett (Liverpool Cart-Owners' Association), Fred. J. Pilcher, H. W. Rushton, W. L. Bodman, T. H. Coleborn, Ernest N. Hooper, P. Souvestre, Henry Fowler, and E. Shrapnell Smith (Hon. Secretary). Lord Derby wrote apologising for his absence, which was due to his departure to London for the opening of Parliament.

The following is the third annual report of the Association:—

The additions to the roll have been 35. Four names have been removed from the register, of which three are due to resignations and one to death—Mr. Thos. B. Brodbelt, Waterloo. At the present date the number of members is 95, compared with 44 and 64 at the close of the first and second sessions respectively.

It is a matter of sincere regret that Mr. Alfred Holt, M.Inst.C.E., Senior Vice-President, has had to resign office, and the Council desire to place on record their high appreciation of his valued services and support during the three years that he occupied that position. Professor H. S. Hele-Shaw, LL.D., F.R.S., M.Inst.C.E., and Mr. Anthony G. Lyster, M.Inst.C.E., Engineer-in-Chief Mersey Docks and Harbour Board, have been elected Vice-Presidents, and Mr. Charles W. Jones, J.P., and Alderman William Oulton, J.P. (the Rt. Hon. the Lord Mayor of Liverpool), members of Council. Mr. J. Walwyn White has been elected Honorary Treasurer. Apart from these changes, the constitution of the Council is in accordance with the elections of July 12th, 1898.

In August, 1898, a fusion was arranged between the Automobile Club of Great Britain and Ireland and the Self-Propelled Traffic Association, but the terms were found to be unacceptable to this centre. Conferences were held in London between a sub-committee of the Club and a deputation of the Liverpool Council, the outcome of which was an arrangement of affiliation under which the following points are defined, viz.:—Title: The Liverpool Self-Propelled Traffic Association, being the local centre of the Automobile Club of Great Britain and Ireland. Subscriptions: Members of the Association pay one guinea per annum as heretofore, which does not entitle them to any of the privileges of the Club, but are eligible for election to the Club on payment to London direct of the ordinary Club subscription less one guinea. The Association pays the London body a fee of half a crown per head per annum for each member upon the local register. Elections: Members of the Association are elected by the local council. Area: The Association's jurisdiction includes Lancashire, Cheshire, and North Wales. The Club will give the Association notice before seeking to establish centres within such area. Termination: This arrangement of association may be determined by either side, on December 31st in any year, by six months' previous notice in writing. Subject to such modifications as are involved in the above-noted arrangement with the Automobile Club, the Association is conducted under the rules and articles of Association of the Self-Propelled Traffic Association.

A statement of the ordinary accounts has hitherto been published at the end of each session, i.e., at a date not co-incidental with the completion of a financial year. It has been decided that the ordinary accounts for the remainder of 1898 shall be merged with those of the year ending December 31st, 1899, in consequence of which the honorary treasurer does not attach any statement of accounts to this report. It may here be stated that the current revenue of the Association is ample to meet all ordinary expenditure. The accounts of the 1898 trials, duly certified by Messrs. Lloyd & Walker, chartered accountants, 5 Castle Street, Liverpool, were published on June 3rd, 1899. The debit balance of £47 9s. 2d. has since been extinguished by sale of reports and other assets of the 1898 account.

The awards of the judges in connection with the 1898 trials of motor-vehicles for heavy traffic were announced on August 12th, 1898. The Session was opened on November 23rd, 1898, by the presentation of the judges' report upon these trials, which were held from May 24th to 27th, 1898. Owing to the large hall of the Royal Institution being engaged, the meeting was held in the Arts Theatre of University College, the use of which was kindly granted by Principal Glazebrook and the Senate. In the absence of the President, the Rt. Hon. the Earl of Derby, K.G., who was unable to be present on account of Lord Lathom's funeral, members and guests were received in the library by the Vice-Presidents, Messrs. Alfred Holt, Alfred L. Jones, and John A. Brodie, prior to the meeting in the Arts Theatre, where the chair was taken by Mr. Alfred L. Jones. The report was presented on behalf of the judges by Mr. S. B. Cottrell, M.Inst.C.E., Dr. H. S. Hele-Shaw, M.Inst.C.E., and Mr. Henry H. West, M.Inst.C.E., each of whom dealt with one or more sections. Sir David Salomons, Bart., and Mr. Boverton Redwood were unable to be present. A number of lantern slides were used to illustrate various incidents of the

competition and the construction of the vehicles taking part, including reproductions of all the plates in the report. The report is the first book published on the subject of heavy automobilism exclusively, and should be in the possession of all interested therein.

Subsequent meetings were held, at which papers upon the several subjects enumerated in the following summary were read and discussed:—December 13th, 1898.—Discussion: "The Judges' Report on the 1898 Trials and the Conditions for the 1899 Trials," opened by Mr. Anthony G. Lyster, M.Inst.C.E. (Engineer-in-Chief Mersey Docks and Harbour Board). January 17th, 1899.—Mr. S. H. Sparkes (Messrs. Fox Bros., Ltd., Wellington, Somerset)—Paper: "Motor *versus* Horse Haulage; an Account of our Nine Months' Experiences." February 14th.—Mr. W. Norris, Assoc.M.Inst.C.E., M.Inst.Mech.E.—Paper: "The Application of Steam to Self-Propelled Road Vehicles." February 28th.—Mr. Tnos. H. Parker, M.Inst.E.E.—Paper: "Some new features in Motor-Vehicle Design." The paper announced to be contributed by Messrs. D. H. Simpson and W. L. Bodman on "Further Developments in Steam Motor-Vehicles for Heavy Traffic," was unavoidably withdrawn.

The average attendance during the session equalled 47 at each meeting.

The session was brought to a successful close by the heavy motor-vehicle competition held from July 31st to August 2nd, 1899. The chief object of the trials was to demonstrate the advance made since May, 1898, in the direction of "types of heavy motor-wagons suitable for trade and agricultural requirements in the neighbourhood of Liverpool, which shall be capable of economically taking the place of horse haulage and of competing with the existing railway rates, in the transport of heavy loads of goods over distances of up to forty miles." The conditions for the trials were published on February 14th, 1899, and it was then announced that the competition would be held five weeks earlier than had been originally contemplated. This arrangement was to provide for the trials taking place in connection with the annual show of the Royal Lancashire Agricultural Society, who offered gold and silver medals.

Out of eleven entries by ten firms, six vehicles were presented for trial, the remaining five not being completed in time. Loads of from two to six and a half tons were carried up the selected hills (maximum gradient of 1 in 9) and over the now well-known Liverpool courses of 35 miles each, with results that show a marked and gratifying advance on those of the 1898 competition. The competing firms were: Bayleys, Ltd., Newington Causeway, S.E.; T. Coulthard & Co., Cooper Road, Preston; the Clarkson and Capel Syndicate, Deverell Street, S.E.; the Lancashire Steam Motor Co., Leyland; and the Steam Carriage and Wagon Co., Ltd., Chiswick. The trials were attended by representatives of commercial interests in all parts of the United Kingdom, including many of the principal railway companies. The Secretary of State for War, the Postmaster-General, the President of the Local Government Board, the Corporations of Bradford, Barrow-in-Furness, Bootle, Birmingham, Birkenhead, Chester, Eccles, Gateshead, Glasgow, Lancaster, Liverpool, Manchester, Salford, St. George (Hanover Square), St. Pancras, St. Mary's (Battersea), Southampton, Waterloo, West Hartlepool, and Willington Quay, the Liverpool Chamber of Commerce, the Liverpool Cotton Association, the Liverpool Corn Trade Association, and numerous other bodies, sent official delegates. The report of the judges is now in course of preparation. The judges' awards were announced on Thursday, August 3rd, 1899, as follows: The Steam Carriage and Wagon Co., Ltd., two gold medals; Bayleys, Ltd., silver medal; the Lancashire Steam Motor Co., silver medal.

The results of the second series of trials having made it clear that an interval of twelve to eighteen months admits of much progress being made in improvements upon the construction of motor vehicles for heavy traffic, it has been decided to organise one more series of trials. It is intended that these shall be held in October, 1900, and there appears to be little doubt that the Association will then be justified in leaving the movement to private enterprise for development upon commercial lines.

*The Present Tare Limit.*—The Council adhere to the resolution contained in their second annual report, viz.:—Resolved: "That the Liverpool Council of the Association is of opinion that the existing maximum of 3 tons tare imposed by the Locomotives on Highways Act, 1896, very seriously hampers and in many cases prohibits the construction of vehicles of the types required for the heavy traffic of this district, and a recommendation is hereby made to the General Council that the whole forces of the Association shall be immediately directed towards the obtaining of an amendment to the Act whereby (a) all restrictions upon weight shall be removed; or, if it be deemed inexpedient to remove all limitations, (b) a limit upon the total moving weight, or upon the weight per axle, shall be substituted for the present limit of 3 tons tare; or if it be considered imperative to retain a limit upon the tare, (c) the tare permissible shall be increased to at least 4 tons."

Owing to the fusion between the A.C.G.B. and the S.P.T.A., this recommendation was not dealt with for some months when it passed into the hands of the Club Committee. In February of this year the Club Committee expressed the hope that the Association would postpone any action until after the Club show and the autumn heavy trials, to which the Council agreed on the 28th of that month. The question came up again at the Council meeting of August 15th, when it was resolved to request the Liverpool members of Parliament to introduce a short Bill to increase the limit from 3 to 4 tons, but, in response to an appeal from the London Club, no action has been taken pending the holding of a joint conference in London. At this conference, which has been called for November 15th, members of the Club Committee, a deputation of the Council of the Association, and representatives of firms engaged in the manufacture of heavy automobiles will discuss the advisability of introducing a Bill.

The Council are of opinion that, even if some manufacturers can build a vehicle to carry 5 tons which shall tare less than 3 tons, it is desirable to have the Act altered to permit of a 4-ton tare, (a) to ensure a reasonable life in regular work; (b) to avoid years of delay in waiting for that lightness of construction which may come ultimately; (c) to give a wider scope to manufacturers who, however, will be prevented from wasting material or introducing excessive weight by the spur of commercial efficiency which demands the highest possible ratio of live load to tare; (d) to provide for loads of 6 to 10 tons which must be carried before the vehicles can be reckoned capable of meeting trade requirements generally; (e) to permit of a vehicle being sold at a commercial price.

The Chairman, in moving that the report be taken as read, said he was extremely pleased to be again present and report what had been done towards the development of the self-propelled traffic industry. What was required in Liverpool was a modern motor-wagon able to deal with the trade of the port, and he thought they were getting closely on to something that might be of great advantage to all interests concerned. The trials and exhibits held by the Association had been to induce manufacturers to produce something which would be of practical service. Messrs. Thornycroft had been exceedingly successful in the last exhibits, and had produced a wagon which would work at half the cost of a horse-wagon, and he believed that that firm had received an order from the Lancashire and Yorkshire Railway Company for twelve of these vehicles at a cost of £600 each. That would show that they were really on the verge of what might be considered a great national industry. He would much like to see factories for the building of these wagons located in Liverpool. There was no place where these wagons would do better and be of more use than in Liverpool, owing to the peculiar way in which their traffic had to be dealt with. Nearly all goods in Liverpool had to be carted, and it would be easily seen by any one that if they could reduce the cost of the carriage by half what a great thing it would be for the port.

Mr. Cottrell seconded, and said the Association had materially advanced the construction of self-propelled vehicles for heavy traffic. He considered makers were working in the right direction. He thought it would be an important point gained if they could obtain sanction for increased tare limit. At the present time the limit handicapped the production and manufacturers. They should make every effort to get an increase in the tare limit.

Mr. Richard Bennett said the cost (£600) of manufacturing a vehicle was too much. They could get a good horse-wagon for £200. He thought engineers should give their attention to manufacturing these machines at a less cost than they did.

The Chairman remarked that inventors liked to be paid for their inventions. There were many advantages possessed by the motor over the horse-wagon.

Mr. Shrapnell Smith remarked that one motor would do the work of four horse-wagons.

Mr. Beckett Hill, in a speech highly favourable to the motor, said the life of a horse averaged only about five or six years, while the motor would last much longer.

The report was then adopted.

Mr. F. C. Danson moved a vote of thanks to the Hon. Secretary and other officers of the Association. Mr. Shrapnell Smith's work could not be over-estimated. He hoped the annual trials would still go on, as they could not expect to find perfection in three years. These tests had done more than anything else to promote the development of heavy motor-cars, and they had more than justified the existence of the Association.

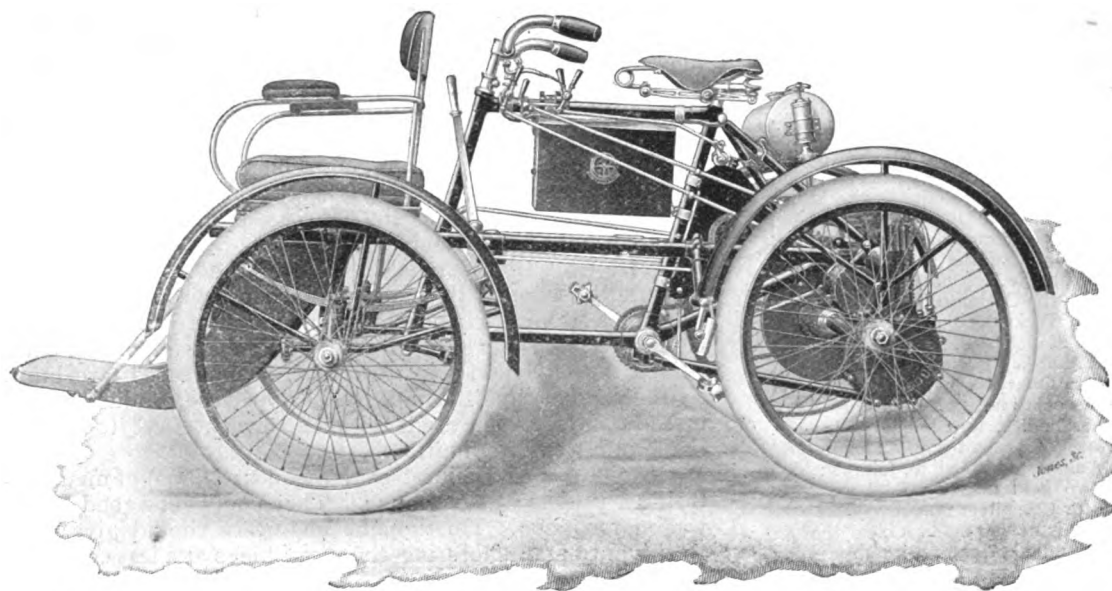
The resolution was adopted, and at the conclusion of the proceedings a vote of thanks was accorded to the chairman on the motion of Dr. Hele-Shaw, seconded by Mr. F. J. Pilcher.

A MEETING of the Automobile Club of America, of New York, was called for Monday last, the 16th instant, to receive the report of the acting executive committee, the constitution, and by-laws.



## THE EADIE MOTOR CYCLES.

REFERENCE to the accompanying illustration will indicate the lines which have been adopted by the Eadie Manufacturing Company, of Redditch, in their motor-cycles. The motor employed both in the tricycle and quadricycle is the well-known De Dion-Bouton of 2½-h.p., the most efficient high speed engine yet designed; it is located behind the axle in the manner generally followed. The axle balance gear and bridge, which has been adopted by the Eadie Co. after mature consideration of all existing types, possesses the essential features of rigidity of construction, simplicity, and ample proportion of bearings and gearing. A tendency has been displayed in some quarters to deride the bridged axle, as shown in this design, in favour of the tubular bridge. It is claimed that the principal reason for the more utilitarian character of the bridged axle lies in the feature that it provides for the independent adjustment of the bearings. In the type of axle as adopted by the Eadie Co. the adjustment of any or all of the bearings affects only the position of the ball on the cone. In the tubular bridge type, however, the axles are drawn respectively to the right and left by the adjusting cones, which are placed at each extreme



THE EADIE MOTOR-QUADRICYCLE.

end, this action having the effect of drawing the bevel gears attached to either end of each axle out of mesh with the driving pinions, and if prolonged indefinitely would make movement impossible. The bearing cases are rigidly connected by tubular sleeves of ample proportion; this fact, in conjunction with the methods of construction and special devices employed in the frame building department of the Eadie works, ensures absolute correctness in these essential particulars. A point to which attention is particularly drawn is that no bevel wheels whatever are employed in the balance gear, the wheels being all face cut and of such form as to ensure the utmost freedom of action combined with the greatest possible margin of safety. The front forks of the tricycle have always been considered by cycle designers as presenting more difficulties in correct proportioning of the various parts than any other part of the frame of a cycle. These difficulties, which are serious in ordinary cycle construction, are accentuated in the case of motor-vehicles on account of the additional vibration and heavier weights involved. The Eadie Co. inform us that the fork used on their motor-tricycles was designed at a time when there were but few devices sufficiently strong to withstand the severe usage to which pacing machines were subjected. It is especially efficient as regards lateral rigidity. Band brakes

are provided both on the front wheel axle and on the rear axle. The wheels are of strong construction, and are equipped with pneumatic tires.

The Eadie Co.'s two-seated motor-quadricycle comprises an extremely rigid frame. The front seat is very comfortably arranged and suspended, and, in addition to the usual band brake, a double shoe brake acting on the driving wheel tires is fitted, this being worked from a second lever on the opposite side of the handle bar to that from which the band brake is applied. The motor is of the latest pattern 2½-h.p. De Dion type, the construction throughout being of the highest possible grade.

In addition to supplying motor-tricycles and quadricycles complete, the Eadie Co. are arranging to supply the frames for the same, to which firms may apply the motor, etc., themselves.

THE Woods Motor-Vehicle Co., of East Orange, N.J., has been licensed to do business in Illinois, with a capital of £13,000.

THE Hudson Gas Motor and Vehicle Manufacturing Co. has just been formed at Saratoga Springs, N.Y., U.S.A., with a capital of £20,000.

THE Erie Cycle Co., of Anderson, Ind., is to be added to the number of American concerns which will make automobiles.

AN American correspondent in Paris reports: "One may sit at a boulevard café, and see one hundred or more motor-tricycles pass in one direction during an hour or less."

MESSRS. FALCONNET, PERODEAUD & Co. of Choisy-le-Roi (Seine) are distributing an interesting and useful pamphlet entitled "Conseils pour la Conservation et L'Entretien des Roues Caoutchoutées."

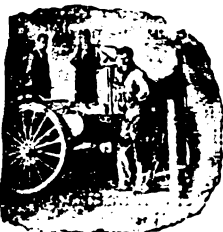
THE Tyne Motor-Car Company, Ltd., has been registered with a capital of £10,000 in £1 shares to acquire the business now

carried on under the style of "The Tyne Motor-Car Co.," to manufacture, sell, let on hire and deal in motors, motor-cars, and cycles of every description. The registered office is at 14 High Friars Street, Newcastle-on-Tyne.

A LONG-DISTANCE ride on horseback from Berlin to Totis, not far from Budapest, a distance of 470 miles, was commenced on Monday morning from the Tempelhoferfeld. The competitors, who are mostly cavalry men, were accompanied by bicycles and motor-cars, which are to serve as pacemakers and to carry luggage.

MR. W. H. CHAPMAN, electrician of the Belknap Motor Co., Portland, Me., has recently introduced a light electric carriage. The vehicle complete weighs 360 lb., of which 180 lbs. is battery, and is intended for a light racing machine, carrying one person normally and two on smooth roads. When only one person is riding an extra battery may be carried, bringing the mileage on one charge up to 40 or 50 on good roads, the normal mileage being about 20. The frame rests on four 32-in. tandem bicycle wheels, with 4-in. tires. Two ½-h.p. motors are used, each geared to the rear wheels by a 10-in. gear and run independently of each other in the ratio of 10 to 1. The steering lever is in front at the right, and the manipulating lever is in front of the seat.

## ANOTHER COMBINATION ELECTRICAL AND PETROLEUM-SPIRIT MOTOR-CAR.



**B**Y combining the petroleum-spirit engine with an electric motor for vehicle-driving the engine can, it is claimed, be made lighter than that required to alone drive the vehicle up the heaviest grades. The disadvantage of poor starting apparently inherent in the petrol-motor can, it is further claimed, be entirely overcome, and the motor and battery can be made much lighter than

though they alone were required to supply the full power, as the battery is alternately charged and discharged at short intervals from the engine, and is not dependent upon power houses for charging current. We have already referred to the Pieper electro-petrol car, while now we learn that a vehicle driven in this manner has lately been put on the market by the Munson Company, La Porte, Indiana, U.S.A. The engines are horizontal and of the twin-cylinder type, with balanced cranks and electric ignition. The igniters are supplied by the storage battery connected with the dynamo and fitted with spark coils specially wound for high pressure (40 volts). To prevent the grounding of the circuit both contacts of the igniters are insulated from the engine castings.

Coupled to the engine shaft is the generator or motor, which is of the external armature type, narrow and of large diameter in order to obtain maximum fly-wheel capacity with a given weight. The dynamo has a ring armature with a series or two-circuit winding and a radial or disc commutator. The internal field has six poles energized by a single field coil, shunt-wound and divided electrically into two halves, connected respectively to each of the two trays of storage cells, so that the series multiplying of the trays does not affect the field excitation. The dynamo is enclosed in a dust and moisture-proof casing.

Two sizes of dynamos have so far been made, one rated at 3 h.p. and the other at 5 h.p. The smaller machine has a speed of 360 revolutions per minute when running free on 80 volts; its weight is 300 lb. and its dimensions are 18 in. external diameter by 8½ in. width over all. The larger machine has the same speed, slightly larger dimensions, and its weight is 425 lb.

By means of the controller the two trays of the battery can be connected either in series or parallel, giving to the motor two speeds, one double the other, as the machine is shunt-wound, and a further speed variation is obtained by means of a changeable gear. This gear is changeable in a ratio of four to one, so that there are two speeds on each gear, giving four speeds to the vehicle altogether. A reversing switch is used for backward movements by means of the motor alone, there being two reverse speeds. There is one resistance position of the controller with the batteries in parallel, and also one when they are in series, but the controller mechanism is not fitted with notches in these positions.

With the larger-sized motor two makes of battery have been employed, one outfit weighing 800 lb. and rated at 100 ampère-hours at 80 volts; the other weighing 650 lb. and rated at 75 ampère-hours at the same pressure. Owing, however, to the quick recharging of the battery as soon as the driving of the vehicle requires less power than the engine generates, it has, the makers state, been found that a much lighter battery can be used and give proper results. Both pleasure vehicles and delivery wagons have, we understand, been built with driving gears of this kind.

The Lewis Motor-Vehicle Manufacturing Company has been formed in Philadelphia, with a capital of £10,000. Incorporators: H. H. Simpers, L. Pyott, D. C. Clarke, J. W. Graham, all of Philadelphia.

## THE FATAL MOTOR-CAR ACCIDENT AT EDGE HILL.

THE adjourned inquest on the body of Nina McLeod, housekeeper at Rodway Grange, near Kineton, who was killed in a motor-car accident near Edge Hill three weeks ago, was held at Rodway on Friday last week. The Coroner (Mr. Thomas Christophers) explained that the enquiry had been adjourned for the attendance of Albert George Breakwell, the driver of the car, and who was in the employ of the British Motor-Coupé Company. It was thought the driver would know more about the accident than any one else. The Coroner cautioned Breakwell as to the serious nature of the enquiry, and said it might result in him being committed to take his trial on a charge of manslaughter.

Albert Breakwell deposed that he had had many years' experience as a driver of motor-cars, and during the week of the accident he had tested and tried the car to which the accident occurred. It worked very satisfactorily, and the top speed at which the car was geared was twelve miles an hour.

The Coroner: Is not that the limit allowed by the Local Government Board?

Witness replied that he thought fourteen miles an hour was the limit. Edge Hill was most dangerous, and he took special precautions in going down it at about ten miles an hour. Later in the day witness took a larger party out in the car, including the deceased. All went well until coming down Edge Hill again. Then for some reason the accident occurred. The car went suddenly on to its side, skidded, and travelled about another thirty yards, when it went on to its side again and upset. This was all witness remembered as he was rendered unconscious. The brakes were sufficiently powerful to pull the car up within its own length on the level or within a reasonable distance on a decline. When he commenced to descend the hill he had the car under control by the foot brake, which would not stop the car so quickly as the hand brake, the latter, however, being only intended for use in case of emergency. Witness tried the car in the morning, but did not remember doing so later. Until a week before the accident witness did not know the deceased. He added that nobody had anything to do with the control of the car but himself. The fact that one of the party sat next to him did not attract his attention from his work, nor was there any "larking." He had driven gentlemen hundreds of miles.

The Coroner: I don't think there is any doubt in the minds of the jury as to your ability. It is right you should also know that another witness has said you were quite sober.

Witness: I should be very sorry to attempt a drive a motor when in drink.

Several excellent testimonials were read as to witness's character as a driver.

Augusta Ehrdard, maid to Mrs. Haig, said that she had a seat in the car. It was not going fast when coming down the hill. A dog got out of the car and they went back for it. It was upon returning that the accident occurred. She did not notice the speed at which the car travelled, a ride in a motor-car being a new experience for her. She was thrown into the road, and her shoulder was fractured. She saw the butler, Mr. Metcalf, lying unconscious in the roadway. Witness admitted that she told Dr. Fenton after the accident that the car was travelling thirty miles an hour.

The Coroner said he had treated this witness as hostile, because it was quite clear to his mind that there had been a desire to keep back from the enquiry evidence which was material.

Several other witnesses were called to speak as to the speed at which the car was travelling. Thomas Rushwood, gardener, said it was "pretty fast," and Ann Barnes stated that it was "alarming." She prophesied that an accident would happen. Two other witnesses said the pace was from thirty-two to thirty-six miles an hour.

The jury returned a verdict of "Accidental Death," and severely censured the driver.

## MOTOR-CYCLE RACING AT THE CRYSTAL PALACE.

THE third motor-tricycle race, duration one hour, for the Crystal Palace Brossard was decided on the track on Saturday last, but owing to some slight accidents to two of the machines, the event was practically a walk-over for Mr. C. G. Wridgway. On the previous occasion Mr. S. F. Edge proved successful, after a hard fight with Mr. C. Jarrott, but on Saturday the last-named did not take part in the race, and the holder, after leading for a mile and a half, was dropped. Mr. F. Wellington officiated as judge, and Mr. F. W. Baily (Motor-Car Club) took the times. Owing to the overhauling of the machines, it was some three-quarters of an hour after the advertised time that Edge and Wridgway were started, Edge taking the lead. At a mile and a half Edge's machine slowed, and Wridgway quickly gained a lap, which advantage he increased to two laps at three miles. When the leader had covered four miles Edge dismounted for a change, and Wridgway, sailing away, was ten and a half laps (three and a half miles) to the good. At nine miles Edge was off again, and from this point practically retired. Wridgway covered 17½ miles in the half hour, and 34 miles 450 yards in the hour. Immediately after the finish, both Edge and Jarrott challenged the winner according to the rules of the competition. Wridgway's principal times were: Five miles, 8 min. 42 sec.; 10 miles, 17 min. 18 3-5 sec.; 15 miles, 23 min. 59 sec.; 20 miles, 34 min. 39 sec.; 25 miles, 43 min. 43 sec.; and 30 miles, 52 min. 30 2-5 secs.

## THE AUTOMOBILE ASSOCIATION.

At the West London Police-Court on the 13th inst. Mr. W. H. Stephenson, applied on behalf of the Automobile Association, of Holland Park Avenue, for a warrant, alleging that motor-cars of the value of £5,000 had been taken away from the premises between seven o'clock at night and three the next morning. He stated that the police were present, and it was added that the cars and motor-bicycles were being removed to a new depot in Hammersmith.—Mr. Plowden: Do you suggest that they have been stolen? Taking them away would not amount to a felony.—Mr. Stephenson submitted that there was strong evidence of a conspiracy to defraud the Company. Property of the value of £5,000 had been sold for £1,600, payable with £50 down and the balance in nine and twelve months.—Mr. Plowden said there might be some irregular proceedings in the matter, but behind there must be a claim of right. He asked why an explanation had not been requested of the parties against whom the application was made.—After some further remarks from Mr. Stephenson, the magistrate said it all appeared exceedingly wrong and irregular, but he saw no ground for the allegation that a felony had been committed. In the end he (Mr. Plowden) declined to grant a warrant.

In connection with the above matter, we have received the following letter from Mr. Sydney Atkins, of the Automobile Association:—"A number of our motor-cars having been (as we allege) improperly removed from the premises of the Automobile Association, Ltd., we have commenced an action for injunction and damages against the parties removing the same, and obtained an injunction against the same parties from using, selling, dealing with, or disposing of same. In the meantime we are obtaining a fresh stock of cars, as the contracts entered into furnish us with cars almost daily, and we are therefore all the same in a position to supply motor-vehicles on the shortest notice, as in the past."

## A MOTOR-CYCLE SMASH.

TILLING'S, LIMITED, v. LONDON AUTOCAR CO.

IN the Southwark County Court, on Tuesday, his honour Judge Addison, Q.C., heard a case brought by Tilling's, Limited, the well-known jobmasters and omnibus proprietors, against the London Autocar Co., 182 Gray's Inn Road, W.C., to recover damages for injury to a brougham caused by the alleged negligence of a driver in the employ of the defendant company.

Mr. Salter, in stating the case for Tilling's, Limited, said that on the day of the collision his clients' brougham was being driven to Waterloo, having Mr. Peter Keary, one of the managing directors of Pearson's publications, inside. The brougham had gone over Waterloo Bridge, and was stopped by the police where York Road runs across, it being then facing the Waterloo Road. The defendants' motor-cycle came up York Road from the direction of Westminster Bridge, and having reached the junction turned round to retrace its way and was going back again. The traffic was released and the brougham turned out into York Road, and was then proceeding with the motor-car slightly in front of it. The two vehicles thus went along until they came under the railway bridge, and at that point the motor-car suddenly made a loud noise, stopped short, and swerved out into the middle of the road—whether from the negligence of the driver or from something going wrong he could not say. It was a four-wheeled tricycle, with a petroleum motor: one of those things that go puffing along. The horse was upon it as soon as it swerved and began plunging about, with the result that damage to the extent of £10 8s. 6d. was done to the brougham; and the plaintiffs also sued for £1 5s., the loss of the horse's keep during a period of rest.

The driver of the brougham, named Pine, deposed that he had been a driver for twenty years, and having borne out counsel's opening statement said the motor-cycle crossed in front, and on the other side. The horse jumped and pulled the brougham over the motor-car; the driver of the latter fell; the passenger jumped off.

Cross-examined by Mr. Glasgow, he said there was a noise as though something had burst.

Mr. Peter Keary, who was inside the brougham, said he was observing the motor-tricycle as the traffic was going on. When the accident happened it was absolutely in front, and the horse put its foreleg upon it.

Cross-examined, he thought the motor-car was to blame. The brougham was crawling along.

Garwood, a cabman, in his evidence said the thing looked very like a practising or trying machine. He noticed the driver sounded his trumpet.

Counsel explained that was a kind of horn, but that did not quite appeal to the cabby, and ultimately all agreed with the Judge, who suggested that the driver sounded something on the motor-car.

Continuing his evidence, the cabman asserted that he saw the motor-tricycle shoot out all of a sudden in front of the brougham, and before the driver could pull up he was on top of the machine.

C. J. Johnson, an omnibus driver, Police-Constable L.R. 29, and Edgar Cole, the yard foreman at Messrs. Tilling's, also gave evidence.

For the defence, David Edwards, the driver of the quadricycle in question, was called. His business, he said, was to drive motor-cars to

show customers. He had been with the London Autocar Co. for nine months, previous to which he had been with the Motor Manufacturing Co. He had been engaged in engineering since he left school, and understood the construction of the machines. On the day of the accident he was driving Mr. Percy Walker to Waterloo Station, and just before the collision was pedalling the machine as an ordinary cycle at a speed of four or five miles an hour. Suddenly he felt a distinct jerk, the machine was swung round, and he was knocked off under the car. Simultaneously with the jerk he saw the horse's head in front of him. The car was in perfect order.

Cross-examined by Mr. Salter, he said he was not in the middle of the road, and the engine was not working.

Mr. Percy Walker, who was on the quadricycle at the time, said he caught sight of the horse's head, and felt a blow on the car immediately before it was swung round. The driver had been pedalling for some time before.

Mr. Charles Rush, manager of the London Autocar Company, said the sale price of the machine was £105, and that was the second time it had been out. It had cost £12 to repair, and with £10 for depreciation he counter-claimed for £22.

In reply to questions from the Judge Mr. Rush described the action of the motor, and after T. Simmons had deposed as to the perfect nature of the steering gear counsel replied.

For the defence Mr. Glasgow pointed out variations in the evidence of the plaintiffs' witnesses. He had no witnesses who saw the accident, because it took place behind the driver's back. The driver of the brougham, however, heard a bursting noise and the tire had actually burst at the same moment that the cycle was swung round. The tire was struck by the axle of the brougham and burst. The axle was also bent, and that had caused it to act as a drag on the machine. His view that the accident was caused by the blow from the brougham was consistent with the appearance of the horse's head on a level with the passenger of the quadricycle.

Mr. Salter having replied, the Judge gave a verdict for the plaintiffs for the amount claimed, and dismissed the counter-claim.

## MORE PROSECUTIONS FOR ROAD RACING.

AT Spalding Police-Court on Tuesday, before a full bench of magistrates, F. R. Goodwin, of Newcastle, the holder of the twelve hours and other long distance cycling records, was summoned for riding a bicycle furiously to the danger of the public. The occasion was Goodwin's recent ride of 244 miles in twelve hours. The defendant did not appear in answer to the summons. The Bench decided to require the defendant's personal appearance, and decided to issue a warrant if he failed to attend the next Court. The magistrates also suggested that proceedings should be issued against those in charge of the motor-vehicles by which defendant was paced.

## A FURIOUS DRIVING CASE AT HARROGATE.

AT the Harrogate Borough Court on Tuesday, Mr. Ambrose Valentine, consulting engineer, of Leamington Spa, was summoned by the police for driving a motor-car furiously in Parliament Street, Harrogate, on the evening of October 7th, when a little boy was knocked down by the car. Witnesses were called by the prosecution, who stated that the defendant was going faster than he ought to have done. One of the witnesses estimated the speed at ten or eleven miles an hour. Mr. Crowther Davies, who defended, denied furious driving, and said that before going down the street the defendant blew the horn and moderated his speed. The boy ran out of a by-street into the motor-car, and was knocked down. The defendant also denied furious driving, and said that the surface of the hill was so rough that he was always compelled to go slow at that point. The Bench were of the opinion that the case was proved, and imposed a fine of £1 and costs.

ON Wednesday a lad was run over by a motor-car that commenced plying between Doncaster and Bentley on the previous Saturday.

We learn that not only are Messrs. Aalbrecht & Co., cycle makers, of High Street, Ramsgate, and High Street, Broadstairs, arranging to carry a stock of motor-car spirit and other accessories at both their depôts, but that they are also laying themselves out to undertake repairs to motor-vehicles.

MR. J. BURNS, of 44 Berners Street, Oxford Street, London, W., is now laying himself out to meet the requirements of automobilists in the way of electrical accessories on a large scale. He has sent us a number of leaflets describing among other articles the E.S. dry cells, accumulator induction coils, transformer coils, contact breakers, ampere and volt meters, sparking plugs, lamps, switches, etc. An illustration is given of a novel combination Mr. Burns is introducing, viz., a combined horn and lamp.

# THE Motor-Car Journal.

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## COMMENTS.



IT is with great satisfaction that we witness the great change which is taking place in the views regarding automobilism and automobiles, expressed by what we may term the "outside" journals and especially those partly, if not wholly, connected with horses or with sports and pastimes in which the horse takes a prominent part. *Country Life Illustrated* is the latest periodical to acknowledge that "slowly and surely the cult of automobilism is gaining ground. The number of self-propelled

vehicles," remarks our contemporary, "one sees upon the road is increasing almost daily, and it is not unsafe to prophesy that before next summer has come round the automotor, in one form or another, will be a regular feature of our highways. Naturally it will have to live down the prejudice that has always to be reckoned with where any threatened innovation is in question, but history will repeat itself in this connection as it has done with so many drastic changes in our social life. The motor-car has come to stay, and its general adoption is only a question of expense when once its advantages have come to be appreciated and initial prejudices have been conquered." Even as regards the question of cost our contemporary considers that this is, if anything, in favour of the self-propelled vehicle, while as regards convenience the motor-car scores considerably.

Any Excuse  
Better than  
None.

WALES is often extolled as a country where education has reached the highest pitch of excellence and where intelligence is plentifully distributed among the people. But, if recent experiences in connection with motor-car matters

at Aberystwith and Aberdare are to be regarded as typical of the Principality, a little more common-sense will have to be imported, or somehow given to those seated in authority. The Aberdare Motor-Car Co. was lately formed to run automobiles for hire in public thoroughfares. Elsewhere licences have been freely granted, and the public have shown appreciation of such services. Bearing that in mind the Hackney Carriage Committee of the Aberdare Urban District Council recommended that licences be given for four motor-cars. Mr. Rees Llewellyn opposed, not only because such cars were dangerous but because the brakes now on the road are driven by old colliers who had been injured, and if the motor-cars were introduced these men would be thrown out of work—a clear recognition of the superiority of the automobile. Mr. Howells regarded the present brakes as nuisances, and others joined in the controversy *pro* and *con*. Ultimately the matter was deferred, and the advocate of the colliers as drivers must be congratulated on successfully blocking an improvement—for awhile.

A Curious  
Position  
at Aberdare.

SINCE the foregoing was written the question of granting licences for public motor-car services has taken a new turn, for on Tuesday night a public meeting of Nos. 1 and 2 Wards was held to oppose the granting of licences to the motor-cars introduced into the town. A resolution that an appeal be made to the Aberdare District Council to refuse to grant licences for motor-cars to any private individual or public company, but that the Council themselves should provide and run motor-cars for the benefit of the ratepayers, was proposed by Mr. Arthur Thomas, seconded by Mr. Rees Davies, and supported by Mr. P. D. Rees, the miners' agent. Mr. W. D. Phillips, secretary of the Motor-Car Company, said it was agreed that better means of locomotion were required, and as no one else seemed disposed to move in the matter his Company had determined to provide such improved means. The resolution was, however, carried by a large majority, and a deputation was appointed to wait on the Council. The position is, therefore, a peculiar one, for while on the one hand the District Council is opposed to the granting of licences because it will throw out of employment the drivers of the horse-drawn brakes, the inhabitants of the town want the motor-car, but wish it to be municipalised. The position of the Motor-Car Company is, therefore, just now most unenviable. What the outcome will be time alone will show.

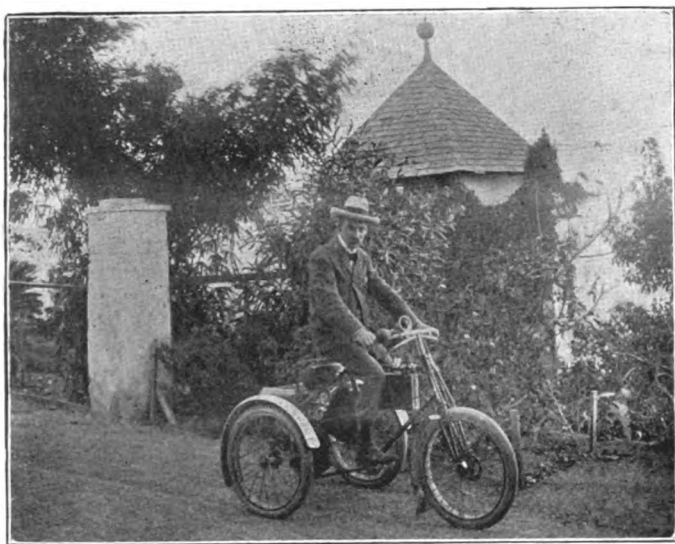
Are American  
Automobiles  
Too Light?

THE relative lightness of the Whitney and Stanley steam-carriages have been the cause of much comment on the part of English automobilists since these vehicles began to make their appearance on this side of the Atlantic. This lightness appears to be a prevailing feature of American automobiles—a feature, however, which is not meeting with the approval of the New York *Horseless Age*. In commenting on this matter our contemporary recently remarked: "Many of our inventors and manufacturers are producing vehicles altogether too light for the service required of them. The public, they contend, demands light carriages, and we must give the public what it wants. But it is not always wise to humour the public, for the public is fickle and inclined to change its mind suddenly when it discovers that it is wrong. Hence it is manifestly the true policy, when the public is not sufficiently informed, as in motor matters, to look further ahead and build machines which will give permanent satisfaction, knowing that the public will see its error eventually and choose the solid and substantial thing. A little ephemeral popularity is dear-bought if it is followed by failure and loss of reputation." In its last issue to hand, the same journal, in commenting on Mr. Thornycroft's recent British Association paper, returns once more to the question. "English work wagons no doubt seem heavy to our American inventors who are endeavouring to build durable vehicles out of cobwebs and pipe stems, but Mr. Thornycroft, it will be seen, regards them

as too light to meet the commercial conditions. If in England where the roads are comparatively good such weights are found necessary, what weights will be required for American cobblestones, pitch-holes and muddy or sandy highways?"

#### Motor-Cycling in Algeria.

THE motor-cycle is now making its appearance in Africa, the accompanying illustration depicting Mr. S. E. Guy, of Algiers, mounted on his machine. In a letter in hand from Mr. Guy he states that he would like to receive from English builders of light motor-cars and cycles par-



ticulars of their vehicles, with prices, delivered either at Algiers or at Newport, Mon. Mr. Guy's full address is, "care of M. Prosper Durand, Algiers, Algeria."

#### The Proposed Ladies' Automobile Club.

THE meeting at Lady Harberton's house at 108 Cromwell Road, W., in connection with the proposed Ladies' Automobile Club was duly held on Friday evening last, the 20th inst. Mr. J. S. Harvey presided, and among those present were Mr. and Mrs. Buttemer, Miss Isabel Piggott, Mr. C. Cordingley, Mr. E. M. Bowden, Mrs. Sonneborn, Mr. and Mrs. Battinson, Mrs. Bazalgette, Miss Fazan, Miss N. G. Bacon, Miss Drew, Miss Unwin, Mr. Wellington, Mr. F. Vivian Hallett, Miss C. Crates, Mrs. Masters, Mrs. Sallmans, Miss Gibson, Miss Shaw, Hon. Coralie Glyn, Miss Gurney and Miss A. Gurney, Mr. J. C. Horobin, Mr. and Lady Isabel Margesson, Mr. T. Harrington Moore, Miss Frances Lord, and Miss Penderell-Moody. Among the letters read was one approving of the venture from Sir Francis and Lady Jeune, who have recently been enjoying an automobile tour. Madame Sarah Grand and the Duchess D'Uzès also sent their good wishes. The Chairman explained that owing to the action of the Automobile Club of Great Britain in practically excluding ladies from membership, it had been thought desirable to start a club for ladies only. This idea, however, had not been taken up with quite so much enthusiasm as was desirable, and so it was now proposed to admit gentlemen to the new club. A resolution expressing the desirability of forming a committee of ladies and gentlemen who would undertake the initiation of a club for both sexes was carried, and the question of organization was adjourned. During the course of the meeting three short papers were read by respectively Mrs. Bazalgette, Miss Fazan and Miss Bacon. We print the two latter in our columns of the present issue, pressure on our space compelling us to hold over Mrs. Bazalgette's paper until next week.

#### Motor-Cars in Gloucestershire.

A LONG discussion on the speed of motor-cars took place at the last meeting of the Gloucestershire County Council. The Chairman considered twelve miles an hour was a great deal too high a pace to be used on a public roads. Ten miles an hour he thought a very good speed for use on the roads. Another member remarked that "at present these motor-machines went 'whizzing' about the country practically at any pace they liked, endangering the lives of other subjects of her Majesty who for the moment were using the roads." Eventually a resolution was adopted setting forth the desirability of the speed of motor-carriages being brought in line with that of horse carriages, and that they should be numbered in a conspicuous manner.

#### The Run to Brighton.

FROM all we can hear, the run of the Motor-Car Club to Brighton on Monday, the 13th prox., will be a great success, and already the owners of more than a hundred cars have signified their intention of being present. The arrangements are well in hand, and those who have not yet signified their acceptance of the Club's invitation to motorists should do so before November 6th. At 10 a.m. on the morning of the 13th prox. the meet will take place at the Hotel Metropole, London, and the start will not be delayed. At the White Hart Hotel, Reigate, a luncheon will be provided, and the banquet at the Hotel Metropole, Brighton, at 8 p.m. promises to be an important and brilliant function, attended by all the leading motor-carists and motor-cyclists in the country. Given good weather, the third anniversary of the repealing of the Act which prevented the use of automobiles in Great Britain will be celebrated in a way that should demonstrate to the public, most emphatically, the possibilities of the motor-car.

#### "Who Pays the Damage?"

AN amusing incident is related by a correspondent of the *New York Horseless Age* in an account of a motor-car trip from the White Mountains, through the Connecticut Valley, to New York. "One driver whom I met," states the correspondent in question, "on my trip through New Hampshire had a mind of a decidedly practical turn. He was a Hebrew peddler, and was driving a poor, jaded creature attached to a heavily-laden wagon. On seeing the motor-carriage approaching, he excitedly raised his hand as a signal to stop, which I did at a distance of probably 300 ft. As the horse showed no signs of fear and the man seemed to be waiting for something, I called for him to come on, when, with a characteristic gesture, he said: 'Vell, if I come on, who pays the damage?' The man's eye for business was beautifully illustrated by this incident, but it is needless to say that the question of damage had no chance to arise."

#### The Ladies' Papers.

THOSE periodicals issued for the instruction and amusement of the fair sex are bearing evidence of the universal interest in automobiles. In one of the recent autumn fashion numbers we read of a "cloth skirt of automobile red"—evidently a compliment to the fiery hue of the car upon which the Hon. C. S. Rolls navigated the tortuous paths at the Crystal Palace in the spring; and in several fashion plates we have noticed ladies on motor-cars depicted in most becoming costumes. This partiality of ladies for automobile red, which has been a marked feature of the Paris season of 1899, is dealt with in some of the American fashion journals in a very halting way. They wonder whether American ladies will be similarly inclined; others are less hesitating, and one boldly declares, "Our society has a bit of originality, to say the least, and may let the French have a monopoly of the automobile red."



**Motor-Cars at Honolulu.**

In a recent issue we referred to the fact that motor-cars were being introduced at Martinique, in the West Indies. We now learn that a Company has just been formed at Honolulu with the title, The Automobile Company, of Hawaii, and with a capital of £400,000, to introduce electric vehicles in the Hawaiian capital. A charging plant will, it is said, be installed, capable of supplying 100 carriages. Thirty electric vehicles have already been purchased in America.

**Lady Jeune on Motor Touring.**

LORD AND LADY JEUNE have recently experienced the delight of a motor-car tour, and in Saturday's *Daily Telegraph* Lady Jeune had an article on motor touring, in which she said, "There is no more delightful mode of seeing England than driving through it on a motor-car." We are glad to see so distinguished a leader in social circles publicly acknowledge her interest in the new means of locomotion, and



A REMINISCENCE OF THE RECENT BORDEAUX-BIARRITZ RACE.—THE HON. C. S. ROLLS ON THE WINNING "TOURIST" CAR.

the way in which she meets the charge against motorists of frightening horses is decidedly good. "If the poor, tired horse," says Lady Jeune, "who suddenly finds himself lashed furiously, or jobbed in the mouth by a nervous driver, could only speak, he would ask to be allowed to meet his rival face to face, when a few moments of tranquil contemplation would reassure him that the much-dreaded motor was less to be feared than his master."

**Motor-Cars in India.**

AN American contemporary publishes a letter from an Indian correspondent, Mr. Sakharam Martand, of Dhar, Central India, in which this gentleman states that he is convinced that it is possible to get a strong, reliable and economically working car answering his purpose. "But I don't know what firm can supply my want. I therefore give below the particulars of my requirement, and shall feel obliged by your kindly informing me the name of the firm you think most able to do the work. I have to use the car on passenger service daily on a road which is ordinarily metalled. The particulars are as follows:—1. The car must carry 40 passengers and their luggage of 20 lb. each. 2. Its speed per hour should be from 10 to 15 miles on level road. 3. It must be capable of running daily at least 70 to 75 miles with full load and without strain on the machinery. 4. The gradient on the road on which the car will have to run is at the highest 1 in 25, or 4 per cent. The carriage must go over these easily at the rate of 6 to 8 miles per hour.

5. During the rainy season the road is metalled two miles a time. The car must run without strain over the metalling at the rate of 8 to 10 miles to the hour. 6. The machinery should be such as could be handled by an ordinary mechanical engineer. 7. The traction may be by steam or by oil motors. In the former case wood must be capable of being used as fuel." Probably the builders of heavy steam vehicles in this country will send Mr. Martand particulars of their productions.

**Motor-Car Dangers.**

"PAZIENZA," writing to the *Spectator*, suggests that "probably nothing will be done (to effectually regulate the pace of motor-cars) till a Royal Prince breaks his neck or a celebrated beauty her nose." We sincerely hope the position is not so bad as that, for a Prince with a broken neck or a beauty with a dislocated nose would be sorry spectacles for the public—besides the inconvenience to the parties thus brought into range for universal sympathy. The remedy lies largely with the owners of horses, and even at the risk of appearing to give undue reiteration to the advice we would urge all horse owners to get their steeds accustomed to automobiles. The owners of the latter will gladly give opportunity for such education, and by such action being universally followed the likelihood of danger will be practically destroyed.

**A MOTOR-CAR TRIP TO BRIGHTON.**

MR. G. D. BARNES, of Brondesbury, N.W., has favoured us with the following short but interesting account of his recent automobile trip to Brighton: "On Saturday, October 14th, I took my second son for a run to Brighton, leaving Willesden Green at 9.30 a.m. My car is a Benz 8-h.p. dog-cart built to seat four persons, but I often take six. We ran through Kilburn, down Edgware Road to Marble Arch, but owing to the wood-paving being up had to go through some back streets, eventually turning into the Park at Grosvenor Gate, then through Hyde Park Corner to Grosvenor Place, passing Victoria Station, then over Vauxhall Bridge—which seems to be a temporary structure, and very congested with traffic—thence to Oval, Kennington Park, Brixton Hill, making slow progress owing to usual road traffic—buses and those bugbears trams innumerable. Owing to the very sensible form of rubber tires fitted by the Benz firm, the tram lines do not affect the running of the car. It did not skid once or get any twisting motion, but ran on and off the tram lines almost as if on a good, level road. The tire is very broad and flat. Continuing on through Streatham and Croydon—I might say endless Croydon—and then the country on to Merstham, the time being 11.15, which, as Willesden Green is five miles from Hyde Park Corner, makes about 25 miles in 1½ hours. The country was looking lovely, the autumn tints showing to perfection, the sun shining, the roads (after Croydon) perfect—no mud, no dust. Our pace now got faster, but at no time did I attempt to put the car to her full speed. Redhill was soon passed, as was Horley and Chequers. Poundhill was rather loose up the hill, but good at top and onwards. Balcombe was rapidly run through, and Haywards Heath was reached at 12.45. So the 43 miles were done in 3½ hours—about 14 miles an hour. Having arranged for two friends from Brighton to meet me there at 3 p.m., I stabled the car at the Railway Hotel and lunched at same place. The surrounding scenery being most interesting, I took a look at it from the top of the hill. At three o'clock my friends arrived, and at 3.15 we started for Brighton, via Ditchling and Clayton. Although Clayton Hill is stiff my car took it on middle speed, and I did not use my low speed at any time. Brighton (14½ miles) was reached at 4.20. The amount of motor-car car spirit used was three gallons exactly; water lost by evaporation under one quart. This car has a flanged cooler in front and pump, in addition to the old-style condenser, and

practically uses no water, or, I should say, loses no water by steaming. On Sunday we took the inland road to Worthing (12 miles). Nothing of note occurred, but Worthing people seemed much interested, and remarked on the very quiet running, which is mainly due to the two-cylinder system, and doing away with the long exhaust valve levers; barring electric, it is the quietest car I have ever tried, and they are many and the systems various. The time taken running to Worthing was 38 minutes, and 39 minutes return. I housed my car at a friend's stables. In showing the engine works to an enquiring mind on Monday I accidentally smashed the lubricator glass, but Messrs. Monk & Lonsdale, of North Road, repaired same by an ingenious manipulation of a tin cone, and charged quite a nominal sum. On Tuesday, my two friends, son, and self, started back, but *via* Patcham and Handcross. I kept my car at lowest possible speed, with high speed belt on, by shutting down supply of vapour, as I wished to see the country. Up Handcross Hill, Mrs. Knight, who had never steered or handled a car, drove the vehicle unaided, we three males walking to stretch our legs. I left the car running at lowest gear.



After top of hill, my son, twelve years of age, drove her on middle speed six miles. I then took charge to Reigate, where we stopped to refresh, the time being close on one o'clock—we left Brighton at ten. Messrs. Marriage & Co. supplied me with some petrol. We left at 3.30 for Croydon, arriving at 4.20, and dropped my friends, who returned to Brighton by train, they expressing unbounded admiration at the ease and quickness as well as the quietness of running. Just after I left them one of the two brake rods snapped at the thread, so I ran round to a wheelwright, who soon welded a new length of rod and tapped and cut a new thread. We left Croydon at 5.35 and quietly ran over the more or less bad roads to London and on to Willesden Green, arriving home at 6.55. The engine gave no trouble, and I did not touch a screw or alter a belt from start to finish, with the exception of what I have already stated. I enclose a photo of the car."

THE De Dion-Bouton British and Colonial Syndicate, Limited, has been registered, with a capital of £6,000, to acquire the business of dealer in and agent for motor-cars, motor-cycles and the component parts and accessories thereof carried on by H. O. Duncan at 3 Rue Meyerbeer, Paris, and to carry on the business of motor-car, motor-cycle, bicycle, and carriage builders, etc. The first directors (to number not less than three nor more than seven) are: T. H. Weguelin, R. H. Fuller, the Hon. J. Scott Montagu, S. F. Edge, and H. O. Duncan. The Company inform us that they are now in a position to take orders for De Dion, Bouton & Co.'s new 3-h.p. voiturette, and, of course, for tricycles and quadricycles.

## THE AUTOMOBILE CLUB OF GREAT BRITAIN.



THE next election of candidates for membership will take place on the 31st inst. Members who desire to propose friends as members are reminded that the subscription of a member elected after October 1st covers the period ending December 31st in the year following.

Applications for seats at the annual dinner of the Automobile Club, which is to take place at the Hotel Metropole on November 14th, are being daily received. Members are reminded that seats will be allotted in order of priority of application, and that the number of seats is limited. Application with remittance, 10s. 6d. per head, should be made to the Accountant's Department of the Club, Messrs. Andrew W. Barr & Co., 30 Moorgate Street, E.C.

A large number of private motor-carriages owned by members have been entered for the meet and drive to Sheen House Club on November 14th. Members are reminded that in order to gain admission to Sheen House Club on this occasion it will be necessary to have a special ticket, which can be procured from the Secretary of the Automobile Club.

The clubs which are recognised by the Automobile Club de France are the following:—The Automobile Club of Great Britain, and the Automobile Clubs of Belgium, Austria, Switzerland, Turin, Germany and America.

The Committee of the Automobile Club of Great Britain desire to point out that entries of English carriages for the Gordon-Bennett International Automobile Cup can only be made by members of the Automobile Club of Great Britain and through this Committee. An entry for a contest for the Cup must be made prior to January 1st in the year in which it is to be contested. Further particulars may be had on application to the Secretary of the Automobile Club of Great Britain.

A Committee is sitting to decide on a design for a badge for the Club. It is hoped that the badge will be ready before November 14th.

The Racing Rules Committee is in communication with the National Cyclists' Union and the Amateur Athletic Association with reference to the settlement of racing rules. Generally, the opinion of automobilists appears to be that driving an automobile is in many respects akin to steering a yacht, inasmuch as success results from a combination of a good machine and skilful direction, and that there should be no rule to prohibit the racing of an amateur automobilist against a professional automobilist in a race open to both amateur and professional drivers.

Several important matters are under the consideration of the Committee, and it is possible that a meeting of manufacturers to consider proposals may be called early in November.

At the last meeting of the Camberwell Vestry, in connection with a recommendation of the Scavenging Committee that six dust vans be ordered at £55 each, Mr. Somerville asked if the committee had considered the advisability of purchasing motor dust vans, which he believed would enable the work to be done more efficiently and at a much cheaper cost. In reply, Mr. Ayers stated that the Surveyor had the matter under consideration.

At a meeting of the Watch Committee of the Newcastle Corporation on Friday last week, the Chairman (Alderman Sanderson) made a complaint of the speed of motor-cars, particularly in going round the corners of the streets of the city, which, in his opinion, was often extremely dangerous to the public. Instructions were given to the Chief Constable to issue orders to his men to look carefully after such cars, and see that there were no further complaints in this respect.

# The Hugot Motor-Voiturette.

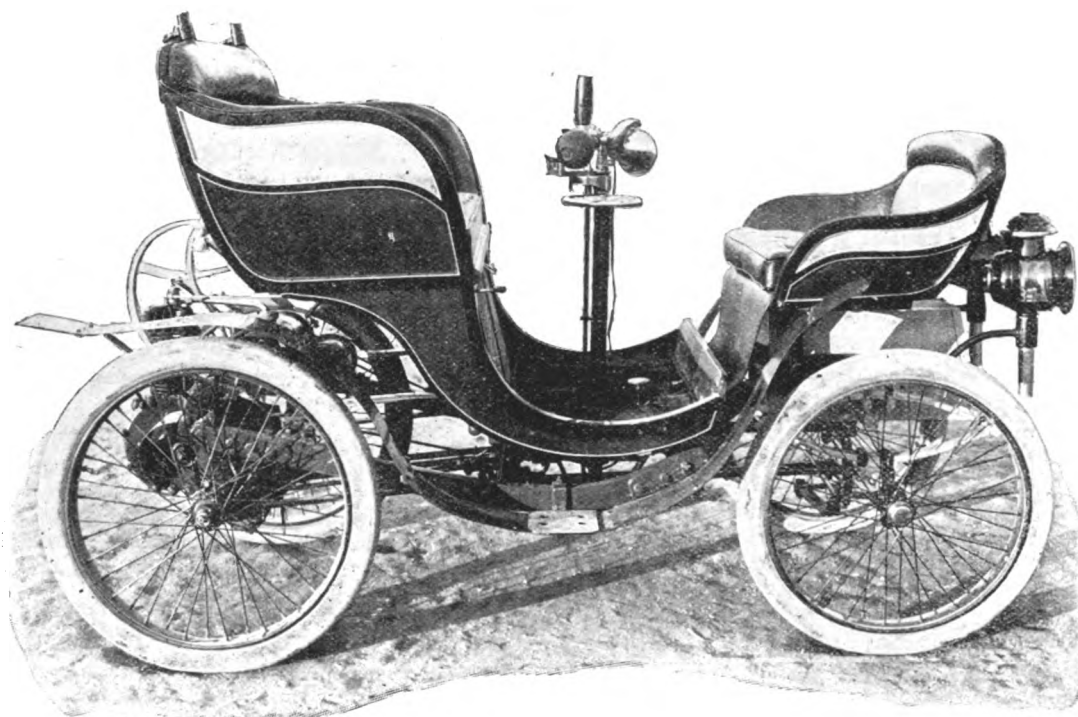


FIG 1.—GENERAL VIEW.

**A**MONG the many new types of light motor-voiturettes lately introduced is the one illustrated herewith, and made by M. Hugot, of 8 Rue Sainte Apoline, Paris. The body of the car is suspended on the steel frame by C springs at the rear and plate springs at the front, which are claimed to reduce the vibration experienced by the riders to a minimum. The vehicle has accommodation for three persons, two facing the direction of progression and one on a seat contrived at the front on the box containing the battery, tools, etc. M. Hugot employs a  $2\frac{1}{4}$ -h.p. De Dion motor of the latest type, the ignition being, of course, electrical and the cooling by means of radial discs around the cylinders. The carburettor is of the Longuemare type. Two speeds are provided, by means of which, assisted by the variation of the sparking device, speeds of from 14 to 28 kilometres per hour on level roads and from 4 to 14 kilometres uphill can, it is claimed, be obtained. The transmission and variable speed

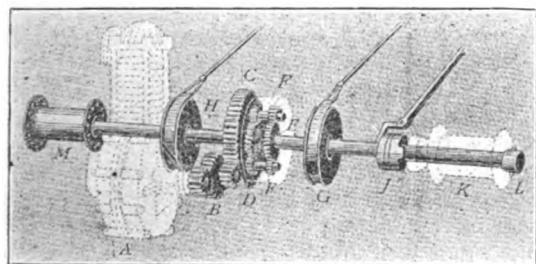


FIG. 2.—VIEW OF HUGOT VARIABLE SPEED GEAR.

gear presents some interesting features. As will be seen from Fig. 2, the motor is located at the back of the car and drives the rear road wheels, represented by *M* and *K*, through the intermediary of the pinion *B* and the differential gear, which is made up of the pinions *C*, *D*, *E*, *F*. At *J* is an ordinary step clutch, by means of which the wheel *K* can be made rigidly connected with the right half of the axle or to run

loose on the same. When the low speed is in gear, which in the Hugot car is the normal position of the transmission device, the wheel *K* is rigidly connected with its part of the axle, and the transmission of the power of the motor is made to the two rear road wheels through the differential gear. Around the differential gear is a gear case which also serves as a drum for the low-speed brake (not shown in Fig. 2). To change over from the low to the high speed the band brake *G* is tightened, the clutch *J* being at the same time thrown out, so causing the wheel *K* to run loose on its axle, the result being that the wheel *M* becomes the only driven one and runs at double the speed of the low gear. To change back again the high-speed band brake *H* is applied. The gear is both simple and ingenious, the only drawback we can notice being that at the high speed only one of the rear wheels is driven. As the high speed in voiturettes is never very excessive it is probable that the drawback alluded to is more imaginary than real. The car weighs rather less than 4 cwt. and can, it is claimed, mount gradients of 1 in 10. The road wheels are of the suspension type, fitted with pneumatic tires; the car is 8 ft. long by 3½ ft. wide. The Hugot car is being introduced into this country under the name of the "Paris" by the United Motor Industries, of 3 Rue Meyerbeer, Paris.

THE Hiram S. Maxim Automobile Syndicate, Limited, has been registered with a capital of £25,000 to adopt an agreement with H. S. Maxim and J. de Meray, and to carry on the business of motor-car, motor-cycle and bicycle manufacturers, engineers, etc.

AT Kenilworth, last week, William Williamson, of Coventry, was summoned for driving a motor-car at Kenilworth without a red light at 7.15 p.m. It appeared that defendant was burning a white light in front of the car, but neglected to have a red one behind, and it was stated it did not seem to be generally understood among drivers of motor-cars a red light behind was necessary. A fine of one guinea, including costs, was imposed.

## MOTOR-CARS ON THE CONTINENT.

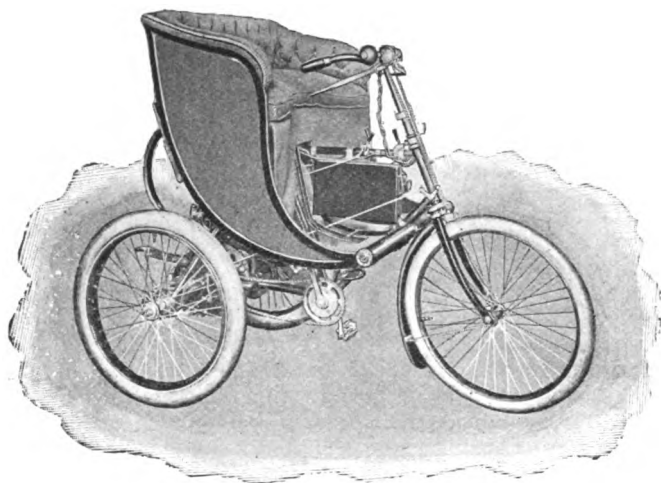
(From Our Own Correspondent.)

### Recent Motor-Cycle Races.

SEVERAL provincial towns have recently held motor-cycle races, and it is evident that the popularity of the sport continues to increase. On the 15th instant two races were decided at Saintes and one at Limoges. In the first of the two events at the former town Cibron was the winning chauffeur, and Favier proved victorious in the second. At Limoges, Bertin of Marmande finished first, covering the 9,768 metres in 13 m. 31 s. The day following witnessed a 25 kilometres course on the Marseilles track in which five competitors took part. The placed men were T. Reboul, Bourret, and Cavasse, who finished in the order named. The winner's time was 31 m. 29 $\frac{3}{4}$  s.

### A Novel German Motor - Tricycle.

At the recent motor-car exhibition in Berlin, the Berliner Maschinenfabrik Gesellschaft (Henschell & Co.), of Charlottenburg, showed the novel motor-tricycle illustrated herewith. As regards the motor and transmission the machine resembles an ordinary motor-tricycle, but in place



of the rider being mounted on a saddle he is provided with a comfortable upholstered and spring-suspended seat. The engine is started by means of the pedals in the usual way, but convenient foot rests are provided for use when once the motor is in operation.

### The 100-Kilometre Motor-Cycle Record.

RECENTLY Béconnais has had matters all his own way as far as motor-cycle achievements on the track are concerned, and one has almost acquired a habit of invariably looking to him for new figures. This time, however, it is not he but Gasté who has set up fresh records. During the first half or so of his ride on the afternoon of the 16th inst. at the Parc des Princes, no one thought of records, as the chauffeur was well outside the existing figures. At the sixty-eighth kilometre, however, the slaughter commenced, and from that point to the finish new records were set up. The time for the complete distance of 100 kilometres was only 97 m., or at the rate of nearly 62 kilometres per hour. The new times are:—

|               | H. | M. | S.               |
|---------------|----|----|------------------|
| 68 kilometres | 1  | 5  | 59 $\frac{1}{2}$ |
| 70 "          | 1  | 7  | 51 $\frac{1}{2}$ |
| 80 "          | 1  | 17 | 47 $\frac{1}{2}$ |
| 90 "          | 1  | 27 | 54 $\frac{3}{4}$ |
| 100 "         | 1  | 37 | 24 $\frac{1}{2}$ |

### The Proposed Paris-St. Petersburg Race.

At the last meeting of the Committee of the French Automobile Club Messrs. Thévin and Houry presented the report of their journey made with a view to organizing an automobile race from Paris to St. Petersburg. They concluded that, owing to the primitive state of the roads in many places, such a contest is impossible.

### M. Léon Serpollet.

M. SERPOLLET, the well-known inventor and constructor of automobiles, has quite recovered from his recent severe illness. He signalled the end of his convalescence last week by giving a complimentary dinner at his residence at Villiers-sur-Marne to Dr. A. Lucas, whose medical skill brought him safely through his illness.

### The Renault Motor-Tricycle.

A NEW company has just been formed in Paris (33 Rue de Naples), with a capital of £20,000, to acquire and exploit the patents in the Renault motor and motor-tricycle, described in a recent issue of *The Motor-Car Journal*. The title of the new concern is L'Energie, Société des Moto-Cycles et Automobiles, brevets Renault et autres.

MOTORISTS in Dublin and district may be interested to learn that motor-car spirit is being stocked by Messrs. Beckett, 17 Fleet Street, Dublin.

MESSRS. P. SOUVESTRE AND CO., LIMITED, has been registered with a capital of £5,000, to acquire the business of importers of and dealers in motor-cars hitherto carried on by Pierre Souvestre and Axel C. Steen-Nielsen at Liverpool, to adopt an agreement with the said vendor, and to carry on the business of cycle, carriage and general manufacturers, mechanical engineers, etc.

THE Motor Manufacturing Co., Ltd., ask us to give a denial to the rumours which allege that this Company has been compelled to withdraw its recently-produced new type of light two-seated car from the market owing to irremediable defects. On the contrary this vehicle, already so well known as the "Princess," has carried out very numerous and exhaustive trials in the most satisfactory manner, and the Company inform us that they are daily booking orders from clients who have had long trial runs on the car.

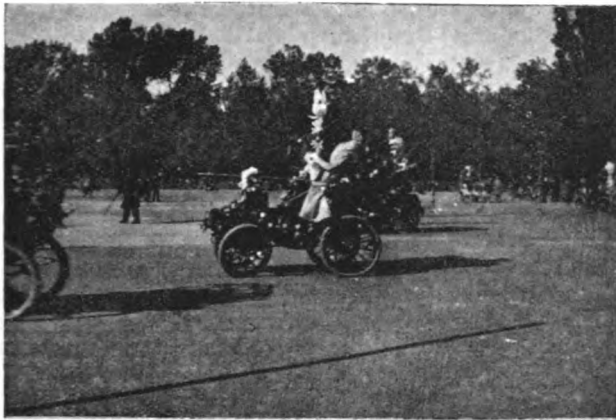
THE officials and staff of the Birmingham Small Arms Co., Ltd., Birmingham, held their annual dinner at the Crown Hotel, Leamington, on Saturday, the 21st inst., when about a hundred persons sat down. A large party of the officials was met at the station with a motor-car and driven to Mr. Charles T. Crowden's motor works, where they inspected in detail the motor-cars of various descriptions there designed and in course of construction, and expressed themselves highly pleased with what they saw.

THE Automobile Co., of America, of New York, have lately completed two new types of vehicles propelled by the "American" petroleum-spirit motor: a stanhope phaeton and a brake. The stanhope is so constructed that if the top is taken off a second seat may be opened up in the rear, thus accommodating five persons. Power is supplied by a 7-h.p. twin-cylinder balanced motor. The weight of the vehicle is 1,400 lb., the extreme mileage on one supply of fuel 150, and the maximum speed 28 miles an hour. The capacity of the water tank is 8 gallons. The touring brake has petrol storage accommodation sufficient for a run of 450 miles. The 8-h.p. motor is vertical and is placed in front of the vehicle, leaving the whole of the "body" free for passengers and luggage. There are three forward and three reverse speeds, and an emergency brake on the rear road-wheels in addition to the ordinary band brake. Solid tires and wooden wheels are preferred for this class of vehicle.



## VOITURETTE FETE AND RACE IN PARIS.

**F**AVOURED with glorious weather, a large attendance of spectators and a numerous and thoroughly representative entry of cars, the fête held on the 18th inst. at the Rond-Point de Longchamp, Paris, under the auspices of *Le Sport Universel Illustré*, could scarcely fail to be a



success, in spite of the lamentable lack of management which characterised the proceedings. Timed to commence at 9.30, the first of the competitors in the opening item on the programme did not get under weigh until 10.15, and punctual arrivals were entertained (?) for three-quarters of an hour by some dozens of workmen engaged in completing final arrangements. And then, too, when a start had been made a number of people were permitted to invade the track, where they impeded the competitors and obstructed the view of the spectators.

Apart from these drawbacks, however, the fête was most enjoyable, the cars being prettily decorated and in most cases managed with much skill. The scene of the contests, the Rond-Point de Longchamp, is an ideal spot for a gymkhana, as it rejoices in a perfectly level surface, so hard and firm that the vehicles were able to take sharp corners at a high rate of speed without danger of skidding to any appreciable extent. The vehicles eligible to participate were all types of two or more seated voituresses, propelled either by steam or petrol, of which the catalogue price did not exceed £240, and no less than fifty-three automobiles were entered as complying with these conditions.

The first item on the programme was termed a "concours de direction," and consisted of demonstrations of the steering capabilities of the vehicles driven either by ladies, or by boys or girls not exceeding seventeen years of age. Numbers of metal figures were dotted about the course, and all of them did not escape scatheless, as on one or two occasions the fair *conductrices*, in their anxiety to achieve some particularly brilliant feat of steering, victimised an inoffensive metallic individual in a manner dreadful to behold. In one instance, indeed, the poor sufferer was only rescued from under the *pneumatiques* of his assailant by the combined efforts of a dozen or so sympathetic people who lifted the car bodily away.

I can, however, testify to the remarkable *sang froid* with which the miserable victims treated the accidents and the conspicuous courage they displayed in bearing their wounds. Not even a cry escaped their lips, and after a little surgical attention with a hammer they resumed their places uncomplainingly! The number of competitors necessitated many heats and a final, and the judges' ultimate placing was as follows:—1st, Stanley, Peugeot; 2nd, Hugot; 3rd, Créanche; 4th, Hugot; 5th, La Parisienne; 6th, Boyer; 7th, Roland; 8th, Dulac.

Undoubtedly, the cars which attracted most attention

were the "Stanley," for they were exquisitely decorated and their lady drivers showed much skill. Light, graceful, and running perfectly silently, these voituresses presented only one drawback, and that was they showed steam continually when in motion, which, however, is a failing not likely to trouble the French automobilist who wishes to drive an effective little car.

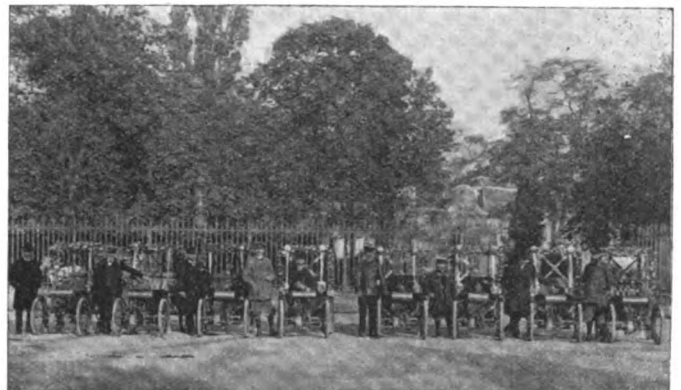
On the conclusion of this contest eight prettily decorated "Victoria-Combination" voituresses (see second illustration) went through a series of evolutions in unison, and having evidently carefully rehearsed their display it proved very effective. Following this item there took place a number of the usual gymkhana sports, such as tilting at rings and at wooden tubs filled with confetti, Turks' heads, and battle of confetti, etc. Banners and wreaths having then been distributed to the competitors, many of the company betook themselves to the Restaurant de la Cascade, where an excellent lunch was served, Baron de Zuylen occupying the presidential chair.

The following day saw the race from Suresnes to Rambouillet and return, in which the competing vehicles were divided into the three following categories: (A) Voituresses not exceeding 2 h.p., (B) voituresses not exceeding 3 h.p., (C) voituresses exceeding 3 h.p. The route followed was by way of Versailles, Buc, Toussus, Châteaufort, Saint-Rémy-les-Chevreuse, Cernay-la-Ville, and Villeneuve, both on the outward and the return journey, and comprised a total distance of 104 kilometres. Thirty-five competitors presented themselves at the start, and the very fair proportion of twenty-three successfully accomplished the journey. Only one mishap occurred, and the second of the two Stanley cars was the victim. A too sudden turn by the driver, M. Lamy, at an awkward corner in the village of Saint-Rémy-les-Chevreuse resulted in the overturning of the vehicle, and in consequence abandonment of the race. The positions and times of the leading cars at the finish were as follows:—

**SERIES A.**—1, L. Renault, 2 h. 49 m.; 2, M. Renault, 3 h. 32 m.; 3, Parisienne, 3 h. 50 m.; 4, Parisienne, 4 h. 16 m.; 5, Parisienne, 4 h. 21 m.; 6, Hugot, 4 h. 43 m.; 7, Gallet and Itasse, 4 h. 53 m.

**SERIES B.**—1, Peugeot, 2 h. 38 m.; 2, G. Richard, 3 h. 5 m. 30 s.; 3, Parisienne, 3 h. 51 m. 30 s.; 4, Peugeot, 4 h. 2 m.; 5, Parisienne, 4 h. 5 m.; 6, Noé Boyer, 4 h. 5 m. 30 s.; 7, Filtz, 4 h. 49 m.; 8, Klaus, 5 h. 11 m.; 9, Wehrle, 5 h. 22 m.

**SERIES C.**—1, Hurtu, 3 h. 11 m.; 2, Stanley, 4 h. 2 m.; 3, Delahaye, 4 h. 7 m.; 4, Lemoine, 4 h. 12 m.; 5, Roland, 5 h. 22 m.; 6, Dulac, 5 h. 24 m.; 7, Delahaye, 6 h. 9 m.



It will be noted that the fastest time was made by the Peugeot voituress, which accomplished the journey in eleven minutes less than the Renault car. The latter, however, followed up its noteworthy victories in the Paris-Trouville and Paris-Ostend courses by again beating all competitors in the same category, and has undoubtedly proved itself to be one of the most reliable and effective small cars now in the market.

ERNEST M. C. INSTONE.



## CORRESPONDENCE.



## THE MOTOR-CAR CLUB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have read with much surprise the extremely curious letter of Mr. R. E. Crompton, which seems to have been penned with the idea of attacking the Motor-Car Club, of which I have the honour to be the honorary secretary, and at the same time to injuring the sporting run to Brighton which my Club is arranging on November 13th next. If Mr. Crompton has been such a regular reader of motor-car papers, and interested in the progress of automobiles over such a number of years, how is it that he has waited until this year to attack the policy of my Club in holding an annual run? We have done this ever since automobiles have been allowed to run upon the roads in England, and each year, as everybody well knows, with greater success than in the previous year.

The memorable meet in 1896, when the British public saw motor-cars on the road for the first time, was inaugurated by the Motor-Car Club, and its position as the pioneer of the movement in England is unquestioned.

Surely Mr. Crompton's remarks are not due to the run of last year being of such a short character—namely, to Sheen House—as I notice the exact programme which we carried out in 1898 is being copied by the Automobile Club this year. Evidently our lead is good enough for the Club which Mr. Crompton mentions to follow, and, although we may have sinned in Mr. Crompton's eyes in this respect, it is evident that our programme was good enough for others to follow. Probably they will next year appreciate the reasons leading us to arrange for a run to Brighton this year, and will again copy us. However, this is by the way, and I will now endeavour to answer the queries of Mr. Crompton, which perhaps are not in the best of taste for a gentleman who claims to have been interested in automobiles for the last thirty years but whose interest seemingly does not get beyond riding long crank bicycles in company with automobiles.

I would venture to suggest that Mr. Crompton should become a practical motorist of the present day, and not merely one of thirty years ago, as then probably we should have the pleasure of hearing various interesting points from him in regard to motors in much the same manner as the cycling world is favoured with his views on long cranks.

He asks, "Is the Motor-Car Club a bona fide club, and not a trading association?" I can certainly say that it is absolutely a bona fide club and that no trading of any sort, shape, or description enters its doors. The Club is not even a proprietary club; it is governed by a committee composed of its own members. It is a Club entirely devoted to the best interests of the sport, and favours no particular motor, person, or company. The best proof of this is that the Club's invitations to the run are issued to the owners of every kind of motor-vehicle. Not only are they invited to the run, but they are also invited to be my Club's guests at the banquet to be held at the Hotel Metropole, Brighton. The members of my Club have supported, and always will support, any event or movement for the general benefit and welfare of the sport and industry. As a proof of this I would refer to the support accorded by the Motor-Car Club to the competitions held in connection with the Exhibitions at the Agricultural Hall and at Richmond. It is also interesting to note that in the 100 miles road tests promoted by the *Daily Mail*, and carried out under the auspices of the Automobile Club, nearly all the participants up to the present have been members of the Motor-Car Club. Motor-cycling as a sport has also been introduced to the public this year solely through the instrumentality and under the rules of the Motor-Car Club.

In regard to Mr. Crompton's request "to give us" (who he means by "us" I cannot quite follow) "the names of the members" of my Committee, there is no difficulty. But I fail

to see what that has to do with our run to Brighton, and I also fail to see why any gentleman who is invited to the run (which, by the way, I would point out to Mr. Crompton is for the owners of motor-vehicles only), or intends to attend the run, should necessarily have the right to inspect the list of members. If, however, it is customary for the motor clubs of this country to give a list of members to any one who applies for the same, or allow the list of their members to be inspected by the public, and Mr. Crompton will give some definite proof that this is the case, my Club will do likewise.

Mr. Crompton then asks me "to give assurances that the Club is supported by the members' subscriptions." Whilst the Club, as a club, is supported by the members' subscriptions it is obvious that race meetings, runs, exhibitions, and big undertakings of that sort must be supported by various individuals guaranteeing the liabilities incurred, as if the Club is promoted for sport it is hardly likely that the subscriptions would cover expenditure of this character. I know that at the recent show at Richmond by the Automobile Club (of which I believe Mr. Crompton is a member) it was not held by them at all except in name, individuals and exhibitors in particular guaranteeing the Club against all financial loss; and naturally for undertakings which might run the Club into financial loss the same sort of arrangement is in vogue in the Motor-Car Club.

In regard to his final suggestion, that if ladies and gentlemen join this run they may advertise a trading association, my answers on this point will clearly show Mr. Crompton that his surmises are incorrect; and as the run is open to every kind of motor-car which runs upon the road, it is natural to presume that anybody, if he chooses, can get as large an advertisement as he likes out of it. But how this would benefit the Motor-Car Club, even if it were a trading association, I utterly fail to see. Perhaps Mr. Crompton would be doing good to somebody by suggesting how my Club would benefit!

Mr. Crompton's penchant for letter writing is notorious, but I cannot help feeling that this attack does not come from the heart of such an amiable gentleman. I fear that he is merely being made a cat's-paw of by others, and, therefore, I have no personal feeling so far as he is concerned.

I have answered Mr. Crompton's letter somewhat more fully than I had intended, but I am far too busy to enter into a long correspondence with him, and I also have no wish for my Club's meet on November 13th to be prejudiced in any way solely for the purpose of gratifying the possible animus of Mr. Crompton and his friends.

49, Holborn Viaduct, Yours truly,  
London, E.C., FREDK. W. BAILY,  
October 24th, 1899. Hon. Sec. Motor-Car Club.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I read with a certain amount of amazement and a certain degree of disgust Mr. R. E. Crompton's letter in your last issue re "Motor-Car Club." To me, not being a member of either that or the Automobile Club, it seems to have been written with an ulterior motive, and, in fact, does not strike me as emanating from Mr. Crompton himself, but rather that he has written it at some other person's or persons' instigation.

He asks the Secretary to enlighten "us." Who does he mean by "us"? He commences his letter as if for his own satisfaction, but concludes by asking for information for the general community.

As most cyclists know, Mr. Crompton's hobby at the present time is cycles fitted with long cranks, and I am not aware that he owns a motor-car.

Now, I have taken an interest in automobilism since motor-cars were first allowed upon the roads of England, and I remember that the first run was organized by the Motor-Car Club. From enquiries I have made in regard to the Motor-Car Club I find that it is not a trade club, but is an ordinary club as far as clubs go, and is managed by a full committee

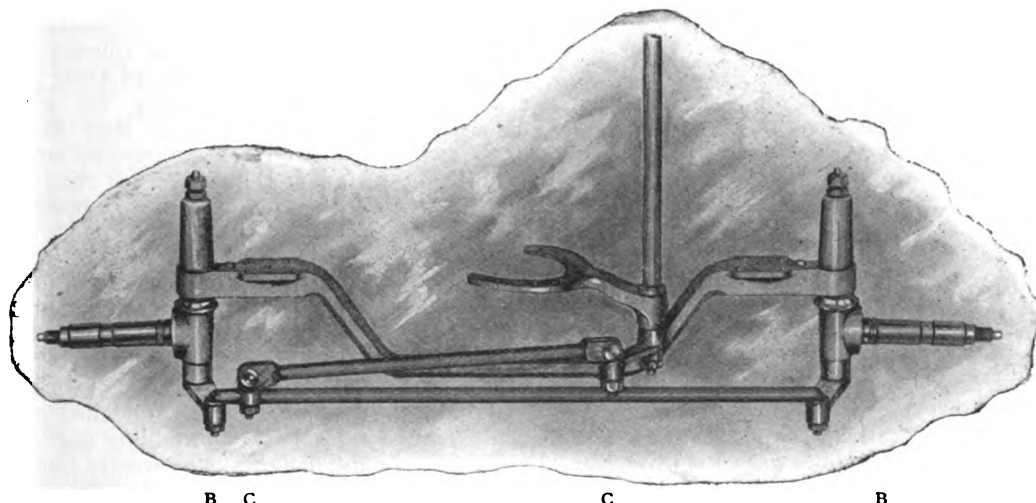
duly elected by ballot, and is not in any way a proprietary club; neither do I think, from what I know of it, that Mr. Crompton, should he be honoured with an invitation to participate in the Club's run on November 13th, will be pestered all the way down with catalogues and price lists.

Trusting you will find room for this from a contributor not in the trade nor, as I say above, in either club,  
36 Greenwood Road, I am, yours faithfully,  
Hackney, N.E., H. G. THOMAS.  
October 23rd, 1899.

## AN IMPROVED STEERING GEAR FOR MOTOR-VEHICLES.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice that in your valuable journal of 6th inst. you illustrate an improved steering gear for motor-cars devised by Mr. George Iden, of the Motor Manufacturing Co., Coventry. Now this steering gear appears to me to be identically the same as that used by Panhard and Levassor of Paris for some years past, the only difference being that the joints *B B* are made to hook into the eyes instead of having a fork and pin. It is obvious that when travelling on the road, owing to the sudden-



crank axle (which is all alive with the motion of the car) the joints *B B* will bind and suffer greatly. Joints of the pattern *C C* were used by the Panhard and English Daimler people before, and got very loose and rickety in a short space of time. I am glad to see that the cast iron bracket introduced by the English Daimler Co., and weighing from 18 to 20 lb. has been discarded in favour of a wrought iron bracket such as Panhard always used. I should say that this new steering gear, as illustrated by you, suffers from every defect that the original Panhard was subject to, and is not a patch on the steering joint devised by Charles T. Crowden and illustrated in *Industries and Iron* in the issue of September 1st last. I am sure that a short trial of the two systems would speedily convince the most lay mind as to which is the best gear for wear and work. Each joint in Charles E. Crowden's steering gear is universal and those in Mr. Iden's are not.

Yours faithfully,  
"VERITAS."

October 21st, 1899.

## IMPROVEMENTS IN DAIMLER CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We notice in your issue of Friday last a letter from Mr. Estcourt, stating that he has fitted a cooler to his Daimler car, which gives excellent results.

He has, however, omitted to state that this cooler is made up of our patent cooling and radiating tubes, and was supplied by ourselves.

We send under separate cover a sample of our covered tube for your inspection.

After a series of careful comparative tests, we find that our coolers are from 10 to 20 per cent. more efficient, size for size, than those commonly used, while they are only half the weight.

This is a matter for consideration among car manufacturers using coolers.

Yours faithfully,  
THE CLARKSON & CAPEL STEAM  
CAR SYNDICATE, LTD.  
Deverell Street, S.E.,  
October 23rd, 1899.

## THE CINEMATOGRAPH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—When I wrote you from Cotherstone last week we were then reduced to running on the 3 and 6-mile speeds, and the day after, on the run to Gainford, the 6-mile speed wheel also gave way and we thus were compelled to run into the latter place on the low speed. As soon as we were unloaded Mr. Sinclair set to work and examined the gear, with the result that I at once wired the Daimler Company to send me a new driving sleeve to fit on the square shaft, and also a new high speed ring. These we could not get until we reached Richmond, Yorks, so the journey from Gainford to Gilling and thence to Richmond had to be done at the only speed we had available, viz., three miles an hour. It was slow work, but as the distances were short and we had plenty of time it made scarcely any difference to us, barring the fact that we felt we were not making so much impression on the people witnessing our arrival. On Saturday the new sleeve and ring duly arrived and was quickly put in position, and on Monday afternoon we had the car out for a trial trip. It seemed just like riding in a new car;

and now that everything is once more in good working order, and the weather at present in this part of the country simply delightful, we are anticipating a few weeks splendid running yet before we turn our faces towards the Border with the intention of spending the winter season in Edinburgh.

I am, Sir, yours, etc.,  
T. J. WEST,  
Barnham, Barnard Castle, Manager of the Modern Marvel  
October 25th, 1899. Co. (Ltd.), of Edinburgh.

ONE of our foreign readers, Señor Alfredo Fontes Magalhaes, 6 R. das Princezas, Bahia, Brazil, writes that he would be glad if builders of motor-cars and cycles in this country would send him copies of their catalogues.

"MOTOR-CYCLE blown to atoms" was the title which one London morning paper gave to an account of an accident to a motor-tricycle near Cheltenham on Sunday. The following is from the *Times*:—"A local electrician was riding along a country road when he noticed that burning benzolene was dropping from the machine and had ignited his stockings. When he dismounted to extinguish the flames an explosion occurred, and the motor-car was blown to pieces. The burning oil reached the supply tank, and the flames spread so far that the grass along the roadside was set alight, and, in turn, ignited a dry hedgerow. The rider fortunately escaped with but little injury. The accident is attributed to the probable choking of the valve by grit, this causing a leakage of the oil."

## SCOTTISH NOTES.

**Motor-Cars at Bazaars.**

THE subject of motor-cars at bazaars was touched upon last week, and it was mentioned that at the big bazaar in Motherwell the automobile proved very useful in helping to "rake in the dollars." A friend of mine tells me he saw one at a bazaar in Carlisle recently, evidently bent on the same work. The car, which had been driven from Hamilton, was plying for hire at so much per head, and judging from the manner in which it was besieged on each return journey my friend thinks it must have proved a "paying spec." In towns and villages where horseless carriages are seldom seen there is something fascinating to the uninitiated in the apparently wonderful gyrations of a well-handled car, and the advent of an automobile is always a signal for crowds of interested spectators gathering to view the modern marvel.

**An Experience.**

I REMEMBER on the occasion of my first visit to Carlisle on a motor-car, with two others, we were stared at and followed as though we had escaped from a lunatic asylum. When we got down at the post office to send off telegrams the crowd had collected round our car to such an extent that when we came out we had literally to elbow our way and do a good bit of forcible jostling before we got "aboard" again. When we started crowds ran alongside and in front, so that our progress had naturally to be slow. While having a much needed "refresher" after our go-mile spin, the court-yard where the car stood was besieged by crowds who had evidently never seen a motor-car in their life. The interest it excited was really extraordinary, one old gentleman in particular anxiously enquiring if we could delay our departure for half an hour till he ran home to fetch his wife and daughter to see the car. This was two years ago exactly, and a great many cars touring between England and Scotland pass through the border towns nowadays. Still, there are a great many towns and villages scattered over the length and breadth of the land where automobiles have never penetrated, and if chauffeurs are anxious to attract attention and be the heroes of a species of triumphal march, let them invade such a spot with their horseless carriages, and they will evoke as much interest as a circus or menagerie. Personally I am a bashful man, but some people like this sort of notoriety, and if they wish to indulge in their penchant let them take the hint given above.

**Exhibitions.**

THE cycle shows in London will soon be on, and motors of all classes will probably be well represented. From all I can learn, however, I do not think there are likely to be many Scottish exhibits. The Glasgow Motor and Cycle Exhibition comes off in January and the Edinburgh one in February, and they will doubtless receive more attention from the somewhat limited Scottish motor-car manufacturers and builders. I understand that the Hamilton Co. are likely to be showing something entirely new at both these exhibitions, but I may possibly have more definite information to give when the date of exhibition approaches a little closer. Last year both shows, while largely taken up with cycles and all pertaining thereto, had a fairly good display of motor-cars, and enquiries from prospective purchasers of automobiles were numerous, showing that the wish to become the owner of a horseless carriage is simmering in more brains than many anti-motorists imagine. I shall be greatly surprised if the year 1900 does not see a very great advance in regard to the attitude of the public towards motor-vehicles.

**Motor-Cars in Edinburgh.**

I LEARN from a trustworthy source that the Edinburgh Autocar Co., who have been forging ahead so vigorously in regard to horseless carriage traffic in the East of Scotland, and whose energetic young managing director, Mr. Outhwaite, recently placed an order with the Daimler Motor Co. for additional cars, are not to have matters all their own way. It is said that opposition is the life of trade, and while the opposition the Edinburgh Autocar Co. will meet to begin with will not be of a formidable nature, still, lots of successful undertakings have had small beginnings, as witness the Edinburgh Company themselves. There is room for more than one running company in "Scotia's darling seat" if the public continue to patronise the cars in the future as they are at present doing. The movement has decidedly "caught on" in Edinburgh, and it is not too much to say that this is largely if not wholly due to the wonderful immunity from accidents which by good management and otherwise the Autocar Co. have enjoyed.

**Automobiles at Dundee.**

THE Dundee Tramway Co., who have a small fleet of motor-cars, have done very well this summer. The cars have been largely taken advantage of by numerous people for touring purposes, and in the course of their peregrinations the machines have travelled very far afield. Those who hire a car for a holiday tour (if they do not possess one of their own) know what real enjoyment means. Of course, I am taking it for granted that the car runs as it should run, that the weather is fine, that the company is congenial, and that the route chosen is a good one. Given these essentials, the man who does not enjoy himself must have a diseased liver, for nothing can be compared to the physical and mental pleasure to be derived from whirling gaily along a good surfaced road in a smoothly running car, in fine weather. I have enjoyed a drive behind a fast trotting cob; experienced the delight of plunging through the foam in a swift sailing yacht; pedalled gaily along on a bicycle; trotted till sore on an ambling nag—but for pure enjoyment give me the delights of a sweetly running automobile travelling at top speed over a gently undulating road and with a crowd of congenial friends.

**The Proposed Scottish Club.**

A MEETING was held on Wednesday last in the chambers of Messrs. Mitchell & Smith, C.A., 59 St. Vincent Street, Glasgow, in connection with the proposal to form a Scottish Automobile Club, or at any rate a branch of the Automobile Club of Great Britain. It was, I understand, decided that a meeting should be organized and held in Edinburgh about the end of November, at which Mr. Johnston, Secretary of the Automobile Club, London, should be asked to attend and submit to those present some of the advantages, etc., to be derived from the great Club. I trust all my Scottish readers will make a note of this, and if they wish to be advised in plenty of time of the exact date and place of meeting as soon as the arrangements are complete, they should send a post card with their names and addresses to Messrs. Mitchell & Smith, 59 St. Vincent Street, Glasgow.

"BROWN HEATHER."

THE Woodhead Manufacturing Co., of Sandiacre, Notts, makers of cycle fittings, are, it is reported, about to embark in the motor-vehicle industry.

MR. A. A. L. HICKMAN, 17 Robertson Terrace, Hastings, sends us a leaflet he has issued on "Motor-Cars v. Horses," from which we learn that a new book, "Round the World on a Motor-Car," is in preparation.

## A LONG RUN..ON A MOTOR-QUADRICYCLE.

MR. HERBERT J. CROFT, of Wildman Street, Kendal, has sent us an interesting account of his ride on a motor-quadricycle from Redditch to Kendal.

Mr. Croft purchased the machine from the Eadie Manufacturing Company, Redditch, and with a view to thoroughly testing its capabilities and powers decided to ride it



through to Kendal, notwithstanding the fact that its construction was practically new to him and that the only instruction he had received in regard to the working of the vehicle had been imparted in the previous two days.

Redditch was left at a quarter to six o'clock on the morning of Friday, the 6th inst. A thick mist lay all around. Nevertheless, the 14 miles between Redditch and Birmingham were covered in 55 minutes. Lichfield was the next point on the route. The mist still prevailed, and "the going" was by no means easy. Still, the machine performed its part well, and the rider had no difficulty in manipulating it to his own satisfaction. At Lichfield, which place he reached at 7.50, a stay of 20 minutes was made for breakfast, following which headway was made through Staffordshire to Stone, 90 minutes being required to cover the 22 miles between Lichfield and Stone. The fog was extremely thick in the Trent valley, but the vehicle still made steady progress past Newcastle-under-Lyme, Sandbach and Middlewich, and thence to Northwich. The distance between Stone and Northwich is 34 miles, and an average speed of about 16 miles an hour was maintained. Next Warrington and Wigan were touched, a short stop being made at Wigan in search of motor-car spirit. The rider then pushed on for Preston, and that town was reached at three o'clock. Thus in nine hours, inclusive of stoppages, a distance of 126 miles had been traversed, without the slightest breakdown. From Preston—which was left at six o'clock—to Kendal the vehicle carried Mr. Croft and a friend, and, being better balanced, ran even more sweetly and comfortably. The road between Preston and Lancaster is an exceeding good one and very suitable for the trial of a vehicle of this character, but unfortunately there was considerable vehicular traffic on the road, and it was necessary on many occasions to ease the motor whilst horses were being passed, so as to avoid the possibility of an accident. But as a rule the horses were tractable and quiet. Lancaster was reached after a most interesting and enjoyable ride between the two places. Lamps had to be lighted at Lancaster, which was left shortly after eight o'clock, and the night being very dark greater care had to be exercised than in the daylight. Still, a fairly good speed was maintained, which led almost to the decimation of a flock of sheep at Beetham, the leaders just being seen in the nick of time. The driver of the sheep was not in sight, nor was there any attempt to make way for the quadricycle, though the horn was being sounded repeatedly. Fortunately no one was the worse for the little incident, the only one of an unusual character throughout the journey. Between here and Kendal the speed was still further reduced, and home was reached at ten o'clock. The distance between Redditch and Kendal is 171 miles, and the average speed of the quadricycle was a trifle over 15 miles an hour. It was surprising, states Mr. Croft, with what ease the motor negotiated nearly all the hills, except the very steepest. There was no doubt as to the satisfactory nature of the trial, and the ride was greatly enjoyed.

It is reported that the New York Central Railway intends to establish an electric cab service in New York and in other large cities along the line.

## MIDLAND MOTOR NOTES.

By "HERCULES."

### The Beeston Motor-Tricycle.

THE Beeston Motor Co., Coventry, scored a success in connection with the one hundred miles road trial on Thursday, October 19th, when their tricycle went the full journey without the slightest mishap of any description.

Only one stop was made, and this occurred under circumstances to which I shall refer later. A careful examination of the tricycle on its return to the works showed that not a bolt or nut required attention. Furthermore, the special cooling apparatus with which the machine was fitted answered its purpose perfectly. At the end of the trial, though over one hundred miles had been covered, the apparatus could be touched by the naked hand without injury. The quantity of petrol consumed throughout the journey was only two gallons. The machine, which was ridden by Mr. Edward Gorton, jnr., was one of their standard patterns, fitted with a 2½-h.p. motor. Mr. Gorton tells me that the start was made in a dense fog, and the party did not emerge from this until nine miles of road had been covered. I expect that some other scribe will deal with the trial in detail, and therefore will only state that any one who knows the road selected for the trial—London to Oxford—will readily agree that it was no "soft thing" for the motors. The stretch of road embraces a large number of hills, some of them very difficult to negotiate, and the fact that the trial proved so satisfactory to the motorists taking part in it should go a long way in removing any doubts which have up to the present existed in the minds of those who have looked upon motors with a longing eye, but have not been quite certain that their possession would not mean constant breakdowns and trouble.

### Strange Proceedings at High Wycombe.

As motorists and cyclists know, nearly half-way between London and Oxford is the town of High Wycombe, which is well known as the metropolis of the chair trade. The main road divides the town for a distance of nearly two miles, and the motorists engaged in the trial on Thursday last week are indignant at the treatment they received at the hands of the Borough Police. The following appeared in one of the Wycombe newspapers on Friday:—

I hear that the Wycombe Borough Police took steps yesterday to test the question of the speed motor-cars may attain in the streets of the town. A number of vehicles went through in the morning, in connection with a London club run, and some of them refused to stop when challenged. On the return journey they found that effectual measures had been taken. In certain cases travellers were warned by a constable with a red flag that a temporary barrier existed further on (in the shape of a scaffold pole held across the roadway), and perforce had to stay their progress. Some names and addresses were taken, and something more will probably be heard of the incident.

The incident alluded to is looked upon by several of the motorists in a different light to that of the writer of the above. They regard the tactics pursued by the representatives of the law as deserving of the severest censure. One even goes the length of describing it as a "dastardly attempt" to wreck the motor-tricycles and endanger the lives of the riders. Superintendent Sparling and his men may consider they have a grievance against the motorists for proceeding at a greater speed than they deem to be wise or safe, but to resort to obstructing the highway with a scaffold pole is hardly a method that does the force credit. It is a pity that a snapshot was not taken of the worthy policeman rushing into the street with the scaffold pole, and that the same could not have adorned the pages of this journal or even the local newspapers. I am informed that the first motorist narrowly escaped an accident through the conduct of the police. He was within twenty yards of the pole when he became aware of its presence in the roadway, and had it not been for the fact that he was not riding at more than eight miles an hour, he would most likely have come to grief. The only warning

which the motorists had was the presence of a man with a red flag near to the obstruction.

#### Motor-Vehicles for Municipal Purposes.

DURING a discussion on the Coventry new rates a question of interest to motor manufacturers cropped up at the City Council meeting. The cost involved by the keeping of a large number of horses and of horse hire forms a considerable item in the Council's yearly expenditure, and on Tuesday the Finance Committee found themselves in the position of "asking for more" to the tune of another £250. One councillor argued that the expenditure for horses, etc., was too much, and that if the Council provided their own horses £1,000 per year could be saved. The chairman of the committee denied that this could be done, and it is a matter for argument whether such an amount could be saved whilst so many horses are engaged. But Councillor S. Gorton, the managing director of the Beeston Motor Co., Ltd., intimated that the Council would shortly be able to provide themselves with motor-wagons, which would enable them to dispense with horse hire. There cannot be the slightest doubt that an enormous saving would be effected by introducing motor-wagons for scavenging and work of a similar character, and the Corporation of Coventry should certainly not be behind other towns in employing motor-vehicles.

#### The Lanchester Motor-Car.

MESSRS. C. VERNON PUGH, managing director of Rudge-Whitworth, Ltd., and his brother, John Pugh, have for some time past been interested in the Lanchester motor-car, and are about to form a company for the purpose of developing the Lanchester patents. It is generally understood that the Lanchester motor-car is an exceedingly good one, and merits a front rank position. The inventor has been experimenting with the motor for at least four years, with very satisfactory results.

#### More Motor-Car Firms in Wolverhampton.

MR. E. H. W. TRUSSELLE, of Byrne Road, Wolverhampton, having met with considerable success in the sale of motor-tricycles, now contemplates building his own in future, and is erecting a workshop for the purpose, and also for the building of bodies for motor-cars.

#### A Good Run by a Star Car.

THE Star Motor Co. evidently do not believe in doing things by halves. They certainly put their motor-vehicles to some severe tests before sending them out of their works. On Monday last Mr. Lisle, accompanied by his son, gave one of his new cars a trial trip to Newbury in Gloucestershire, a distance of 127 miles. I started them off at 10.45 a.m., and from wires they sent me from Kidderminster at 11.35, Worcester at 12.45, Tewkesbury at 2.13, and on arrival at Gloucester at 3.10, it will be seen that they did the journey to that city (70 miles from Wolverhampton) in the remarkably good time of 4 hours 25 minutes, including stoppages. The worst part of their journey, however, lay before them. To reach Cirencester, a matter of 15 miles further on, they had to climb the famous Birdlip Hill, two miles in length. This was accomplished in very good time, taking the state of the roads into consideration. They eventually arrived at Newbury, *via* Swindon, at 10.30 p.m., after climbing a few more difficult hills, thus doing the whole distance (127 miles in all) in twelve hours, less three hours for stoppages. I understand that the car travelled grandly throughout the whole journey. They left Newbury to return at 12.50 on Tuesday morning, but were obliged to give up at Swindon at 4 a.m., owing to a dense fog. They left Swindon, however, at 10.15 and Cirencester at 1.25, and as they were then on pleasure bent they travelled *via* Cheltenham. When I last heard from them they were expecting to arrive at Wolverhampton again at about 6.30.

## WOMEN AND AUTOMOBILISM.\*

By MISS N. G. BACON.



It is incumbent upon the intelligent woman to be interested in life, all its phases and developments. Automobiles and automobilism are not only fascinating subjects for study from the point of view of pleasure, but they offer a marvellous opportunity for the practical utilization of any mechanical talent or ingenuity. Thoughtful women have come to the front during the past few years to study all branches of life's work, and to endeavour so far as possible to educate themselves to fill positions of responsibility and trust. Indeed, the march of advancing womanhood towards all points of central energy is one of the most interesting features of this century. Doors that have been closed since the world has been, are to-day open. Professions that were in the years of

our foremothers considered above or beneath the capacity of a woman are now recognised as compatible with a woman's dignity and power.

But in speaking of automobilism we enter the arena of outdoor pastimes and occupations. All of us here can remember the advent of the bicycle, and its reception by that estimable old gentleman, Mr Grundy.

The old fogeys of Rome could not have been more shocked at Virginia's appearance in the Coliseum than were our "fine old English gentlemen" at the sight of their womankind—self-propelled. This horror, as you will all remember, was real, and it resulted in so strong an opposition to bicycling, that it was by no means an uncommon thing for a girl not to dare to ride near her own house lest the vials of paternal wrath should be poured on her devoted head. But we fought against masculine prejudices and the allied nuisances. Having cycled for some seventeen years I could speak at length upon this subject if time permitted, but suffice it to say that women owe to the cycle a freedom and a power never before enjoyed.

The pastime of cycling is all very well, but the motor vehicle gives a foretaste of something better to come. Automobilism offers an advance in the future as inconceivable to the novice of to-day as cycling afforded the uninitiated wheeler of the past. The question naturally presents itself to the mind, what will the automobile do for England's womanhood? This is a large question, and cannot be answered in an off-hand or slipshod manner. In any reply that can be made, automobilism must first be divided into departments of pleasure and profit. The automobile is, and may only be, the rich woman's toy; *i.e.*, it may be useful from the point of view of pleasure only, but it can also be considered the professional woman's friend, if viewed from its profit-earning side. As wealth holds a prominent place in this world, it seems desirable to deal first with motoring as a pastime. The efficiency of the motor vehicles of to-day leaves much to be desired, for it offers little scope, if any, for the lady motorist who seeks enjoyment of an unique kind. Driving a car in company with a mechanic seated in close proximity to oneself is scarcely agreeable, nor is it yet found to be satisfactory to have the man, no matter where he may be seated, in livery, to act as mechanic at one moment and as footman the next, for the motor-vehicle, by its construction and its peculiar mechanism, requires occasionally special care and attention *en route*, which only a skilled engineer can give. Hence, it is most desirable that women should study the design of horseless vehicles, for comfort is a very essential item and one that should not be despised. I have seen a considerable number of vehicles, but not one as yet that appears to be likely to yield much comfort and ease for long and short distances.

A car that is liable to continuous breakdown is unsuited to the requirements of the lady motorist. A really efficient automobile, one that performs all that its manufacturer claims, although it may be full of limitations and shortcomings as to speed, vibration, noise, smell, etc., is a more desirable vehicle than one that falls lamentably short of the manufacturer's guarantee.

After design and efficiency come mechanism and propulsive power. Learning to drive a car is a comparatively simple matter, but to understand its working parts sufficiently to have them in full control, and in case of disaster or breakdown, to regulate its apparently incomprehensible ways, and to restore, without loss of temper or patience, its running powers to a normal condition, require trained skill. There is at the present moment no place where women can be educated to handle tools, or to adjust the machinery of the car they wish to drive. A superficial knowledge may be given by enterprising manufacturers to purchasers of cars that will enable them to drive, and even to understand the general working of the machinery, but more than this is required before lady motorists can be responsible for the manipulation of their cars. It is difficult indeed for experts to detect errors of adjustment, and the cause of the imperfect working of the machinery, therefore it is imperative that those women who seek to become practical motorists should devote time and skill to the study of the mechanism of automobiles at least sufficiently to enable them to detect what is wrong in case of breakdown, and how to remedy same. It is admitted, I think, that more time is generally spent

\* Paper read at Lady Harberton's house on the 20th inst.



in discovering the cause of a breakdown than in removing it, for the services of a skilled mechanic can be brought into requisition directly knowledge is obtained as to the nature of the breakdown.

The propulsive energy I refer to last, although it should perhaps come first, for neither the design nor the efficiency of automobiles can be considered until it has been decided definitely whether steam, electric or petrol cars are favoured. I cannot here attempt to go into details concerning the driving power of vehicles, for the subject is a deep one, and requires the most careful study.

Granted, then, that women should study the automobile before attempting to enjoy motoring, I pass next to the nature of the pastime. Those who have enjoyed the fascination and the exhilaration of driving through the air, along our public highways, with little or no muscular effort, up hills and down dales, at a high rate of speed, can speak with eloquence in praise of its enjoyment; but even the most eloquent generally finish their eulogistic remarks by saying that no words can adequately describe the sensation. To really appreciate what motoring is, you must be a motorist. There are no half measures. It is "To be, or not to be." There are, of course, various phases of enjoyment. The most ecstatic I should imagine to be that of whizzing through the air at a breakneck pace, regardless of all else but speed. But, it is whispered, with hand uplifted, that cannot be. By the laws of the land any speed exceeding twelve miles an hour is prohibited. The uninitiated say, "Surely that is enough"; but those who have tasted the delights of motoring, solemnly, and somewhat regretfully, shake their heads, and protest, in as mild language as is possible for their feelings, against unnecessary restrictions. Apart from the speed craze, the pleasure of pottering along sweet lanes, surrounded by landscape beauty, must not be despised. It is impossible to touch even the fringe of the subject here, and, therefore, I leave it alone, and simply appeal to the imagination of my hearers in the hope that they may catch the tiniest glimpse of forthcoming pleasures. For my own part my appetite for motoring has only been sharpened by what little experience I have enjoyed of motor-vehicles. A few years hence I may speak with more knowledge, perhaps with even greater enthusiasm, and, at any rate, I hope with less opposition, for to me it seems strange that anyone should consider it unprofitable for women to study the automobile and automobilism.

I come now to the professional women. Many of us are deeply interested in all agricultural and horticultural pursuits. Various colleges exist for the instruction of women in the arts connected with the cultivation of the land and its produce. Gardening, fruit growing, bee-keeping, dairy produce, and poultry-keeping, are occupations now considered to be adaptable to women's labour, and I think statistics will prove that motor-vehicles are less costly for haulage of heavy traffic. The question of transit of the produce of the land from the door of the producer to the markets is one of special interest to women, for until the nationalisation of our railways is arranged, the problems in connection with rural life are very perplexing.

Sceptics may smile, and render the world unpicturesque by means of their unseemly jokes, jests, and caricatures of women driving such vehicles. Women should study the whole question dispassionately and with intelligence in order to test for themselves whether the motor-vehicle will or will not be useful to them in their various agricultural and horticultural callings, for those who laugh last generally laugh best.

I think I have now covered the whole ground of my campaign. Those of us who seek to form a Ladies' Automobile have very unpretentious claims. Indeed, we are modest, for our knowledge is so meagre that all we seek is an opportunity for studying the whole matter, and to do this some centre should be formed around which women interested can gather. The Automobile Club of Great Britain claims the distinction of being "a centre of information and advice on matters pertaining to motor-vehicles, for those who are not owners as well as for owners of motor-vehicles, and yet it closes its doors to more than half the adult human race. Professor Vernon Boys wrote to me and said: "In our membership one touch of motor makes the whole world kind," but I fail to appreciate the logic of such a remark, for how can "the whole world be kind" when, out of a population of some forty millions of people only 500 odd men are members of this Club?

Who could deny even 1,000 men the privilege of having a social club for any purpose whatsoever? But they cannot logically expect to form the centre of information and advice if they exclude women from their membership. One consolation, indeed, women are offered by the administration of the Automobile Club. That is, they are classified with minors—not infants—therefore a woman now can surely claim equality with youths who have lived twenty years and eleven months, and even a score more days.

Women may be very weak and silly creatures, but they represent at least half, if not more, of the human race. True, the gentlemen members are most kind and considerate in taking women for drives like children in their motor vehicles, but it is an odd mixture indeed to have, on the one hand, a club which has been founded to be a centre of information, and, on the other, a rigid rule for the exclusion of adults in consequence of the sex disability. To make the situation perfectly logical, the trade should refuse to sell vehicles to "ladies and minors," as being only fit for the use of gentlemen. Yet I have read, continually, advertisements—indeed, it was just such a press notice that led me first to the study of motor-vehicles—declaring that certain cars are so simple that any lady can drive them. When first the suggestion of the formation of a Ladies' Automobile Club was mooted, women were accused of desiring to intrude upon the privacy of men enjoying the comforts of their own club, but seeing that this was false, and that we only desired to form a very unpre-

tentious centre for the study of motor-vehicles, it has been asserted that not enough women interested in automobilism exists. I put the challenge to-night! Are we, or are we not interested?

If we are, let us start a centre, and study all that pertains to automobiles and automobilism and see where we stand. There is so much foundation work to be done preparatory to women becoming practical motorists, that the sooner a start is made the better it will be for all concerned, for this is a question that affects the interests of the entire human race.

## REFORMATION OF HORSELESS VEHICLES.

By MISS CLARA FAZAN.



WHEN Miss Bacon did me the honour of asking me to read a paper on the "Reformation of the Horseless Vehicle"—to reverse a well-known phrase, it was rather in anger than in sorrow that I consented to give a dissertation upon its iniquities; and self-preservation being the first law of nature, to implore those intrepid motorists whose knowledge gives them power over the steel steed, to lose no time in reforming their hobby-horse.

To the lover of novelty, the person to whom speed and the pleasure of out-distancing all other forms of

traffic is omnipotent, and the peaceful dwellers in hamlets, whose nerves are unshattered by the babel of Babylon, automobile travelling, even in its present (if I may call it so) embryonic stage, may have a "fascination frantic," in an age when everything is done in a hurry and the most noticeable effect is the increase of insanity. But alike to many a long-suffering pedestrian, more go-ahead cyclist, and more especially to the aesthete and the artist, the horseless vehicle appears, alas! too often as the mechanical Frankenstein of the 19th century.

Sitting in one's office or study, the whiz and whirr of the ever-passing motor-car is distracting in the extreme. Driving the soon to be out of date horse, or pedalling along the once fragrant lanes, we find the odour of honeysuckle and rose, and the indescribable sweetness of meadow air, submerged in the overpowering smell of paraffin with which the ubiquitous automobile in front of us poisons the atmosphere. Who can enjoy the glories of a sunset with a landscape seemingly saturated in petroleum? Or the babble of the brook and the song of birds, when accompanied, or even silenced, by the clatter of machinery. "Sweet are the uses of Adversity"—and the motor-car, and if my information be correct, there is even more similarity between them when the latter combines weal and woe. To put the curb on sentiment, and voice my complaints in order to suggest remedies, I will with your permission start with the appearance of the horseless vehicle. Much has been done to make the motor-car less strange-looking and cumbersome, but there is plenty of room for improvement in a great number of carriages on the market. In many cases the machinery is far too much *en evidence*. Mechanism, no matter how skillfully contrived, does not appeal to us as a thing of beauty; the reason probably being because it is absolutely unlike any natural production, true beauty of colour or form being either natural or an excellent imitation of nature. Tanks in the front or at the rear, however well encased, spoil the appearance of a carriage. The car is too often adapted to the machinery, whereas the machinery should be adapted to the car. In petroleum motors it is difficult, I believe, to remedy this defect, as placing the business portion underneath the body is likely to increase vibration. With electric motors the problem is to a large extent solved, as given a properly slung body, the storage can be located underneath the vehicle.

To pass on to another point. The vibration on most self-propellers is trying in the extreme, and is a grave source of danger to physical well-being. The medical profession to a man (or a woman) is agreed on the evil effects of constant oscillation on the nervous system. In order to minister to our comfort and pleasure there must be neither jolting nor jarring.

A third and very serious complaint is the noise made in progression by the automobile. The car of the future must be noiseless if "*mens sana in corpore sanum*" is to be the motto of all who seek the commonweal. The representative of a motor firm remarked to me: "It is only because people are not used to the hum of motors that it worries them; in time you won't notice it; the horse's hoofs make quite as much noise." Whilst one admits the truth of this gentleman's reassuring statement, still, getting used to it means probable destruction of nerve-tissue which can only be renewed, if ever, by weeks of rest.

Simplicity of construction and general reliability are other essentials that must not be lost sight of. Most of the automobiles are far too complex. To arrive at the "true inwardness" of the auto-motor is calculated to

take years off the life of the ordinary pleasure-loving mortal; whilst to be initiated into a few of its mysteries is enough to bleach one's hair! On the other hand, to attempt to guide a motor with whom one has only a "bowing acquaintance" is, if not actually to court disaster, at least to run the risk of a good deal of annoyance. "The unexpected always happens" should be the watchword of every automobilist. Provided you are a past mistress in the gentle art of "moting" you should take a smithy concealed under your seat in order to be even with its many eccentricities. The very thought of controlling machines of this kind is far from cheering, as witness the following description of an ordinary motor: "The back wheel was the driving wheel, the two front were steerers, in the manner shown by cycle heads and forks. The fly-wheel on one side was balanced by a tank holding four-and-a-half gallons of water placed upon the other side. The exhaust box or silencer was placed in a very prominent and unsightly position at the back of the frame behind the driving wheel. The tank for the Tea-rose kerosine was placed just behind the back of the driver" and so on; but I will spare you more; and this describes one of the machines from a motor show. The two seats were placed tandem, so the tank of kerosine would be between the travellers—one must indeed be an enthusiast to put up with such a combination of aquarium and oil-shop. Such a description makes one long for some other motive-power of greater simplicity. The objection to electricity is the weight of the necessary cylinders, but a friendly electrician dropped a hint only a few days ago of a less weighty method of storage which has been discovered, and will before long be public property. When this happens, electric-cars will come more to the fore as being cleaner, less vibratory (I am referring to the newest principle), simpler in construction, non-explosive, and less likely to get out of repair. There are electric mains in all large towns, which can be tapped at a charge of 3d. per Board of Trade unit, and I hear that this is likely to be reduced to 2d.

Carbonic acid gas has been tried as a motive-power with some success. Here there is a field for the lover of nature, and more particularly the vegetarian—a crusade in fact which only waits to be started. Carbon-dioxide is the gas loved of plants, therefore we have in this a new opening for the philanthropist. Take your motor into your garden (or to be truly philanthropic, some other person's garden) well charged with (to quote the chemical formula)  $\text{CO}_2$ , and deal out gaseous nourishment to all the denizens of Flora's domain. A telegraphic whiff in advance will surely make the roses rear their crimson and white heads, whilst "The lily will whisper, I wait." As a new idea, and if successful, a profitable one—think of the early strawberries—it might be worth trying. The woman of the future who goes "slumming" with a motor laden with oxygen will indeed be a benefactress of the first order. The art of compressing and liquifying air is still in its infancy, and I look forward to the day when this shall be used as a means of propulsion. To describe a woman as gliding her ethereal way will be no mere figure of speech when compressed ether forms her motive-power. Experiments are now being made in this direction, and the results are encouraging enough to warrant us in believing that the 20th century motive-power will be upon these lines.

The motor of to-morrow must be odourless. When the title "Reformation of the Horseless Vehicle" was suggested to me, the word "reformation" set me thinking. I knew these petrol motors were always in bad odour; but I did not feel that the word reformation quite fitted the case—it seemed too personal—until I met an engineer, who told me that the bulk of machines could never go the pace unless alcoholically excited. So, motor-lovers, your iron horse is a tippler of the worst type, for it utterly refuses to work unless consuming large quantities of petrol-spirit. I am no longer surprised at its noisy habits and unaccountable lapses into idleness. What I look forward to is a total abstinence car. Sign the pledge for your motors and provide a substitute for this evil-smelling and fiery stimulant, and so make them quiet citizens; and then, when you take them into the country the birds will again carol undisturbed, and the air, no longer poisoned by the breath of an unregenerate automobile, be laden with health as of yore.

Kindly understand that in speaking of the great army of motors alike offensive to soul and sense, I do not wish to in any way disparage the motor industry. There are many brilliant exceptions—only yesterday one loomed on my horizon. During the past week I have been an anxious enquirer into the morals and manners of motors. Having received a hint of the existence of a well-behaved, and needless to say, after the foregoing remarks, a blue-ribbon automobile, I sallied forth in search of at least one righteous car in this Sodom of motors. My quest was partially successful, since, although I did not succeed in seeing the "electroller" itself, its internal economy was fully explained to me by an expert in mechanics. The motive-power is electricity, it is absolutely oilless, and therefore odourless, clean in use and non-explosive. That means a saving in your insurance policy. It is controlled by a switch to run three, six, or twelve miles an hour, or for those who wish to emulate the speed of its oleaginous forerunner the stormy "petroller," four, six, twelve and sixteen miles an hour. The electricity is stored in cells hidden from view under the seats or floor of the carriage, and do not require to be taken out for re-charging, the side of the vehicle being fitted with a concentric plug with cable connection for electric mains. It is claimed to run fifty miles without re-charging at a cost of about  $\frac{1}{2}$ d. per mile; and is fitted with single tube pneumatic tires with patent valves giving pumping facility for special pressure of 120 pounds per square inch. Judging from photograph the appearance is good, whilst the running is said to be smooth and noiseless. A representative of this motor firm told me that four persons can run to Brighton on one of these carriages at 10d. per head.

I hope for great things in the formation of a Ladies' Automobile Club,

viz.:—the suppression of all unnecessary vehicular noise, the encouragement of elegance in auto-car building, and the putting down of "scorching." I call upon members to discourage any vehicle which is an annoyance or eye-sore to others. The objectors to the noise, the odour, and the appearance of a large number of motors may be the weaker brethren, but humanity demands that they should be studied. Conservatism and Sentiment find it hard to accept the Age of Machinery, but it is well to remember that whilst practical common-sense "grasps the skirts of happy chance," and "takes the tide at the turn," Sentiment has been, and always will be, at the root of all that is best and noblest in life.

When the members of this club in reforming their cars are not content with utility alone but must add those details, perhaps, of silence and grace, it is Sentiment that will have put the finishing touches to their then work of art. It is hoped that women coming to the fore, as they should in this club, will in the choice of their cars—putting by the good to win the best—give such an impulse to mechanical skill as to make Automobilmism but the harbinger of Aerial Navigation.

## MOTOR-CAR ACCIDENT.

ON Monday evening, the 17th instant, the main street of Thurmaston was the scene of a remarkable accident. A motor-car was being driven by a man named Wm. Nash, Mrs. Mary Felsted, of Thurmaston, being a passenger, when suddenly a wheel collapsed, throwing the conveyance across the road, and damaging a house. Mrs. Felsted was thrown out of the motor-car, as well as the driver, both receiving a shock. P.C. Jelley rendered every assistance to both, and took Mrs. Felsted to the Leicester Infirmary, where, however, the beds were full, and she had subsequently to be taken home, where she is now progressing favourably. The driver is also doing well.—*Leicester Post*.

## TRYING A MOTOR-CAR.

AT the Guildhall Court, on Friday, the 20th inst., before the Common Sergeant, an action was tried in which the plaintiff, Mr. F. Lindus Forge, architect and surveyor, of Woodford, sued Friswell, Limited, of Holborn Viaduct, London, for the return of a deposit of £30 paid on the purchase of a second-hand Arnold-Benz Car.

The defendants counter-claimed for the balance of the purchase-money, £80. The car was purchased by the plaintiff subject to a trial ride, which the defendants denied, stating that "It was not the custom of the trade to give purchasers trial rides." The plaintiff stated that at the trial the car took one hour to accomplish a distance of three miles, and stopped during the journey eight or nine times, and it would not climb a gradient of 1 in 40 with two up. This being extremely unsatisfactory, the car was returned by the plaintiff, who requested the return of his deposit, which being refused, the above action took place. A verdict was given for the plaintiff on both counts with costs.

## A FINE FOR NOT STOPPING.

AT Steyning, Sussex, last week Henry Dean was summoned for not stopping a motor-car when requested to do so at Washington on September 28th. George Town, the driver of a four-horse charr-a-banc from Worthing to Bramber, said he met a motor-car outside Washington. It was travelling at fifteen or sixteen miles an hour. His near leader was restive, so he pulled up and called out to the motor driver to stop. The motor neither stopped nor slackened speed. The near leader was startled, and turned right round. Town and his guard could not identify Dean as the driver of the car, but the latter practically admitted this. The motor belongs to the monastery at Storrington. There was the usual conflict of evidence as to its speed. Dean said he was not travelling more than seven or eight miles an hour when he met the charr-a-banc. He sounded his horn and was not asked to stop. The magistrates convicted, and imposed a fine of 5s. and 7s. costs.

## THE FATAL ACCIDENT AT DONCASTER.

AN inquest was held at Doncaster on the 19th inst. upon Robert Edmund Henry Wilson, aged eleven, son of Robert Wilson, smith's striker, Bridge Terrace, who, as briefly mentioned in our last issue, was killed by a motor-car in St. Sepulchre Gate on Wednesday, the 18th inst.

Randolph Stebbings, the driver of the car, said he had been with the Daimler Motor Company for six weeks for the purpose of learning to drive. On Wednesday night he had nine passengers, and when in St. Sepulchre Gate a dog ran across the road from the right, and passing the right front wheel ran into the left wheel. The steering lever was thrown out of his hand, and the car swerved into the pavement, knocking down and, unfortunately, killing the boy. The car weighed 1 ton 2 cwt., and was going at the rate of eight miles an hour, as shown by the speed indicator. That was the speed limit laid down by the Corporation in the borough. The dog caught him unawares, and he had no chance of putting the brake on.

The jury returned a verdict of "Accidental death," and added a rider to the effect that greater care should be exercised in the speed of vehicles, and thoroughly competent men should be engaged in the driving of cars.

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## COMMENTS.



AUTOMOBILISTS are interested in highways, and they will find much to arrest their attention in the new "Guide to the Law relating to Highways, Bridges, Footpaths, Waterways, and Rivers," which Mr. Louis Gaches has written and Messrs. Eyre & Spottiswoode have published. Not only does this give a readable history of the subjects enumerated, but also the Acts and regulations relating to the use of locomotives and light locomotives.

The value of the work is enhanced by the quotation of leading cases and of judicial decisions with a fulness that is almost exceptional. "The public," we are told, "are entitled to use a common highway for all purposes of passage, for business or pleasure. It is dedicated for free passage to all, not to use it for sporting purposes, nor for racing,\* nor for the purpose of interfering with the enjoyment of adjoining land;\* the surface from fence to fence is subject to public rights of passage,\* and to obstruct the exercise of such rights is a common nuisance." To every clause marked with an asterisk Mr. Gaches gives authoritative cases which have decided such points, and this instance may be taken as an illustration of his method. Necessarily a large portion of the volume is concerned with matters of greater interest to local authorities than to automobilists. The Locomotives on Highways Act, 1896, and the regulations issued by the Local Government Board pursuant to the Act which regulates the automobiles, are set forth in full, and in a convenient form.

### Automobiles in Warfare.

ON Monday the Duke of Connaught and other officers in the British Army witnessed a parade at Aldershot which must be regarded as unique. Fifteen traction engines and forty trucks were being tested prior to their embarkation for South Africa. The engines with their trains of trucks were sent across country, and safely negotiated ditches and hillocks; the fact that the wheels frequently sank into the wet ground not stopping their progress. Such an incident should encourage those who are hopeful of seeing our military authorities give every attention to the development of the automobile for purposes of war and defence.

### The Automobile Club of America.

By the last mail we learn that the first regular meeting of this new organization took place on the 16th ult., in New York, about thirty-five persons being in attendance. Mr. George F. Chamberlain, in his introductory remarks, rehearsed the objects of the Club and advised co-operation with the authorities in the recommendation and enactment of conservative laws affecting the speed of motor-vehicles on the highways. Mr. Thomas Clarke, of London, a member of the Automobile Club of Great Britain, was then introduced, and told briefly of the work of that body. Reports of committees were then received. The constitution and by-laws were accepted, and the temporary

committee on membership reported that eighty-five applications had been received, of which thirty-five had already been accepted. The subject of a suitable route for the first club run was touched upon and members were advised to investigate the matter before the next meeting. General Avery D. Andrews has been elected president.

### The Halfpenny Press and Automobilism

DESPITE the assertion that automobilism is a pastime for the wealthy and only a spectacle for the man of ordinary means, the interest displayed in the subject by halfpenny London dailies would seem to suggest it is popular with the many. First, the *Daily Mail* gave a weekly motor-car causerie, and now the *Morning Herald* has commenced to tell of the "joys and difficulties of automobilism" in a column that, appearing weekly, is calculated to increase popular interest in improved methods of locomotion. When will the *Morning Post* accompany its society news with motor-car doings, and the *Times* chronicle the developments of mechanical power on ordinary roads? Are the halfpenny papers to lead the way?

### The Brighton Run.

BUT if the regular interest of the daily press is not well sustained it is abundantly manifest on special occasions, and so many representatives of the Press have promised to accompany the Motor-Car Club's run to Brighton—a programme of which appears in our advertisement pages—that the Committee have decided to arrange for a special train to leave Brighton after the banquet at 11.55 p.m. for Victoria. This should prove of great convenience to the Press, and help to ensure good reports in the next morning's papers—unless, of course, there happens to be a plethora of war news on the 13th inst.

### Motor-Vans for Chelsea Vestry.

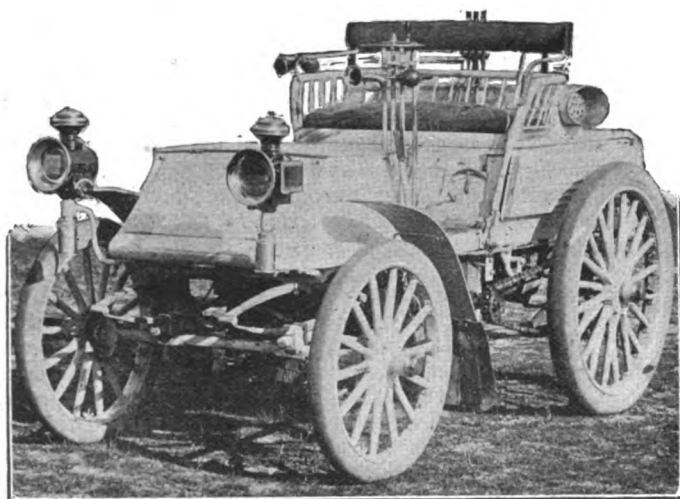
As recently anticipated in these columns, the Chelsea Vestry are inviting tenders for the supply of three motor-vans—an announcement to this effect being officially made in our advertisement columns this week. This is of interest as being probably the first open contract for such vehicles for the use of a public body. According to the specification (which can be obtained from Mr. T. W. E. Higgs, the surveyor to the vestry), the extreme width of the vehicles is not to exceed 6 ft. 6 in., and they are to be of sufficient capacity to carry six cubic yards of sand or other material of a weight not exceeding four tons. The vans will be required to carry a load up an incline of 1 in 20 for 100 yards, at a speed of four miles an hour, and makers are not restricted to any kind of motive power. They must guarantee that the cost of working shall not exceed a certain sum per mile, to be named in the tender, and also have the vans driven for one week after being delivered without expense to the vestry. Tenders are to be delivered on or before the 21st inst., and the result of the competition will be regarded with interest by several important local authorities, as well as by makers of motor-vehicles generally.

### Automobiles for Municipal Work.

FOLLOWING the adoption of motor-vehicles by the Chelsea Vestry comes the news that a similar step is contemplated by another London vestry—that of St. George's, Hanover Square. At the last meeting of this body the Electric or Motor Traction Sub-Committee presented a report in which it was suggested that a motor dust van should be purchased or hired by the vestry for use in the parish, as an experiment, at a cost not exceeding £500. Colonel Legge said that the sub-committee had fully inquired into the matter, and had come to the conclusion that the experiment was one well worth trying. Eventually the recommendation was adopted.

### Some New Benz Motor-Cars.

IN a recent issue reference was made to the special racing car constructed by Messrs. Benz & Co., of Mannheim, for the Berlin-Leipzig race, in which it was successful in carrying off the first prize. We are now able to give an illustration of this car, which is fitted with a two-cylinder motor of 14 h.p., four forward speeds and reversing gear. As will be seen, the wheels are of wood, fitted with pneumatic tires. In addition to the ordinary condenser the car is fitted with a special water-cooling device by means of which a run of 1,000 miles can, it is claimed, be made without it being necessary to change the water. On the level, the car is stated to be



GENERAL VIEW OF BENZ RACING CAR.

capable of running up to a maximum speed of from thirty-four to thirty-seven miles per hour. While on the subject of Benz cars we may mention that the firm are bringing out a new type of vehicle for the 1900 season, some brief particulars of which have been kindly furnished us by Messrs. Hewetsons, Limited, of Dean Street, Soho, W., the agents in this country. The new car, which is known as the "Duc," is, as will be seen from the illustration on page 551, rather larger than the well-known "Ideal," and will comfortably seat three or four persons. The motive power is supplied by a single cylinder of 5 h.p.; there are three forward speeds and reversing motion, while in addition to the ordinary condenser a special cooling device is fitted so that the necessity of frequent changes of the water is obviated. It will be noticed that the new car, apart from the increased size, further differs from the "Ideal" in that it is fitted with wooden wheels.

### Snapshots Wanted.

A MONTH or so ago we stated in this column that we should be pleased to receive from readers reminiscences of their wanderings by motor-car during the past summer. As the pages of the journal during the past few weeks have testified, our request has met with a very gratifying response.

Suggestions for tours of a week or fortnight duration, or for week-ends, will be always welcome, and if these notes of travel are accompanied with snapshots of interesting spots in which the motor-car figures they will be even more welcome, and, where possible, will be given reproduction in our columns.

### Automobiles for Hotels.

THE *Hotel World* says "it is highly advisable to defer the purchase of automobiles or motor-carriages for a few years. . . . This is published for the benefit of those hotel proprietors who may contemplate the displacement of the hotel 'bus or hack by the motor-carriage." We trust our contemporary gives its readers better and more reliable advice on other subjects than on that of automobiles. For if these vehicles can be utilised by country gentlemen and others for the conveyance of visitors to and from the station at a great saving on horse-drawn carriages, the profit ought to be greater in the case of hotel proprietors and those who have frequently to put their horses between the shafts for short intervals. We commend motor-cars to the whole fraternity of hotel people.

### The "Financial Times" and Automobilism.

WHILE the *Financial Times*, in a retrospect of the three years that have passed since the legalization of the automobile on British roads, regards "the fruit as scanty, and a great deal of it poor in quality," it is inclined to believe that there is promise of more substantial results ahead for the motor-car world. Necessarily with every new industry premature financial schemes are floated to the disappointment of investors, but that experience having been got over success is certain. The attention given by society people and business men alike to automobilism is heralded by our contemporary—not to be confused with the *Financial News*—as an indication of the ultimate success of the movement.

### Automobilism in Queensland.

MOTOR-CARS, it appears, are at present an impossibility in Queensland, there being no law under which they can move about. On an application being made to the Brisbane City Council for permission to run horseless vehicles in the public streets, the city solicitor reported that until the law was altered the Council could not grant permission, stating, however, that their sympathy was with the movement, they believing it would be for the benefit of the citizens to have self-propelled vehicles. There is no doubt that the Colonies will take kindly to the new vehicles as soon as the Old Country has taken universally to the idea. The restriction in Queensland shows how closely the earlier colonists followed the lines of Great Britain; but the Government of Queensland must move more rapidly, as it is apparently three years behind date.

### American Horses and Automobiles.

AN American automobilist who has recently motored from the White Mountains through the Connecticut Valley to New York, a distance of about 350 miles, reports that "as a general rule I found few horses seemed afraid, although I have always used extreme caution, especially if a woman was driving. I think all who have had road experience have noticed that the main difficulty with a horse driver is that his mind being so much absorbed in observing the motor-carriage, he pays little attention to his beast, and many accidents otherwise avoidable may be attributed to this fact." This only bears out an opinion which has frequently been expressed in these columns.



Is it a Joke—  
or what?

case the taste is as questionable as the point of the matter is unapparent. Really, Mr. Marks ought to know better.

English-Built  
Motor-Vehicles  
for  
French Races.

MUCH more interest has lately been displayed by English automobilists in French motor-car races by reason of the entry of English competitors. So far, however, only one English-built car—that of the Hon. J. Scott-Montagu, M.P.—has taken part in such races, but it is more than probable that next year will witness a great change in this respect. We have already referred to the fact the Daimler Motor Co., Ltd., are devoting attention to the construction of racing cars, while now we learn that the recently-formed Motor-Vehicle Company, of which Mr. Harvey Du Cros and Mr. S. F. Edge are proprietors, are at present engaged on the construction of three very high power cars, two of which at least will be driven in the big French races during the coming season, and probably compete for the Gordon Bennett



AN EARLY STEAM OMNIBUS—SIR GOLDSWORTHY GURNEY'S VEHICLE, BUILT 1822-25.

challenge cup referred to on another page. The cars in question will be fitted with a four-cylinder motor of the Napier type, of which this Company is making a speciality. The standard cars of the new concern will be fitted with the two-cylinder Napier motor of 8 h.p., and wheel steering. Special attention is also being devoted to the water-cooling and lubricating arrangements, the object being to supply a car of ample horse power to climb steep gradients at a good speed with full loads, and at the same time to have all parts made sufficiently strong to run for many thousands of miles without requiring re-adjustment or mechanical attention in the workshop.

Heavy  
Motor-Cars and  
Freight  
Transport.

THAT the rapid progress which is being made in this country in the construction and adoption of heavy motor-vehicles is being watched with considerable interest in many parts of the world is evidenced by the numerous references to the same that we find in our exchanges. The *Iron Age* of New York, in a recent issue, devoted a leader to the subject, in which it was remarked that "the numerous estimates which have been made of the comparative economy in the use of automobiles of various types and of horse-drawn vehicles apparently have resulted, as a rule, in favour of the

new means of transportation. Interesting as the facts thus brought out may be, a mere comparison of the cost of the old style of vehicular transportation service with that of self-propelled carriages does not go far enough. A central feature of the situation which calls for a new era of development is that the horse-drawn vehicles are no longer capable of rendering the service which is required by the exacting conditions of modern life. This is not the first time that the horse—noble and valuable though he may be—has had to yield precedence to a stronger force. There has come a demand for a service for the transportation of freights on city streets which the horse is not capable of rendering. The capacity of the horse to draw loads has been increased by the improvement of streets and roads practically to the limit; there must now come a motive power capable of drawing heavier loads or drawing them at a higher rate of speed, and herein lies the opportunity of the motor-car. It is not intended here to disparage the use of the automobile for carrying passengers either under private ownership or for public hire. Indeed, thus far the principal demand has been for passenger vehicles. But the urban freight traffic is destined to reach a larger volume than the passenger traffic, just as has been the case on the steam railways, and the investigator who fails to take this fact into consideration will find that he has made a mistake."

New Forms  
of the Stanley  
Steam Carriage.

A NEW departure in the style of the Stanley steam carriage, which is made by the Locomobile Company at Newton, Mass., and which is now being introduced into this country, is about to be made. The new carriages will have regular phaeton tops, to meet the growing demand for a runabout or pleasure carriage that is not altogether open to the weather. The Locomobile Company has also under construction a carriage after the pattern of the American carry-all or beach wagon, with two seats, both facing front. The Stanley car appears to be rapidly gaining favour in America, probably by reason of its relatively low price, 600 dols. (£120).

THE Motor-Coupé Co., of 368 Euston Road, London, N.W., are arranging to run a number of their cars in the forthcoming Motor-Car Club's run to Brighton. Early application for seats in the vehicles should be made.

MR. FRANK F. WELLINGTON asks us to state that he has now taken up his residence at 36 St. George's Square, Regent's Park, London, N.W., and that he will always be ready at any time to supply or store motor-cars and to furnish all necessary accessories.

THE motor-car has become as inevitable as the life-boat in the London Lord Mayor's procession on November 9th, and the preliminary paragraphs now going the round of the Press, tell (as though somewhat of a mystery) of the probable re-appearance of such a vehicle in this year's procession. We believe it is the intention of the authorities to represent the progress made between 1799 and 1899, and the stage coach and motor-car have naturally been selected to represent the advance in methods of locomotion. A 1799 fire manual and one of the modern London fire engines are also to be included. Why not a motor fire engine as well?

WITH reference to the statement made in the *Engineer* of October 6th that there are probably not more than 200 motor-cars running in this country, Mr. C. Johnson, the Secretary of the Automobile Club, has this week sent us a letter in which he points out that Messrs. Hewetsons, Limited, state that they have sold over 500 Benz cars in England, and that the Daimler Company, Limited, state that up to September 30th last they had supplied 307 motors and have orders for seventy-one more. Mr. Johnson adds—"I have not received figures from other manufacturers and agents, but the foregoing will serve to show that the *Engineer* is incorrect in its statement."



## THE GORDON BENNETT AUTOMOBILE CUP.



THE following translation has been supplied to us by the Automobile Club of Great Britain:—

The Automobile Club of France have under their care a trophy presented by Mr. Gordon Bennett as an international challenge cup. This trophy is to be competed for under the following rules:

1. All foreign automobile clubs recognised by the Automobile Club of France are entitled to challenge

and compete against the club who hold the cup.

2. The recognised clubs are: The Automobile Club of Belgium, the Automobile Club of Austria, the Automobile Club of Switzerland, the Automobile Club of Turin, the Automobile Club of Great Britain, the Automobile Club of America, the Automobile Club of Germany.

Any club not appearing on this list and desirous of challenging will have to be unanimously accepted by the above clubs. Its name would then be added to the list to judge the validity of the subsequent challenges.

It is nevertheless understood that on the proposition of one of the clubs to erase the name of another club, this could be done if all the other clubs were unanimous.

3. Any qualified club wishing to challenge the club holding the cup should give notice before January 1st of each year by registered letter addressed to the President, giving the number of cars which will compete for the cup. The amount of 3,000 francs should be deposited with the club holding the cup, this amount to be returned if one of the cars engaged is present at the start. The President of the Automobile Club of France should also be informed by a registered letter, even if this club were not to be one of the competitors.

4. The cup can be competed for every year between May 15th and August 15th. If two or more clubs of the same country were accepted in the list of challengers, it is understood that each country could only be represented by three cars at the most, and in such case the clubs of the said country would have to choose these cars. In case they could not agree, the cars would be chosen in order of entry. The exact date of the race to be fixed of a common accord between the clubs interested.

5. Each club can be represented by one, two, or three cars at will, but the fact that only one or two cars of a club should start cannot deter the other clubs from their right to have three cars to compete.

6. In case the club holding the cup should receive in time the challenge of several clubs, it could choose to hold one race only in which each club would be represented by three cars at the most.

7. The cars qualified for these races are those coming under the description given in the Racing Rules of the Automobile Club of France, published in 1899, as follows:—

The car must weigh more than 400 kilos., and carry at least two passengers, seated side by side, of an average weight of 70 kilos. each, it being understood that in case the average weight should not reach 70 kilos. the deficiency would be made up by ballast.

The 400 kilos. are counted for the weight of the car when empty, this being without passengers or supplies (such as coal, petroleum, water, accumulators), or tools, spare fittings, luggage, clothing, or provisions (chap. I., rule 9).

8. The cars must be constructed entirely and in every part in the respective countries of the competitors.

9. The cars must be constructed by members of the competing clubs, and the two seats occupied during the whole time of the race.

10. Each car competing to send one delegate to form the committee, Mr. Gordon Bennett to be member of this committee, and also the Automobile Club of France, even when not taking part in the race, to be represented by one delegate.

The delegates to name a president, chosen outside of their own body, who, in case of the votes being equally divided, would have the casting vote.

If they could not agree on the choice of a president, he would be named by Mr. Gordon Bennett, or, in his absence, by the president of the Automobile Club of France.

The committee to name, not necessarily from among themselves, a starter, a judge, and the timekeepers.

The committee to see that the rules are strictly adhered to, and judge all the incidents which might take place.

11. The race, which would be a "go-as-you-please" race without any stipulated stoppage, to take place on the road, and the distance to be from 550 kilometres minimum to 650 kilometres maximum. This distance to be chosen between two towns, or apportioned into several outward and homeward journeys, but in the latter case the minimum distance of each part not to be less than 150 kilometres.

12. The race to take place in the country of the club holding the cup, with option for this club to hold it in France.

13. The start to be given at the same time to all the cars, which would be placed in the following order:—In front one of the cars belonging to the club holding the cup; then one car of each of the clubs taking part in the race, beginning with the club whose challenge was first received; after these cars, the second car of the holders, followed again in the same order by the second cars of the other clubs, and again after these the third cars in same order.

14. The car passing the post first to be declared the winner, entitling its club to the cup, even if it were the only car of this club to cover the full distance.

15. In case of a dead heat between the club holder of the cup and one of the challengers, the former would keep the cup.

16. In case of a dead heat between two of the challengers these two clubs would have to race again together under the present rules before the expiration of two months from the date of the first race, it being understood that in such case the race could be held after the period fixed under rule 3.

In case the two clubs could not agree on the choice of a road for the race, a draw would decide.

If one of the clubs should refuse to take part in the in the second race, the other club would, *ipso facto*, take the cup.

17. The cup to be left with the previous holder until the two clubs who have made the dead heat meet again.

18. In the event of one of the clubs who had challenged being alone represented at the start, one of his cars would have to cover the distance stipulated in the maximum time of twenty-four hours, failing which the cup would be kept by the club challenged.

19. It is understood that no club can ever become owner of the cup, but only hold it on the conditions fixed by the present rules.

20. Should the club holding the cup become extinct the cup to be returned to Mr. Gordon Bennett or to the Automobile Club of France.

21. All races for the cup, either taking place in France or in any other country, to be run under the racing rules of the Automobile Club of France, published in 1899.

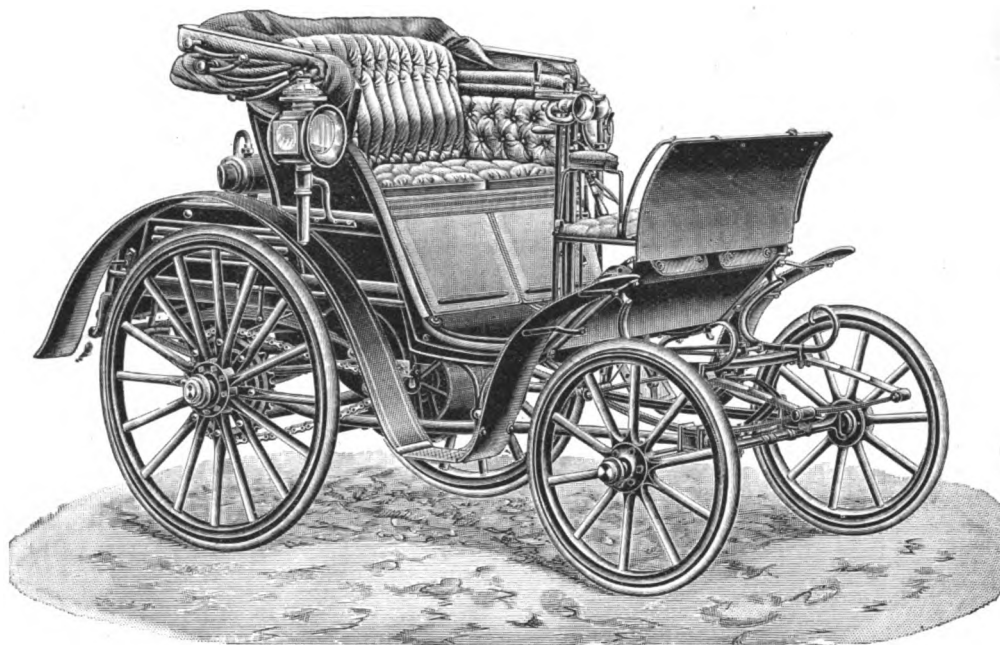
22. Any club becoming holder of the cup or challenging for it undertakes to abide absolutely by the present rules and also by the rules of the Automobile Club of France on road racing published in 1899.

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DON MANUEL OLIVA, 57 Don Martin, Madrid, Spain, owner of the largest omnibus and cab transfer company of Spain, wishes to receive catalogues, etc., from motor-vehicle builders.

## A New Benz Motor-Car.

(For description see page 548.)



GENERAL VIEW OF "DUC" CAR.

### MIDLAND MOTOR NOTES.

By "HERCULES."

#### The Identification of Motor-Cars.

I NOTICE that the Warwickshire Standing Joint Committee, at their meeting last week, considered a communication which had been received from the Surrey County Council suggesting that further regulations should be made to prevent motor-cars being driven at an excessive speed. With a view of securing the identification of any light motor it was proposed that each motor vehicle should bear a registered number. A resolution was proposed by the Rev. H. Mills to the effect that it was desirable to co-operate with the Surrey County Council, and the question was referred to a committee for consideration. It is not surprising that the county councils should be taking further action in this matter. When cars have made the journey from Coventry to London in just under four hours—an average of twenty-three and a half miles an hour—and when motor vehicles are constantly to be met on the roads in the country whirring along at a speed between fifteen and twenty miles an hour, the attention of the authorities is bound to be attracted. The desire to ascertain the speed capacity of a motor-car is a natural one, but if indulged in too freely is likely to do harm to the motor industry and cause irksome regulations to be passed affecting all who "mote."

#### The Warwick County Council.

At the meeting of the County Council, on Tuesday, Lord Hertford moved that the Local Government be written to urging the desirability of registering and numbering light locomotives. He felt that there was great public danger from the reckless way in which light motors were sometimes driven, and to clinch his argument he referred to the average speed of 23½ miles attained by a country motor-car in a run to London recently. Lord Algernon Percy wrote in support of the motion. He stated

that he had seen a coach-and-four nearly upset by a motor-car opposite his gate, and the occupants of the car rode away laughing instead of affording help or expressing regret. One Councillor, Mr. Blackham, said there was an apparent desire on the part of the Council to injure the motor-car industry, and Alderman W. Evans replied that it was a fallacy to suppose that drivers of motor-cars were not breaking the law if they did not exceed twelve miles an hour. A sensible view of the matter was taken by Mr. Broughton Dugdale, who thought owners of motor-cars would welcome a recommendation for the distinctive number. If they could fix the blame upon those who were bringing motor-cars into disrepute it would be a good thing for those who wished to use them in a proper manner. Motorists generally will agree with Mr. Dugdale. There is no desire on their part to break the law, but they are seeking to obtain the benefits and pleasure which motoring undoubtedly yields in a legitimate way, driving with care and every consideration for the public safety. It is the "scorching" motorists who are doing injury to the industry by their fast driving and want of consideration for other users of "the king's highway." Some of the fines recently inflicted should have a salutary effect upon these riders.

#### The Motor-Car Industry.

It is admitted on all hands in the Midlands that everything points to next season being a busy one in the history of the motor industry. I believe I have expressed this opinion before, and I am therefore glad to see that one of the Birmingham dailies agrees with me. The use of motors seems to be unlimited, and manufacturers will have plenty of scope for their ingenuity and enterprise. Already motor-car services are becoming not only popular but paying concerns. Motor-cars for the delivery of newspapers in country districts have been found to answer the purpose so well, that it is now suggested that rural postmen should be supplied with a light locomotive for the collection and delivery of letters and parcels. Motor-coaches are also likely to be seen during 1900. Last week I mentioned that a member of the

Coventry City Council had stated motor-wagons would soon be available for the collection of street refuse and general haulage purposes. It will thus be seen that the motor industry is full of possibilities and opportunities, and manufacturers are fully alive to the position. The best engineering skill is being employed in the construction of motors and of cars, and the results give the greatest satisfaction. The recent 100-mile tests proved conclusively that an immense advance has been made towards perfection, several of the machines travelling the distance with but one stop and without the slightest mishap. The *Birmingham Daily Mail* says: "The most prejudiced person against motors is bound to admit that the past eighteen months have seen great improvements in mechanically-propelled vehicles. A couple of years ago breakdowns were frequent, but stoppages, although not rare, are now somewhat of a novelty. English firms were then a long way behind the foreigner in motor construction, but they are now rapidly overtaking Continental firms. . . ." The same well-informed journal states that, "managed on careful business lines, there appears a good future before motor companies. The future of the industry itself is assured."

#### The New Courier Motor-Vehicles.

THE new Courier Cycle and Motor Co. are forging ahead. I was privileged a few days ago to see some of their new designs, and was much struck by the advantages which are claimed for them. I am not at present at liberty to publish particulars, but hope to be able to do so in a week or two. This firm will show three of their conveyances at the National Cycle Show at the Crystal Palace, and their stand should prove a centre of attraction.

#### A Motor-Car Service at Shrewsbury.

I NOTICED when in Shrewsbury a few days ago that Mr. F. Groves, a prominent cycle agent of that town, is running an hourly motor-chairs-a-banc service between Shrewsbury and one of the suburbs of that town, and I understand that the venture is proving successful.

#### Motor-Cycle Races.

MOST of the professional cyclists in England have taken very kindly to motor-tricycles, and no one, probably, will be surprised if motor-tricycle racing is the favourite pastime next season. Motor races seem to have "caught on" in this country: they are full of life from start to finish; there is no "loafing" as in cycle races, but a "ding-dong" race from the pistol shot to the spectators' "roar" as the winner passes the post. Nor is the race entirely dependent on mechanical power; the rider can and does materially assist his "motor," and his pedaling powers may often enable him to catch an opponent at a critical juncture in the race.

#### Leicester Corporation and Electrical Motors.

THE Gas and Electric Lighting Committee of the Leicester Corporation have set an example which may be followed with advantage by electric lighting authorities in other towns. They purpose developing to a very considerable extent in the near future their electric lighting plant, and among the machinery to be laid down will be a proper equipment for the charging of electrical accumulators. The Leicester Corporation have also done, perhaps unconsciously, the Leicester Motor-Car Co., Ltd., a good service by deciding to oppose the Bill lodged in Parliament for the construction of a light railway from Leicester to Newtown Linford. The latter place is the happy hunting ground of Leicester excursionists who wish to explore the beauties of Charnwood Forest, and in the summer especially is a very popular rendezvous. The Leicester Motor-Car Co. have already

established a capital service to Newtown, which] the construction of a light railway could not but impair. There is no reason why the Company should not be able to almost completely do the work of a light railway between Leicester, Anstey, and Newtown Linford. At any rate, the experiment would be worth trying. I am glad to report that the initial success which attended the venture of the Company referred to is being continued. The cars in use are giving every satisfaction, and the fears of some as to their serviceableness in wet and muddy weather are being dispelled. They have so far worked admirably over rough roads. It is the intention of the Company to shortly introduce the "Lifu," but there is no doubt that in the not distant future electric cars will be adopted.

#### Motor-Cars and Elections.

MOTOR-CARS were used in the municipal elections at Bordesley, Birmingham, on Wednesday, to bring up the voters to the poll. This is said to be the first time motor-cars have been utilised in the municipal history of Birmingham, and they appear to have answered the purpose most effectively. I may add that at Coventry motor-cars have been in evidence on election days for several years past.

### A DOCTOR'S LONG AUTOMOBILE TRIP.

D R. DAWSON TURNER, of Edinburgh, sends an interesting account to one of the medical papers of an automobile trip he has lately completed from Paris to Edinburgh, from which we extract the following:—

The car was a 10-h.p. Delahaye which was ordered last April, and which was promised for August 15th, but which was not delivered until September 21st. We took eight days to cover 750 miles, and the car has given me very great satisfaction. I carried with me a *mécanicien* from the works for the three days, as we were in France, but since then I have managed the car entirely myself. Motor-cars are only carried by the night boats of the Dieppe-Newhaven service. This is a great disadvantage, for it is difficult enough even by daylight to thread one's way over railway lines to the boat's side and to have the car safely embarked. When, however, we reached the boat the captain informed us that the sea was too rough to permit him to take the car, so that we had to return to the hotel. The next morning we drove the ninety-two miles to Boulogne, and after waiting there a couple of days for calmer weather we crossed by the day boat. The arrangements for embarking and disembarking the car were quite satisfactory.

We drove north *via* London, Oxford, Worcester, Birkenhead, Lancaster, Windermere, Keswick, Carlisle, and St. Mary's Loch. Shap Fell is to be avoided, not so much because it is steep, but because of the loose and stony state of the road, which is a disgrace to the county council. We ran on an average about ninety miles a day, and we always started early so as to be able to reach our resting place by 4 p.m.

THREE electric vehicles ordered by the U.S. Signal Bureau, Washington, D.C., have arrived and are being tested at Fort Myer. Two are of the delivery type, and the third is a light runabout. All of them are fitted with attachments so that horses can be used when there are no facilities for charging the batteries.

MESSRS. PHILIPP AND CO., LTD., of 46 Farringdon Street, London, E.C., an old-established firm of cycle fittings factors, have lately established a motor department. They now carrying a stock of De Dion motors, motor tricycles, Perry's and Eadie's motor frames (with or without motors), motor horns, mudguards, and all accessories.

## SCOTTISH NOTES.

### Drive Carefully.

THE weather in the North has recently been so very stormy that motoring for pleasure has been indulged in only to a very limited extent. The roads are heavy, and one soon finds that the mud, which is flying thick and fast, does not improve the running qualities of the chains, or assist much in the onward progress of the car. I was out the other day with a friend, after a long spell of rain, and we found that careful steering was a *sine qua non*. We saw a motor-van in front of us when coming down a slight hill, and the idea crossed my mind that it looked a little bit top-heavy. I wondered what would happen if the steering were erratic and the vehicle had much way on. Just at that moment the car referred to "slewed round" in a most alarming fashion, the rear wheels "skidding" violently almost at right angles to the front. I thought it was over, but after a momentary swaying it got straight again, and resumed the even tenour of its way, as though nothing had happened. Had the driver been "scorching" the hill in question, or steering in a slipshod fashion, in all probability we should have been reading in the dailies of "another motor-car accident." The necessity of exercising caution in driving down hill, whether in fine or bad weather, cannot be too deeply impressed on young chauffeurs, for a moment's deviation from a straight course, when the car gets up any speed, is almost certain to end in disaster.

### The Widespread Interest in Motor-Cars.

IT is a far cry to China, and we do not suppose any automobiles are to be seen in the country of the celestials, but there are certainly people there who take an interest in the horseless carriage movement. Letters containing rapturous accounts of the joys of motor-car touring in Scotland, backed up by occasional numbers of your readable and popular *Motor-Car Journal*, have so fired the imaginations of several young Britishers in China that they vehemently assert the first thing they intend doing when they revisit the Mother Country is to have a ride on a motor-car. It is quite within the bounds of possibility that there may be no such things as horse-drawn vehicles when the Old Country is revisited and that the travellers from over the sea may find themselves in a horseless age. If this should be the case the emphatic assertion may prove true enough, for in all probability they would find themselves jumping into motor-broughams at Charing Cross in place of the time-honoured growler. This is by the way, but it all goes to prove how interest in this movement is being awakened in places little dreamt of.

### More Experimental Work.

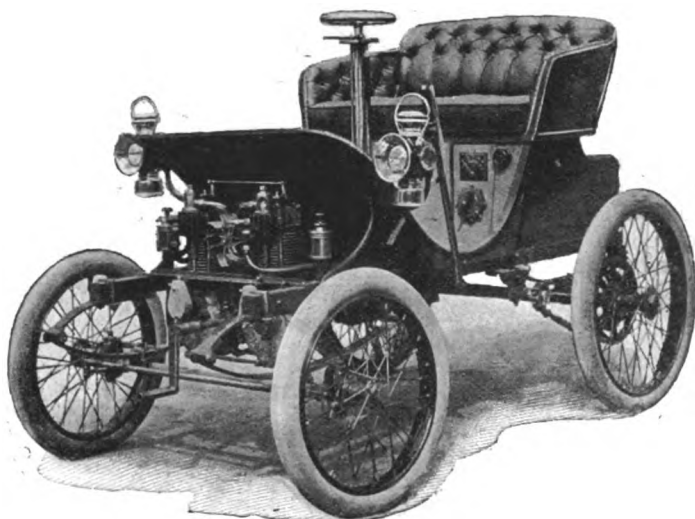
THERE is a good deal of experimental work going on in Scotland at the present time in the motor-car world. I may have something to say on the matter when things are in a more forward condition, but meanwhile it is best simply to mention the fact that the various firms interested in the industry are busily engaged in this work. It is a mistake to boom cars and motors before manufacturers and agents are in a position to satisfy engineers and undertake orders. There has been too much of this in the past. In one sense it is a good advertisement to the motors in question, for it causes them to be talked about; but on the other hand when promises are broken (whether unavoidably or not, the public do not care) the people most closely interested are sure to find that it does not pay in the long run to be "too previous."

"BROWN HEATHER."

ACCORDING to *La France Automobile*, M. Leon Bollée has designed a new form of his well-known voiturette, having four wheels in place of three as usual.

## THE "BARISIEN" MOTOR-VOITURETTE.

THE accompanying illustration depicts the neat two or three-seated voiturette which has lately been designed by a French military officer, Capt. Barisien, of Grenoble, and which is being made by M. Alphonse Eldin, of 21 Place Bellecour, Lyons. The motive power is supplied by a couple of  $1\frac{1}{2}$ -h.p. De Dion motors arranged in the fore part of the vehicle, and geared through the medium of a friction clutch to a longitudinal shaft, which drives through bevel gearing the differential shaft. From the latter the power is transmitted to the rear axle by means of the usual sprocket wheels and driving chains. The ignition is, of course, electrical, while special provision has been made to effect the cooling of the cylinder. In addition to the favourable position of the motors for air to circulate around the radial discs, the dashboard is arranged at such an angle as to direct the air on to the same. Furthermore, should the cylinders become too hot in the course of a long journey a small fan is provided between the two cylinders. This is



driven off the motor-shaft, but is only put in operation when desired, a small friction clutch controlled by a foot pedal being provided in connection with it. In conjunction with the fan is a small pipe through which water from a small tank can, drop by drop, be fed; the rotation of the fan thus gives rise to a fine spray of water, which, humidifying the air circulating around the cylinders, materially assists, it is claimed, in effecting the cooling of the latter. Three forward speeds and one backward motion are provided, the variable gear, consisting of spur wheels working in an oil-containing aluminium case. The body of the car is entirely distinct from the frame, which is suspended on the axles by strong springs. Compensating devices are also provided in the connections between the motors and transmission mechanism on the one hand, and the frame on the other, to prevent any jolting due to inequalities of the road disturbing the fixed relations between the former. Steering is effected by means of a small hand-wheel, while all the control handles with the exception of that connected with the variable gear are mounted on the steering standard, and are thus within easy reach of the driver. The motors are arranged to be started by means of a detachable handle; ample brake power is provided, the foot pedal controlling the band brakes being also connected with the friction clutch, by means of which the motors can be instantly disconnected from the transmission mechanism. The road wheels are of the cycle type, fitted with pneumatic tires, the weight of the car being given as 230 kilos., or about  $4\frac{1}{2}$  cwt.

A MOTOR-CAR and cycle exhibition is to be held at Lyons from the 7th to the 27th inst.

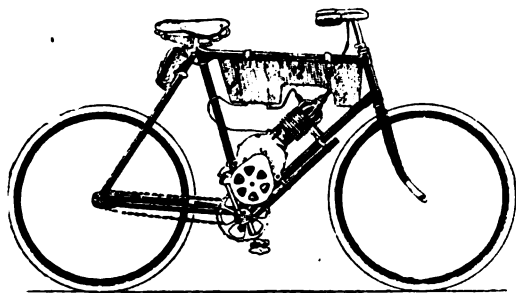
## MOTOR-CARS ON THE CONTINENT.



(From Our Own Correspondent.)

### The Sanclome Motor-Bicycle.

IN a recent issue I referred to a new motor-bicycle, known as the "Sanclome," which has lately been brought before the notice of French motor-cyclists. I am now able to send you an illustration of the machine. The motor, which develops about 1 h.p., is of the single-cylinder type working on the Otto cycle, and weighs 20 lb. It is supplied with the ribs peculiar to air-cooled engines, and is fitted with electric ignition. The engine is attached to the



lower cross tube of a diamond frame bicycle, the top tubes and back forks of which carry respectively the petrol tank and the electric battery and coil. Complete, the cycle weighs from 60 to 65 lb., and is said to be capable of running up to a speed of twenty miles per hour on the level, and of mounting gradients of 7 and 8 per cent. without it being necessary to use the pedals.

### Railway Charges.

THE exorbitant charges made by several of the railway companies for the conveyance of automobiles are continual sources of complaint, and it is with pleasure that one learns of a successful appeal against extortion of this kind. Some time ago a member of the French Touring Club despatched a trailing car by the Orleans Company from Paris to Saint-Nazaire, the freight on which was 3 fr. 35 c. Upon arrival, however, the company demanded an additional sum of 222 fr., and the Touring Club, on behalf of its member, contested the charge. The Bordeaux Tribunal of Commerce has decided in the club's favour, and ordered the company to pay the costs of the action, contending that the trailer is an *objet de carrosserie*, and not a carriage, as asserted by the company.

### Automobile Races at Vienna.

THE race meeting at Vienna organized by the Automobile Club of Austria in aid of the fund for the victims of the recent inundations was conspicuously successful, being favoured with magnificent weather, a large attendance of spectators, and excellent racing. For the various events sixty-four entries had been received, and the results were as follows:—Motor-cycle race of 2,200 metres, for members of the A.C.A., open to all types of motor-cycles weighing not more than 200 kilos., machines with front seat receiving a start of 250 metres: 1, Spitz; 2, J. Kirsch; 3, Waindosfer; time, 3 m. 6½ s. Motor-cycle race of 2,500 metres, open to all, machines not exceeding 200 kilos. in weight and having one seat only admitted: 1, Luaty; 2, Bor; 3, Rowland Hill; time, 3 m. 49½ sec. Motor-car race of 5,500 metres, for members of the A.C.A., cars not exceeding 650 kilos. in weight and carrying two persons, cars of more than 6 h.p. penalised 300 metres for each horse power in excess: 1, Baron de Liebig (6 h.p.); 2, Hugo de Fischer (6 h.p.); 3, Dr. Suchanek.

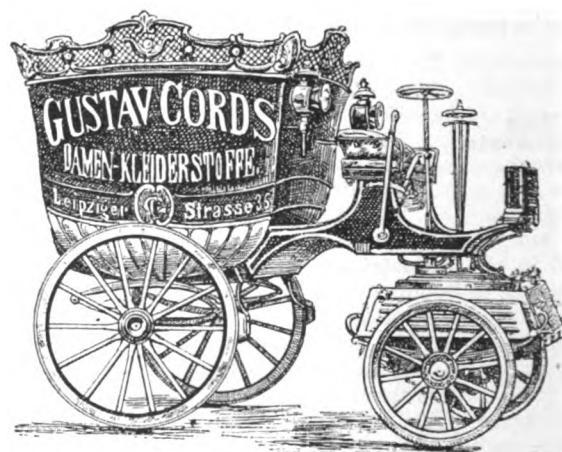
Voiturette race of 3,300 metres, open to all; voiturettes not exceeding 450 kilos. in weight and carrying two persons were eligible, also motor-cycles with seat in front: 1, J. Kirsch; 2, Eidlitz; 3, Hoffmann; time, 5 m. 35½ s. Handicap of 5,500 metres, open to all types: First series—1, Scheibek; 2, Wachalofsky-Bor; 3, Spitz; Second series—1, Dr. Suchanek; 2, Wiesner; 3, Struhatschek. In nearly every instance the successful automobiles were of French construction. The meet has done much to further the cause of automobilism in Austria, and both as an industry and as a sport its future is very bright.

### Hill-Climbing Contest.

As previously announced, the second annual hill-climbing contest promoted by *La France Automobile* is set down for decision on Sunday, November 12th, on the famed hill of Chanteloup, and already great interest is manifested in the event, more especially as the enthusiast sadly misses the regular supply of exciting courses with which he has been favoured since the spring of this year. The steepest grade attained in the course of 1,840 metres is 10 per cent., an ascent which, while sufficient to test the capabilities of all types of automobiles, is not too severe to deter the smaller cars from entering. The categories are as follows:—(1) Electric cars; (2) petrol cars weighing more than 400 kilos.; (3) petrol cars weighing less than 400 kilos. and motor-cycles with more than one seat; (4) motor-cycles with one seat; (5) motor-cycles without chains. The last class is a new creation and should prove of considerable interest. Last year the several winners were:—(1) Electric cars, Jenatzy, 3 m. 52 s.; (2) petrol cars, E. Giraud, 4 m. 36½ s.; (3) voiturettes, Jamin, 4 m. 21½ s.; (4) motor-cycles, Marcellin, 4 m. 5 s. On the 12th instant Jenatzy will again be competing, and doubtless "*La Jamais Contente*" will not only score an easy victory but will also greatly reduce the record for the course. In the voiturette category two Stanley cars have been entered, while among the motor-cyclists Gasté, the 100-kilometre record holder, figures as a competitor.

### A German Motor Delivery Van.

THE Kühlstein-Vollmer motor-tractor has already been described and illustrated in this journal (see issue of August 4th, 1899). The accompanying illustration shows a light delivery van on this system lately constructed by the Kühlstein Wagenbau Gesellschaft of Charlottenburg,



Germany, for a Berlin drapery establishment. The whole of the motor and transmission mechanism is mounted on the fore-carriage, to which any type of vehicle can be quickly attached, the motor fore-carriage taking the place of the ordinary front wheels and axle.



### Electric Vehicles in Belgium.

IN the annual report of the Société Electricité et Hydraulique, of Charleroi, it is stated that the designs of new electrical vehicles are well in hand, and that workshops for the construction of the same will shortly be established.

The company is one of the leading manufacturers of electrical plant in Belgium, and has, in addition to the Charleroi works, a branch establishment in France.

### The Motor Tests.

IN these columns I have from time to time referred to the competition organized by *La Locomotion Automobile* for the purpose of assisting owners of motor-cars in the matter of ascertaining the exact horse power developed by their engines. The actual work of testing was commenced on the 26th ult. at the factory of MM. Malicet & Blin, when a largely attended conference was held. Among the speakers were MM. Desjacques, Hospitalier, de la Valette, and Georgia Knapp, and the system under which the tests are being carried out was fully explained. The entries number 74, and 43 different types are represented. It was generally thought that the manufacturers would not enter motors, but the contrary has proved to be the case, for no less than 34 entries have been made by constructors. Full notes are being taken of such details as the capacities of cylinders and explosion chambers, the temperature of cylinders, etc., after a certain period of work, the temperature of exhaust, and the actual horse power developed by the motor. Many chauffeurs are daily visiting the scene of these important tests, and much interest is evinced in the proceedings.

### Italian Enterprise.

IT is stated that an Italian industrial company has applied to the municipal authorities of Rome for permission to institute an automobile cab service in that town. It is proposed to place sixty vehicles on the streets. Considerable progress is being made in Italy with the industry, and the successful meeting at Brescia has done much to call the attention of sportsmen to the fascinations of automobilism.

### The Nice Week.

THE Automobile Club of Nice is busily engaged in elaborating a programme for the grand fete in March, the general outlines of which have already been published. Included among the races will be one for a cup offered by M. Paul Chauchard, a vice-president of the Club.

### Accident at Saint - Claude.

LAST week an automobile belonging to La Société Electrique, and conveying three persons, suddenly came to grief on the Dortan road, near to Saint-Claude, and the occupants were decidedly fortunate to escape with bruises only. The front part of the car was completely staved in.

### M. de Bertier's Accident.

IT will be remembered that M. Léon de Bertier was prevented from participating in "Le Tour de France," consequent on meeting with an accident in the Boulevard Haussmann on his way out to the start on the morning of July 16th. The sequel to this mishap was reached on Friday last, when the magistrates of the Eleventh Chamber condemned M. de Bertier to six days imprisonment and fined him the sum of 100 fr. The offending automobilist was not present in person, but in his statement of the incident he said that, owing to the streets being quite deserted at the early hour of the morning when the accident occurred, he

was travelling at a speed of 47 kilometres per hour in order to arrive at Champigny in time for the start of the big race. In the Boulevard Haussmann he suddenly perceived a man crossing the street some 150 metres in front of the car. This individual, seeing the fast approaching automobile, hesitated until the vehicle was almost on him, and it was only by a violent swerve that M. de Bertier avoided him. The car, skidding on the greasy pavement, struck a seat on the footway and then cannoned into a lamp-post. The *mécanicien* was thrown out and severely bruised, but M. de Bertier and a friend who accompanied him were uninjured. The magistrates held that Article 14 of the Decree of March 10th, 1899, had been infringed, and ultimately passed the severe sentence already mentioned.

### The "Richard" Motor-Cars.

THE Georges Richard Company, of Ivry-sur-Seine, are now turning out motor-cars fitted with motors of 7 and 10 h.p.; they have also turned their attention to the construction of electrical vehicles, and have in addition acquired the French rights in the "Vivinus" light two-seated car illustrated in *The Motor-Car Journal* for June 16 last.

## MOBILE AND IMMOBILE.

(From "Le Figaro.")



AT the invitation of the Patents' Trading Syndicate, Ltd., 1 Chiswell Street, London, E.C., we journeyed down to Clapham, S.W., on Wednesday afternoon to witness some trials with their new motor-quadracycles and tricycles. On arriving at the Granville Cycling Academy we failed to discover the machines or any one connected with them, and although we, with other pressmen, waited some little time they did not put in an appearance.

## CORRESPONDENCE.

## IMPROVEMENTS IN DAIMLER CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reply to the letter published in your last from Messrs. Clarkson & Capel, in which they say I omitted to mention that my cooler was made up of their cooling pipes, and that they supplied me with the cooler, I wish to state that they did not supply it. They made parts of one cooler; the other parts were made at Lowestoft and Coventry. Furthermore, the drawing of the cooler was made before I even knew of the Clarkson pipe. I have two cars fitted with the cooler, on one of which I have used the Clarkson pipe, and on the other quite a different pipe, showing that their pipes are in no way a necessary part of my design.

Lowestoft,

Yours, etc.,

October 30th.

ERNEST ESTCOURT.

[We have also received a letter from Mr. Mawdsley Brooke (Messrs. J. W. Brooke & Co., Ltd., Adrian Ironworks, Lowestoft), in which he states that "I have superintended the fitting up of these cars to Mr. Estcourt's instructions. For one car we supplied a very considerable part of the cooler and the whole of the parts for the other, in which none of Messrs. Clarkson's tubes are used."—ED. M.-C. J.]

## THE CINEMATOGRAH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The past has been a week of motoring over a very hilly country, and to some places where a motor-car has never been seen before. From Barningham, Yorkshire, we went to Aldbrough, then back again to the mining district of Woodland, a small place situated on the summit of the range of hills running between Weardale and Teesdale—a steady climb all the way, with two or three of the "banks," as they are locally termed, very steep indeed. At Woodlands we were not able to obtain the accommodation we required, and so decided to motor back to Staindrop after the entertainment was over. This was quite an experience, and, having wired to some friends at Staindrop we should return that night, Mr. J. Lax, the schoolmaster there, and two other friends came over in order to enjoy the run back by night.

We left Woodland at 10.5 p.m., lamps brilliantly burning, and in all seven passengers. At the first turn in the road commenced our run down into Staindrop, about eight miles, practically all down hill with one exception—a hill known as Cockfield Fell. It was close to a colliery, very steep, and the surface a black mud churned by the continual procession of coal carts into a slimy mud somewhat of the consistency of the vaseline and black lead we use for our chains. This naturally caused the wheels to skid very much, but we mounted the hill on our slow speed quite safely.

Next day we drove to Butterknowle, still amongst the miners, and on the journey we took aboard probably the oldest man who ever rode on a motor-car. Having made the acquaintance of Mr. Bradley, who owns a colliery near, he asked if we would give him and his father-in-law, Mr. Kidd, a ride. Mr. Bradley weighed over 19 stone, and Mr. Kidd was 92 years of age last birthday. We readily consented, and both enjoyed the trip immensely.

We have just landed here from Butterknowle over a very bad fifteen out of the twenty miles of road, plentifully bespattered with black mud, which lays in such profusion near the entrance to the colliery pits. We had rather a narrow escape on this trip, for while going down a moderate gradient we met half-way a horse with a load of coal. The driver did not allow us a fair share of the road, and it seemed as though the horse was going to pass us all right; at the most critical moment, however, it swerved and backed. By

careful manœuvring we managed to get by with barely a scratch on the splashboard—but only just in time.

I am, Sir, yours, etc.,

Stanhope R.S.O.,

Co. Durham,

November 25th, 1899.

T. J. WEST,

Manager of the Modern Marvel  
Co. (Ltd.), of Edinburgh.

## "TRYING A MOTOR-CAR."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the case mentioned in your last issue under this title, we beg to send you the true facts of the matter between Mr. Forge and ourselves.

On July 18th, 1899, Mr. Forge came to our show-rooms and bought a second-hand car for £95. The only question that seemed to be in his mind was the noise. He was shown the motor running at its full speed, and thereupon bought it as it stood. Being told, however, by us that the chains and chain-wheels were not in the order that they should be and would give trouble, he ordered definitely Brampton's chain and chain wheels to be fitted, and also gave instructions for the car to be repainted and re-upholstered, and moreover confirmed this arrangement by letter and sent a deposit of £30. When the car was finished it was sent from here to Woodford by a man who was to have received cheque or to bring the car back. Unfortunately, the motor did not go very well at the time, and it was brought back, after which Mr. Forge asked us to return his deposit, which of course we refused to do, although we offered to supply a new car or any other. We hold his letter in which he says he could not afford to pay a bigger price, although as a matter of fact he went elsewhere and bought a new one. He issued a Lord Mayor's Court summons for the return of the deposit, and we put in our counter-claim for the balance of the purchase, and although we were absolutely correct in our proceedings the jury took Mr. Forge's view of the matter and gave a verdict against us.

So far as trials are concerned, every car in our possession is ready for trial at a few minutes' notice, and we have never hitherto sold a car without giving it any trial our clients asked us to.

Yours faithfully,

For FRISWELL, LIMITED,

C. FRISWELL,

Managing Director.

November 1st, 1899.

## THE MOTOR-CAR CLUB.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Referring to the letter of Mr. Frederick W. Baily, Honorary Secretary to the Motor-Car Club, published in your last issue, and which is a reply to my first letter, the case of the Motor-Car Club stated shortly appears to be as follows:—

In the *Automotor* of August, 1897, the following paragraph appeared: "The Motor-Car Club was ostensibly social in its aims, but was really a commercial adjunct to a business, and hence did not command the support of the leading British automobilists, and therefore failed."

I cannot learn that this statement was ever denied. Recently, however, we have been informed by the journals and by other means that the Motor-Car Club is under new and independent management, and is no longer under the control of, or subsidised by, or in any way connected with, its first president, Mr. H. J. Lawson, or with the British Motor Co., Ltd. My letter, which you were good enough to insert in your issue of October 20th, was intended to give the new management of the Motor-Car Club an opportunity of putting themselves right with automobilists in general by giving such information as the public have a fair right to expect to receive. Mr. Baily, in his letter, does not seem to welcome the opportunity which I have given to him. He does not make the statement that I hoped for—that the Club is not connected with or subsidised by its original president, Mr. Lawson, or by the British Motor Co., Ltd.; he does not guarantee that the name of the Club will not be allowed to be used either directly or

# The Berlin Electrical Cabs.



FIG 1.—GENERAL VIEW OF "DROSCHKE."

indirectly in the promotion of companies; he does not publish or place at our disposal the information which is supplied to all inquirers as to the status of the Automobile Club—namely, the list of its committee and of its members, and reasonable information of its constitution and rules, and a list of its guarantors and donors, with the sums subscribed or guaranteed towards the Club's advancement. He fails to see why ladies and gentlemen invited by his Club to join in a run should necessarily wish to have information on these points.

He states, rightly, that I am a member of the Automobile Club, and I take this opportunity of saying that I know enough of the feelings of the members of that Club to feel sure that they would welcome the formation of genuine motor clubs whose object is the general advancement of the cause; but it is evident that such clubs must be able to offer such reasonable information as that I have asked for in support of their claims to be considered independent bodies and unconnected with trade interests.

Space does not permit me to reply more fully to the other points in Mr. Baily's letter—which are, as a matter of fact, not relevant to the question. The letter of Mr. H. G. Thomas needs no reply, as it appears to be a repetition of the statements made in Mr. Baily's letter.

Thriplands, Kensington Court, W. Yours faithfully,  
October 31st, 1899. R. E. CROMPTON.

[We have received another letter on the subject, which pressure on our space unfortunately compels us to hold over till next week.—ED. M.-C.J.]

IN previous issues of this journal illustrations and descriptions have been given of the types of electric cabs used in London and in Paris. We are now able to publish a brief description of the vehicles which have lately begun to ply for hire in the German capital. The difficulties to be overcome in designing a motor-cab to comply with the police regulations in Berlin are considerable. Practically all motors, except the electro-motor, are excluded, and the dimensions of the electrical cab are required to correspond very closely with those of the horse cabs at present in use. In consequence of this the builders—the Berliner Maschinenfabrik (Henschell and Co.), 97 Schillerstrasse, Charlottenburg, Berlin, based their production on an ordinary horse-drawn "droschke," with the results shown in the accompanying illustrations (Figs. 1 and 2). It was impossible to fix the motors in the most convenient position for transmitting power to the driving wheels, the only space available being that beneath the driver's seat. Here two electro-motors *M* are fixed, each weighing 110 lb. and developing 2 h.p. The voltage of the motors is 85, and the number of revolutions 1,100 per minute. A new departure in these vehicles is the employment of a flexible power-transmission shaft *W*—made in accordance with the firm's own patents—between the electro-motors and the intermediary shaft. The motors are independent of each other, each being provided with one of the above-mentioned flexible shafts and geared separately, one to each of the rear road wheels by sprocket wheels and driving chains, thus dispensing with differential gear. By a special arrangement of the controller one motor is capable of driving the cab, at a reduced speed, in case the other motor should break down

The motors are rigidly attached to the body of the cab, which is suspended by springs on the axle, the flexible shaft compensating for any variation in the relative positions of the motors and the transmission gear due to inequalities of the roads traversed. The flexible shafts are supported at their ends on roller bearings, and are claimed to give a greater efficiency than spur-gear transmission.

The battery of accumulators is carried in a box *B* under the vehicle, and this box can be removed and replaced by another with fully-charged cells in from two to three minutes. The battery has a capacity of 60 to 70 ampere-hours, which suffices for a journey of from 30 to 40 kilometres on one charge; it consists of forty-four cells of the Hagen type. The controller *H* is manœuvred by the driver's left hand; it is arranged to give a wide range of forward speeds and reverse motions, while provision is made for the motors to act as electrical brakes, the necessary resistances being under the driver's seat. In addition to the electric brakes, band brakes

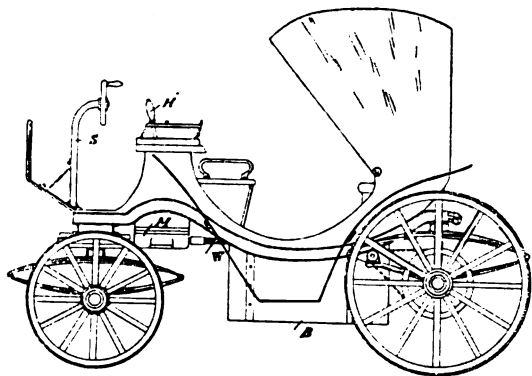


FIG. 2.—DIAGRAMMATIC ELEVATION.

on the rear wheel hubs, and actuated by a foot pedal, are provided. Steering is effected by the hand wheel *S*, which is connected with a pinion arrangement on the fore-carriage turn-table.

The droschke is fitted with wooden wheels and solid rubber tires, and weighs complete 1 ton 510 lb. Excluding the driver it can accommodate five persons, and can attain a maximum speed of 18 kilometres per hour—the average permitted by the Berlin police is only from 12 to 14 kilometres.

In view of the success achieved with the vehicle above described, we may add that Messrs. Henschell are now making a specialty of converting horse-drawn carriages into electrically-propelled vehicles.

MESSRS. J. AND J. HASLETT, North Street, Belfast, are carrying a stock of motor-car spirit and other accessories for automobilists.

MESSRS. IRVING BROS., Coupar Angus and Dundee, have been granted permission by the Dundee magistrates to run a motor-wagonette for ordinary traffic.

MESSRS. JOHN HUTTON AND SONS, Summerhill, Dublin, have been appointed agents in Ireland for the Hurtu cars of Messrs. Marshall & Co., Clayton, Manchester.

A JUDGMENT for £164 has been entered against the National Motor-Carriage Co., New York, in favour of C. A. Tower and Geo. L. Weiss, of Cleveland, O., who had made prepayments on motor-carriages which were never delivered.

MESSRS. P. SAUNDERSON AND CO., LTD., is the style of a company which has been registered, with a capital of £20,000, to acquire the business carried on by H. P. Saunderson at Kempston Road, Bedford, and to carry on the business of wind-motor and motor-car manufacturers, engineers, etc.

THE members of the Automobile Club of America and their friends have arranged a run for November 4th from the Waldorf-Astoria, New York, at ten o'clock in the morning, to Ardsley, where dinner will be served. The run home will be made late in the afternoon or evening. It is expected that between fifty and sixty automobiles will be in line.

## RACIAL TRAITS IN MOTOR-VEHICLE DESIGN.\*



JUST as the art expert in glancing at pictures in a picture gallery can well divine their origin, so can the trained eye of the engineer usually tell the birthplace of a motor-carriage he sees on the road. In fact, not only can one tell the nationality of the design, but frequently also that of the manufacturer, since a French carriage built in France looks very different from one of French design built in England.

Comparing the representative types of motor-carriages of the different nations, we shall consider the motive power used, the method of driving and steering, and the general build of the vehicle. As regards motive power, we might say that it is principally electricity in America, oil in France, England, and Germany. The reasons for this difference are not far to seek. In the United States the electrical industry has made such progress as to enable electric pleasure carriages to be run quite satisfactorily. Moreover, the majority of motor-carriages running in American cities are two or four-seated vehicles for the conveyance of passengers, and rarely travel outside the city limits over hills and bad roads, and the distance to be covered is seldom greater than one charge of the batteries will allow.

In France conditions are different. If you can build a carriage with plenty of taps, floats, levers, hand wheels and adjustment screws on the outside you are sure to meet the French taste, and if you operate it with oil there will be a chance that the carriage will get stuck on the road and give the *chauffeur* an opportunity to prove to his own satisfaction and that of his friends that he is a genius and able to make things revolve after tickling the mechanism for some little while. It seems that while motor-carriages to be popular in America and England must be comfortable vehicles, manageable and reliable, they are preferably so constructed in France that it is an art to sit on them when they are moving, and that nobody but their proprietor thinks he knows what all the mechanism is for. The German oil carriage is in most cases far simpler than that of French design, though the Daimler motor, a German invention, is being largely used in both French and German vehicles.

Electric-motors, where possible, are most desirable, as they are rotary and most readily applied to revolve the wheels. But in England and Germany, leaving out of consideration the rest of Europe, the motor-carriage has to serve a different purpose. It is much used to run in districts where there is no steam railway or electric tramway, and has to make long journeys with one charge of fuel, or, rather, be able to replenish the exhausted source of power *en route*.

Electricity, of course, is not adapted for this purpose. No battery will stand the jar and jolting of rough country roads without being soon disintegrated, and as regards the weight, we know that 1 lb. of weight does not represent more energy than 7 to 10 watt-hours in the best type, and that where we wish to run some distance the dead weight to be carried will make electricity prohibitive. Oil, coal or coke will burn up and lighten the car, but electric batteries remain just as heavy whether they be charged and representing the source of motive power, or whether they are exhausted and nothing else but ballast. So it comes that oil is largely in use abroad. Of course, the average Englishman is not yet fond of this means of locomotion, and the most perfect oil carriages built in England are making their way rather slowly into popularity.

\* By A. H., in the *Horseless Age*.

It seems to be the standard practice abroad to attach the engine in front of the vehicle and drive backward by means of gear wheels, shaft and double chain. Some French carriages still use belts, but in England, with her quick climatic changes, belts do not seem to prove attractive for the purpose. The driving is in a few carriages effected in front, after the style of some of the electric cabs running in New York. The idea is that such a carriage will steer straighter and ride with the driving wheels first over an obstacle, where otherwise the steering wheels might be thrown sideways and the vehicle caused to skid.

Much ingenuity is shown in French steering gears; generally, however, the Ackermann gear, or articulated axle, is considered the best, and is most in use. Gearing and chains being prominent parts of European vehicles, these have been designed with great care, and one has to admit that they give much satisfaction as they are arranged at present. As a rule they are encased (dust proof), and show little signs of wear after hard use.

In the general build of vehicles it is noticeable that the English carriage is much heavier in proportions than the French. One might say it is the old excuse of the English designer to pride himself on the substantial character of his work instead of acknowledging that he did not know how much lighter he could build without coming to grief. But it must be admitted that it is a mistake to make a motor-carriage frame light when it has to be durable. The twisting and racking when on the road is very great, and however elastic the connection may be between wheels and motors, the latter should be on a rigid foundation, which means attached to a heavy frame. It is just the difficulty in making a compromise between these two opposing desiderata, elastic vehicle and rigid engine base, which accounts for most failures in motor-vehicle design.

One great point in favour of English carriages I have seen is that their centre of gravity is usually lower than in the French carriages. This, I consider, very desirable, as it facilitates rapid brakeing without the danger of upsetting. Top-heavy vehicles are besides dangerous in taking curves, though it seems that the popular London 'bus, a most unmechanical-looking affair, does quite well in balancing its outside passengers.

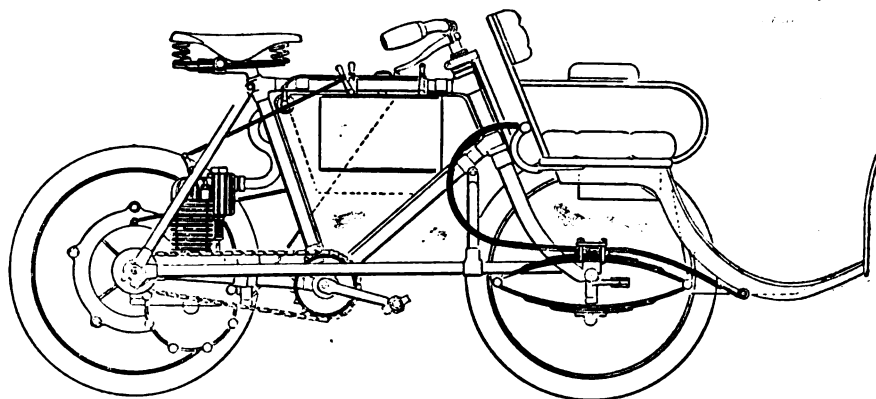
As regards the finish and outlines of the carriages, it must be admitted that those of French design are more graceful than the English types. One has only to look at the London electric cabs—or look back at them rather, as they have not been running for some weeks—to become permanently discouraged at the prospects of motor traffic.

On the other hand, there were some outrageous designs recently to be seen in Paris; for instance, motor mail coaches of the baroque style, and some of the carriages were so arranged that you could see a dynamo, numbers of flasks, brushes and household articles about, which plainly indicated that it did not matter if the vehicles got stuck on the road, since the tourists would have lots of fun with the things they took along!

THE Wearwell Motor-Carriage Company has just been registered with a capital of £5,000 in £1 shares, to manufacture, sell, let on hire, and deal in motors of every description, cycles, bicycles, ships, boats, launches, carriages, and athletic apparatus and appliances, etc. The subscribers are: Arthur E. Robinson, Oakroyd, Oaklands Road, Wolverhampton, traveller; Henry S. King, 17 Merridale Lane, Wolverhampton, secretary; William Clarke, Merridale Grove, Wolverhampton, cycle manufacturer; John H. Pickard, 10 Merridale Lane, Wolverhampton, works manager; Edwin Bond, 45 Mander Street, Wolverhampton, works manager; John Clarke, 158 Park Street South, Wolverhampton, works foreman; and Robert R. Rhodes, 53 Queen Street, Wolverhampton, solicitor.

## THE ARIEL MOTOR-QUADRICYCLE.

THE Ariel Cycle Co., Ltd., of Birmingham, have lately introduced a new attachment by means of which their motor-tricycle may be quickly converted into a two-seated quadricycle. The attachment, which takes the form of a small open carriage, is comfortably upholstered. The method of attachment is very simple: (1) the front wheel of the tricycle has to be removed; (2) the arms extending from the under carriage have to be fastened to the back axle sleeve of the tricycle; (3) two tubes run from the arms just mentioned, and have to be secured to the bottom frame tube of the tricycle by means of a clip and bolt. These three clips are all that is necessary to manipulate, and the change from tricycle to quadricycle can be made in about half an hour.



The body is carried upon a set of C and elliptical springs, thus giving perfect suspension. Mud-guards are provided to the side wheels, and an apron fitted to the dashboard enables the passenger to be carried well protected from wind, dust, and mud. The steering is, of course, controlled by the rear rider, and is arranged in such a manner that in taking a corner the inside wheel is not parallel to the outside wheel, the two being tangent to circles having the same centre, which centre is on the axle of the back wheels. By this system friction is claimed to be avoided, and the motor is not called upon to perform unnecessary work. The extreme length of machine, including quad. attachment, is 7 ft. 7 in., and width from nut to nut on outside of the tricycle wheels 3 ft. 5 in.

THE police authorities of Berlin have issued an order limiting the speed of automobiles in that town to fifteen kilometres (about nine miles) per hour.

MESSRS. W. W. BANNISTER AND Co., of the Crawley Engineering Works, West Green, Crawley, inform us that they have just acquired premises in High Street, Crawley, where they intend to carry a stock of motor-car spirit, accessories, etc. The firm have also lately started a general engineering business at West Green, Crawley, and are at present in negotiation regarding the manufacture of a new motor-tricycle.

THE Continental Automobile Co., with a capital of £1,600,000, has been incorporated in New Jersey. The new company has purchased the business of the Winton Motor-Carriage Co., Cleveland, O., the Manhattan Oil Motor Co., Jersey City, N.J., and the National Motor-Carriage Co., New York. The latter company succeeded the Duryea Motor-Wagon Co., and was the owner of a number of patents of Chas. E. and J. Frank Duryea. The Manhattan Oil Motor Co. owned the oil motor patents of Emil Capitaine, Frankfurt, Germany, although it was not manufacturing them for carriages, while the Winton Co. was the owner of many patents taken out by Alexander Winton. By this purchase outright the Continental Co. acquires two plants, one in Jersey City and the other in Cleveland.



## LADY MOTORISTS.\*

By MRS. BAZALGETTE.



HAVING been asked to speak at this meeting I do so in the hope that our gathering will lead to the formation of an Automobile Club the membership of which will be open to ladies as well as gentlemen, where ideas can be exchanged—ideas which may be a source of benefit and information concerning the use of motor-cars to all those interested in the new pastime. I use the word "pastime" advisedly, in preference to "industry," as I myself have little experience of automobilism except as a pleasure-giving pursuit. The time surely has passed for gentlemen to object to ladies participating in their sports. As I have owned and driven a Benz car for some three months, I have been especially asked to speak about lady motorists, and I think I can give the results of my practical experience, and present details that may be useful and interesting to those ladies and—may I dare say?—gentlemen who want to know something of the subject. My experiences may not be considered to be wide, for I have only driven a Benz Ideal and a Victoria, yet there are many gentlemen as well as ladies who have not progressed so far, and it is to them more especially that I address myself.

Before one can enjoy motoring as a pastime, one must have one's own carriage, and I should recommend the purchase of a small, inexpensive car of a good make. Any well-built carriage will do for the first performance of an amateur, even although its speed may be low, for it is generally undesirable to learn to drive on a vehicle constructed for great pace. I have studied automobiles of almost every description for some three or four years, so I have something to say concerning them. I have travelled a great deal on my own car, and enjoyed more of the country than I at one time thought possible. I generally do some ten to fourteen miles per hour, visiting such places as Southsea, Brighton, Southampton, Bedford, Norwich, and I have run swiftly on the high roads and wandered through the lanes of Kent, Oxfordshire, Warwickshire, Berkshire, Buckinghamshire, and Essex.

It is possible to drive a car with very little knowledge of machinery, if you have a skilled mechanic with you to help in case of a breakdown; but the lady motorist is in a much more happy frame of mind during her travels if she herself possesses knowledge of the mechanism of her automobile. It is so much more enjoyable to really study and understand everything concerning the car you take an interest in. You must not imagine that it is possible for any lady to acquire sufficient knowledge of the working parts of the driving machinery in a few days, or even months, but they should have the opportunity of studying it. This is one of the main objects of the club we hope to form.

Many things may happen *en route* that may tax even the ingenuity of the expert, for some slight adjustment may be necessary, and the trouble must be diagnosed before the operation can be performed. The lady motorist should at least know something about "short-circuiting," "back-shot," "compression"—as the doctor knows of a defective nervous system. She should be able to detect whether the bearings are becoming heated, or the belt is slipping, for if it does it will have to be shortened, and the process of shortening is, to my mind, not beyond the powers of a woman.

Why the pastime of motoring is so interesting is that there is always something to be learned concerning the mechanism of the car. Some experts maintain that no lady cares to start the driving wheel. Why not? The operation is perfectly easy—it requires skill rather than strength. Indeed, the machinery of a motor is so delicate in its construction that very little force is necessary. There is no sledge-hammer work. The blacksmith might be able to do repairs under the direction of an expert engineer, but for my part I would prefer to leave my car in its damaged condition rather than trust it in the hands of the giant of the smithy.

I have driven my car some 2,000 miles, and have been most fortunate in not having experienced any mishap. Yet the sceptics tell us of the dangers of the automobile! But accidents may happen to the most expert and careful driver, for there is still much jealousy and prejudice to overcome. These, however are only temporary, for the day will come when England will follow the lead of other countries, and horseless vehicles will be seen here, there, and everywhere—and probably nothing else!

Apart from the pleasure of motoring, some little consideration should be given to the profitable utilisation of the motor-vehicle. If ladies are engaged in agricultural and horticultural pursuits, and find pleasant occupation in gardening, dairy-work, fruit culture, etc., why should they not with even greater dignity drive their produce to the markets? Metropolitan dwellers revel in the delicious produce of the country, and if the motor-vehicle cheapens the transit of heavy loads, without the cost of reloading, the lady motorist can with hope look forward to the good times that are to come—and come they surely will—when ladies once discover how much enjoyment they can obtain from driving a motor-car. That a great impulse will shortly be given to automobilism no one doubts; but, like the boom in connection with cycling, it will not come until ladies take up the pastime; and the new club, the formation of which we have met to suggest, will do much to attain this end.

\* Paper read at Lady Harberton's house on the 20th ult.

## THE HIRING OF A MOTOR-CAR.

IN Hawick Sheriff Court last week, Sheriff-Substitute Baillie presiding, Stirling's Motor-Carriage Co., Ltd., Hamilton, sued Mr. A. W. Kerr, Hawick, for £10, the balance of £14 for the hire of a motor-car for a certain period in June last. The defender stated that the car should have been delivered on Wednesday evening, June 7th, and that it did not arrive until Thursday evening; that it could not be fully used on Friday in running to and from Hawick races because the brake had gone wrong; and that by the time another brake arrived on Saturday the traffic to the Moor was over, and that in consequence of the breakdown arrangements could not be properly made for proposed runs to Kelso and Jedburg on the Sunday, nor could any advertising arrangements be made in consequence of the car not being forwarded on the Wednesday evening. He had offered £2 further in settlement.

For the pursuers, it was stated that the arrangement made was that the car be delivered on Thursday, no particular time being mentioned; that the car was ready to run on the Saturday, shortly after eleven o'clock, but that the driver could not see Mr. Kerr, nor did he see him on the Sunday morning although he waited an hour and the car was ready for the journeys. The road to the Moor by the Slitrig was steep for half the distance, and on account of that and the general traffic the brake had to be applied frequently, and this caused it to fuse on the Friday.

The Sheriff found that the pursuers had not fulfilled their agreement to send the car on the Wednesday evening. He gave decree for £2 without expenses.

## A FURIOUS DRIVING CASE.

At the Cambridge Police-Court last week Auguste Souvianan, a motor-car driver, of 2 Catharine Street, Chesterton, was summoned for furious driving. He pleaded guilty.

Police-Constable Wright said that on October 18th he was in St. Andrew's Street, when he saw the defendant coming down the road on a motor-car a little over twelve miles an hour. He took no notice of witness when he called out to him to reduce his speed, although he touched the lever a little, and proceeded along Petty Cury at ten miles an hour.

Defendant said he was an experienced driver, and could have stopped the machine with two powerful brakes within a yard.

The Clerk (Mr. J. Bennett) said it was a matter whether driving along Petty Cury at ten miles an hour was reasonable or proper.

The Bench considered the defendant was driving at an unreasonable rate, and, seeing it was his first appearance in court, they fined him 10s., including costs.

## FINED FOR FURIOUS DRIVING.

At the North Holland Petty Sessions, held at Donington on Thursday last week, Mr. Charles Jarrott was summoned for furiously driving a motor-car on September 2nd, at Donington. Mr. H. Snaith, Boston, appeared for the prosecution, and Mr. Charles London, defended. Inspector Davy, Mr. Hackett (veterinary surgeon), and Mr. Ingle gave evidence for the prosecution to the effect that the car was being driven at the rate of from eighteen to twenty miles an hour. Defendant, on oath asserted he was not travelling at more than fourteen miles an hour, the machine only being set at second gear. Mr. Ingle, who created some amusement, stated the thing went past "like a whiff of wind," and he had great difficulty in holding the two young horses he was driving. Questioned as to whether he had seen a motor-car before, witness answered in the negative, and expressed the hope that he never would again. The Bench considered the case proved, and imposed a fine of £5 and £2 7s. costs.

## A PROSPEROUS COMPANY.

THE directors and shareholders of Messrs. Hewetsons, Ltd., met on Monday, the 30th ult., for their ordinary general annual meeting. There was a good attendance of shareholders, and the directors proposed a dividend of 10 per cent. for the year ending September 30th, 1899. This was carried *nem. con.*, and a hearty vote of thanks to directors and officers of the Company concluded the proceedings. At the meeting it was stated that the Company have now sold upwards of 600 Benz cars in Great Britain, and have a large number of orders on hand.

A DESPATCH has been received at the Foreign Office from H.M. Ambassador at Berlin, forwarding a memorandum received from Mr. W. S. H. Gastrell, Commercial Attaché to H.M. Embassy, relating to the motor-car exhibition opened at Berlin on September 3rd last, in the course of which the statement is made that "there is no doubt the use of motor-cars of every kind is greatly on the increase in Germany, and the making of such conveyances likely to become an important industry in the near future."

# THE Motor-Car Journal.

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## COMMENTS.



IN the course of his summing up in the case *Steward v. Day*, referred to in another part of the present issue, Sir A. G. Marten, as Judge at the Henley County-Court, made some remarks regarding horses and motor-cars which are well worth repeating and commending to the consideration of horse owners in all parts of the country. Sir A. G. Marten said "inasmuch as it is known that things such as light locomotives are free to be used on roads it becomes necessary that the training of horses and animals likely to be frightened by motor-cars should be more complete, so that they may become used to them. Horses can easily be trained so as to be perfectly safe in the presence of motor-cars or traction engines." His Honour further emphasised the point by remarking that "a totally untrained horse would be frightened at anything and would be totally unmanageable, while there are other horses which have to be trained to stand fire. Horses attracted to railway stations stand perfectly still without paying the slightest attention to locomotives and do not seem to be distracted by them." The natural inference from this is that the time has come when horse owners instead of showing so much antipathy to horseless vehicles should recognise that automobiles have now equal rights to the roads and should render their horses accustomed to the sight and sound of motor-cars. As we mentioned in a recent issue, this rational course has been adopted by those responsible for the behaviour of the horses at Windsor employed in the service of the Royal Family, and with such an example before them the time should not be far distant when many horse owners in various parts of the country will find their time more profitably spent in giving a motor-car lesson to their horses than in sitting down and writing letters to "horsey" papers against "murderous motor-cars."

### 1,200 Miles Tour in Great Britain.

AN important scheme is now being developed by the Automobile Club which may have a great effect on the motor-car industry in this country. Probably something will be heard of the matter at the Club dinner next week. Meanwhile, we may say that it is the present intention to hold a series of trials at the end of March next, which should convince everyone of the fact that automobiles can no longer be regarded as merely in the experimental stage. These trials will practically constitute a tour of 1,200 miles—from London to Edinburgh and back, with halts at leading towns on the way to show provincial people the progress that has been made during the last year or two. Some time ago we mentioned that such a test was under consideration, and there is no doubt that if carefully carried out, as the Club organization is well able to do, the venture should have a very stimulating effect on the industry. Not only that, but

it should do something to suggest improvements to manufacturers in minor details, and so educate the makers as well as familiarise the public. The route will be through Bristol, Birmingham, Liverpool, Leeds, Carlisle, Glasgow, Edinburgh, Newcastle, Sheffield, and home again, and the whole event will probably occupy a fortnight. The announcement of further details will give added interest to the dinner of the Club, a special report of which, together with the other important doings of the coming week, will appear in our next issue.

### One Vehicle or Two?

A QUESTION of interest to all motor-cyclists came up for consideration at the Grimsby Borough Police-court last week when Captain Hervé H. A. Errington Josse, of Norman Villa, Bargate, was summoned for keeping a carriage without a licence. Mr. Hawkins prosecuted on behalf of the Inland Revenue Office, and Mr. Tonge defended. The question raised in the case was whether the vehicle was one carriage or two carriages. It consisted of a trailing car attached to a motor-cycle. Mr. Tonge described it as a compound vehicle, and said the matter required settling, because if it was considered as one vehicle they would be allowed to travel at a maximum speed of twelve miles per hour, but if it was two vehicles they could not go at more than six miles per hour. Mr. Josse was willing to take out a licence for it. Mr. Hawkins pointed out that if the tricycle and trailer counted as one vehicle the licence chargeable would be £2 2s., but if they constituted two carriages, the defendant would have to pay a licence of 15s. for each, making £1 10s. in all. The magistrate decided that it was one vehicle, and imposed a fine of a guinea.

### The Motor-Car and Sport.

ALTHOUGH the motor-car has not yet been trained to take five-barred gates and follow the hounds, it is being requisitioned to carry shooting parties to the rendezvous and be of service in other ways. In this capacity motor-cars can be usefully employed when no longer employed in catering for the public pleasure or convenience, and we notice that Mr. F. W. Fitt, of Charing Cross, Norwich, is letting out on hire a motor-car carrying nine passengers for golf and shooting parties. The idea should be profitable, and we shall be glad to hear from proprietors of motor-cars as to the popularity of their vehicles for such service.

### The Automobile Club.

THE Automobile Club has just commenced the issue of a little publication with the title "Automobile Club Notices." It is intended to take the place of the many notices which are from time to time issued to members, to afford to country members and others who cannot visit the Club frequently information concerning the doings of and at the Club, and generally to keep members in touch with the important work the Club has in hand in the interests of the automobile movement. The list of members of the Club is

steadily increasing. Recent elections include: Dr. Norman Elliott Aldridge, William Henry Andrews, Lord Robert Cecil, Q.C., Walter C. Crawshay, H. Harvey George, Clarence Knight Gregson, the Hon. Arthur Ernest Guinness, William Beckett Hill, H. D. Hitchin, Robert William Hudson, William James Hunter, B.A., Sir Edward George Jenkinson, K.C.B., Captain Herve Josse, H.A., Boyle Lawrence, Francis Howard Mercer, William Tertius Pretty, Clifton Robinson, John Davenport Siddeley, and Lieut. Walter George Windham, R.I.M. The total number of members now extends to no less than 540. In addition to the annual banquet, to be held on Tuesday evening next, the 14th inst, a house dinner will be held at the Club on Wednesday, December 13th, at 7.30 p.m. During the same evening a paper on "Traffic Regulation and the Speed of Motor-Vehicles on the Highways" will be read by Mr. R. E. B. Crompton. Sir Richard Webster, M.P., Q.C., the Attorney-General, has promised to be present on that occasion, and has been asked to take the chair.

#### An Automobile Temple Bar.

THE accompanying illustration shows a novel turn-out which figured in a recent special parade in aid of funds for the building of cottage hospitals. The car, an Iveagh phaeton built by the Motor Manufacturing Co., Ltd., is owned and was decorated by Mr. Henry Seal, of Enfield Highway. The scheme of decoration is intended to represent



Old Temple Bar, which is now erected at the entrance gate of Lady Meux's estate. The whole erection was built in a framework of bamboo canes, securely lashed and cross-tied. The main portion of the erection was covered by natural green leaves, the windows, gateways, etc., being bordered by real flowers. The costumes were supposed to represent those worn at the time of Temple Bar's palmy days. It will be noticed that although Mr. Seal illuminated his scheme of decoration with fairy lights and Chinese lanterns, yet he did not attempt to carry out the realistic decorations sometimes ornamenting Old Temple Bar, and hence the absence of the "traitors' heads." The decorated car was universally admired, and the committee awarded it the first prize.

#### Motor-Cars at Aberdare.

WE have already referred to the opposition which the Aberdare Motor-Car Co. has met in its efforts to start a motor-car service in Aberdare and district. Another public meeting was held on Tuesday night in connection with the matter, when, after a discussion which met with many noisy interruptions, a resolution deprecating the

licensing of motor-cars to private companies, and calling upon the District Council to run their own motor-cars, was carried. An amendment to the effect that the District Council were not justified in spending money on any speculation, and calling upon the Council to license the motor-cars, was proposed, but failed to receive sufficient support.

#### The Coming Week.

THE coming week will be a very busy one in the automobile world. On Monday there takes place the run of the Motor-Car Club to Brighton, and as will be seen from the preliminary list of cars whose owners have notified their intention of taking part, given on another page, over 120 vehicles are expected to be present. The start of the Automobile Club's run to Sheen House, Richmond, will take place on Tuesday at 12.15 p.m., and judging from the number of members and friends who have intimated their intention of being present, this outing also promises to be very successful. The annual dinner of the Automobile Club is also to be held at the Hotel Metropole on Tuesday evening. It is sincerely to be hoped that both automobile runs will be favoured with fine weather.

#### Automobile Club for Leicester.

EVERYWHERE in the provinces greater interest is being developed in the automobile industry, and this is by no means confined to any particular class of people. Men of every profession and calling are watching the development of the industry, and many are joining in all reasonable efforts to foster and further its success. The latest confirmation of this comes from the town of Leicester, where a meeting has been held at the Bell Hotel, Humberstone Gate, to consider how the interests of the motor-car could be protected and widened. Several members of the Town Council were present, and there was also a good representation of the leading business men. Ultimately it was decided to form a Leicester and County Automobile Club, and Dr. W. A. Griggs was elected chairman of the committee composed of the following gentlemen, viz.: Messrs. F. W. S. Clarke, G. F. Brown, A. H. Whitmore, and H. R. Harding, with Mr. J. H. Petersen, 9 Beatrice Road, as secretary. Messrs. Harding and Barnett, Horsefair Street, have been appointed solicitors, and headquarters established at the Bell Hotel. Evidently there is enterprise and fraternity among the Leicester automobilists, and we hope it will result in giving a great fillip to the motor-car industry in that part of the world.

#### Provincial Branches of the Automobile Club.

REFERENCE has already been made in our columns that efforts were being made to form a Scottish Automobile Club, or at any rate a Scottish branch of the Automobile Club. The formation of the latter has been practically decided upon, and we learn that a meeting is to be held in Glasgow on the 30th inst. to inaugurate the same. We also learn that the necessary steps have been taken to form a Manchester branch of the Automobile Club, and that the inaugural meeting will be held at the Queen's Hotel, Manchester, on Thursday evening, the 22nd inst.

#### An Automobile Wedding at Streatham.

THE automobile has begun to figure so frequently at weddings that soon little or no notice will be attracted by the same. The reverse was, however, the case at Streatham on Tuesday, when a wedding party appeared at St. Peter's Church in a couple of the British Motor Coupé Co.'s motor-broughams. The drivers of the cars looked quite smart, being provided with large buttonholes of chrysanthemums, while the steering hand-wheels of the vehicles were decorated

with white ribbon. The event passed off without a hitch, the bride and bridegroom being driven away in the first car and the bridesmaids in the second, amidst a shower of rice and confetti.

#### Automobiles for Municipal Work.

THE local authorities in the London district have not hitherto been credited with the same degree of enterprise as that shown by similar bodies in the provinces, but as regards the attitude taken up with respect to the adoption of motor-vehicles they seem to be leading the way. Only last week we referred to the steps that are being taken by the Chelsea and St. George's Vestries, while now we learn that at the meeting of the Strand Board of Works on Wednesday night Mr. H. W. Bridgman moved that a motor dust-van be employed on trial for two weeks. It was estimated that a motor-car of three tons weight would effect a saving of £232 per year in the cost of dust collection and street watering. Mr. Dunscombe seconded the proposition, which was carried unanimously. While the decision of the Strand Board of Works is one to be commended, yet in our opinion a couple of weeks trial is hardly sufficient to bring out the economical and utilitarian features of horseless vehicles—the tests should at least extend over a couple of months.

#### Veils for Ladies.

IN France a fan made of celluloid is coming greatly into vogue for the use of ladies when riding on motor-vehicles. This can be held before the face, and while preventing dust, etc., reaching the features of the fair chauffeurs does not obstruct the view. In this country more conservative notions prevail, and ladies keep to the veil with something akin to tenacity. Recognising this fact the introduction of a mask-veil in which the ordinary veil is utilised seems likely to become generally adopted. Under an ordinary veil a strip of xylonite is fixed, the whole being hooked to the hat in front and fastened behind in the ordinary way. As the piece of xylonite is shaped so as to cover part of the cheeks as well as to shelter the eyes, the device is a protection that should be appreciated by ladies when riding at a good pace. It does not interfere with free respiration, and being practically invisible can be adopted without exciting the curiosity of the public. Mr. Claxton is introducing the veil to the public.

#### Our Friend Mr. Staplee Firth.

LAWYERS, however astute may be their learning and cyclopædic their knowledge, have not yet, as a rule, been able to show a general interest in the motor-car. Our columns have shown how frequently the prejudices of country justices and the attitude of urban magistrates towards police evidence has resulted in cases going against automobilists. Curiously enough, however, Mr. Staplee Firth, a legal automobilist, has had a run of success in several recent cases he has defended. It would appear as though his practical acquaintance with automobilism had served him in exposing the ridiculous assertions made by police and other witnesses. We have seen lawyers defending owners of motor-cars quite unable to cope with the technology of the new industry, and confuse matters until the case was lost. Mr. Staplee Firth, on the other hand, has combined legal knowledge with technical acquaintance—to the advantage of his clients and the credit of automobilism.

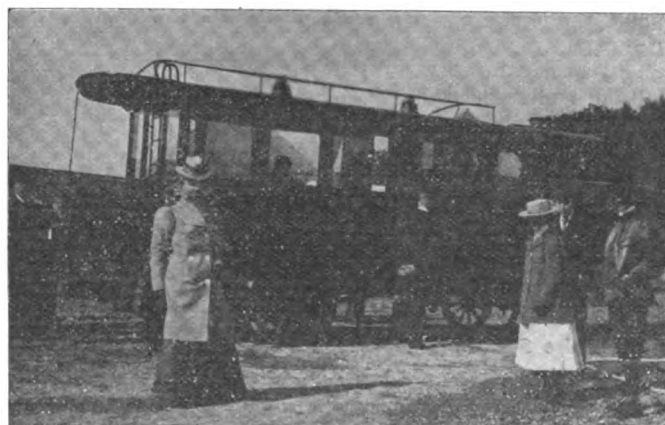
#### 4s. 6d. for a Motor-Car Smoke.

THE driver of at least one motor-car in the ancient city of Newcastle-on-Tyne has decided never to smoke while in charge of his vehicle. He did so the other day, but was summoned for the offence, and has had to pay the costs of the summons, 4s. 6d.—probably the most luxurious

smoke he has ever enjoyed. Evidently the corporation by-laws do not pay much regard to the trade of the tobacconist, an omission which even motor-car drivers will have to acknowledge.

#### A Self-Propelled Steam Fire-Engine.

IN our issue of September 22nd last we briefly referred to the self-propelled steam fire-engine recently constructed by Messrs. Merryweather & Sons, of Greenwich, S.E., for use in India. We are now able to give on page 565 an illustration of the vehicle, from which it will be seen that in general appearance it differs little from the ordinary steam fire-engine. By an ingenious arrangement of the machinery the engines can be disconnected from the fire pumps to enable an intermediate shaft to be driven by means of spur gearing. This countershaft is provided with balance gear, and drives the rear wheels by means of strong roller chains. The steering is effected from the front of the machine by means of a hand wheel, which revolves a vertical shaft attached to the fore-carriage with a small sprocket wheel and roller chain. The pumps have a capacity of 300 gallons per minute, and can force a powerful jet to a height of 150 ft. Before the engine was sent to its destination it was subjected to many severe tests as to hill-climbing capabilities, these being amply



THE "LIFU" BUS AT DOVER.

demonstrated in London, when it was found that such hills as Blackheath could be mounted at a speed of ten miles per hour, while on the more or less level roads over Blackheath to Shooter's Hill a speed of from fifteen to twenty miles per hour could be easily attained. The steering wheel, and all the arrangements necessary for regulating the steam and reversing the engine are within easy reach of the driver. A very powerful brake is provided, as well as an auxiliary brake arranged to work at the back by means of a screw and hand wheel. Seating accommodation is provided for firemen, and the entire weight of the machine, when fully manned and equipped with the necessary fuel, water, hose, and gear, is under three tons. The boiler is of the same type as that used in the construction of the engines supplied by this firm to the Metropolitan Fire Brigade, and is capable of raising steam from cold water in six minutes from time of applying a light to the fire. When the scene of conflagration has been reached the engine can be at once put into gear with the fire pumps, and got to work without any loss of time.

A SERVICE of electrical omnibuses is being started between Friedrichshafen and Ravensburg, Germany.

NEGOTIATIONS are in hand with the view of introducing a service of motor-omnibuses in the city of Budapest, Hungary.

LA SOCIÉTÉ DES FREINS STOP is the title of a new Company which has just been formed in Paris (74 Boulevard Haussmann) with a capital of £4,800 to exploit a new brake.

## MIDLAND MOTOR NOTES.

By "HERCULES."

The "Trials" of  
Midland  
Motor-Cyclists.

MOTORISTS in the Midlands think they have good cause of complaint at the treatment which was meted out to one of their number by the Coleshill magistrates last week. Mr. Harvey Du Cros, jun., of Metchley House, Somerset Road, Edgbaston, Birmingham, appeared before the bench on a summons for furiously riding a motor-tricycle on the Coventry and Birmingham road in the parish of Bickenhill on October 15th. Evidence was given by Mr. H. Eaden, of the Shrubbery, Yardley, who said he was driving on the Coventry road, near Stonebridge, when he was passed by fifteen or twenty motor-cars. Defendant was leading, and the motors were going at a speed not less than twenty-five to thirty miles an hour. Cyclists, of whom there was a number on the road, dismounted, and sought safety in the ditch at the side of the road. Witness's horse took fright at the motors. Another witness said the vehicles were going so fast that he could not recognise Mr. Du Cros. For the defence, Mr. Du Cros said the party did the distance between Birmingham and Coventry—eighteen miles—in two hours twenty minutes; they did not see the horse spoken of nor any cyclists get off their machines. There were few people on the road, it being Sunday. Mr. J. Urry, of Shirley, said the motor-vehicles were not going more than twelve or fifteen miles per hour. He denied that the horse shied, or that cyclists got off their machines. He told the magistrates plainly that the charge was a ridiculous one, as the machines could not have been driven at the pace without considerable damage to themselves. No nuisance was caused to a single individual. The magistrates, however, decided to fine defendant £2, and £1 13s. 6d. costs.

Gauging the Speed  
of  
Automobiles.

I HEARD a county-court judge observe the other day that not one person in a hundred could correctly tell the speed at which a bicycle or horse and trap were travelling as they passed. If this view were adopted by magistrates when they are trying a case like Mr. Du Cros's they would probably place little value on the statements of some witnesses. Of course, a man ought to be able to judge when any vehicle is going too fast or when the safety of the users of the Queen's highway is threatened. A great many owners of horses are largely prejudiced against motor-cars; they think motorists have no right to the highway at all; they have come to the conclusion that motor-cars are a general nuisance; and should their horses be of a restive nature and be frightened when an automobile passes they think they have a genuine grievance which should be ventilated in a police-court. If the general public treated the owners of restive horses in the same way, our magistrates would have nothing else to do but to decide cases brought against drivers. There is not the slightest doubt that many horses are a constant source of danger to cyclists and other users of the highway, but no one thinks of dragging their owners before the magistrates. And the police know better than to do so. So that gentlemen who own horses should not be the first to cast stones at drivers of self-propelled vehicles.

The Right of  
Motor-Cars  
on the Road.

STILL one does not wonder that country gentlemen should be somewhat tardy in recognising the claims of new inventions to equal rights upon the roads as themselves. One can never forget the early prejudice which was entertained against bicycles: they were held to be nuisances simply because horses could not quite make out what they were and were inclined to shy at them. The same thing is now being experienced by motorists, only in a greater degree;

and it behoves all who have taken to the new method of travelling to be extremely careful they do nothing to intensify the prejudice which a great many country gentlemen entertain towards them.

The New  
Courier  
Motor-Tricycle.

I HAD an opportunity on Monday of inspecting the New Courier motor-tricycle for two riders. The tricycle can be started without pedalling and without the use of a starting handle, by means of a rocking foot lever actuating upon a gear which the firm has patented. The machine can also be put in motion, stopped, and the speed graduated within any limit without any noise. I may also state that the aim of the makers has not been to attain an excessive speed, but to produce a vehicle which can maintain a good average pace both on the level and in climbing hills. A band brake is attached to the back wheel, and, if desired, the rider can have a perfect free wheel in running down hills. The seating arrangement is all that could be desired, and is upholstered in the best style. The front part can, when required, be converted into a carrier.

Motor Trials in  
the Midlands.

I HAVE already mentioned in these columns that a series of motor-car and cycle trials is being organized in connection with the Midland Cycle and Motor-Car Exhibition to be held in Birmingham from January 25th to February 3rd next. I have now received particulars of the competition, from which I learn that it will be open for:—(1) Single motor-tricycles, to carry one rider only; (2) motor quadricycles, to carry two riders; (3) light motor-cars or carriages, to carry not less than two or more than three passengers; (4) heavy cars or carriages, to carry any number of passengers not less than three; and (5) heavy luggage cars or carrier vans, to carry a burden of not less than one ton and two attendants. The trials will take place on the road between Birmingham and Coventry, starting from Bingley Hall and back, over a route yet to be decided upon, of which due notice will be given.

The Coventry  
Motor Industry.

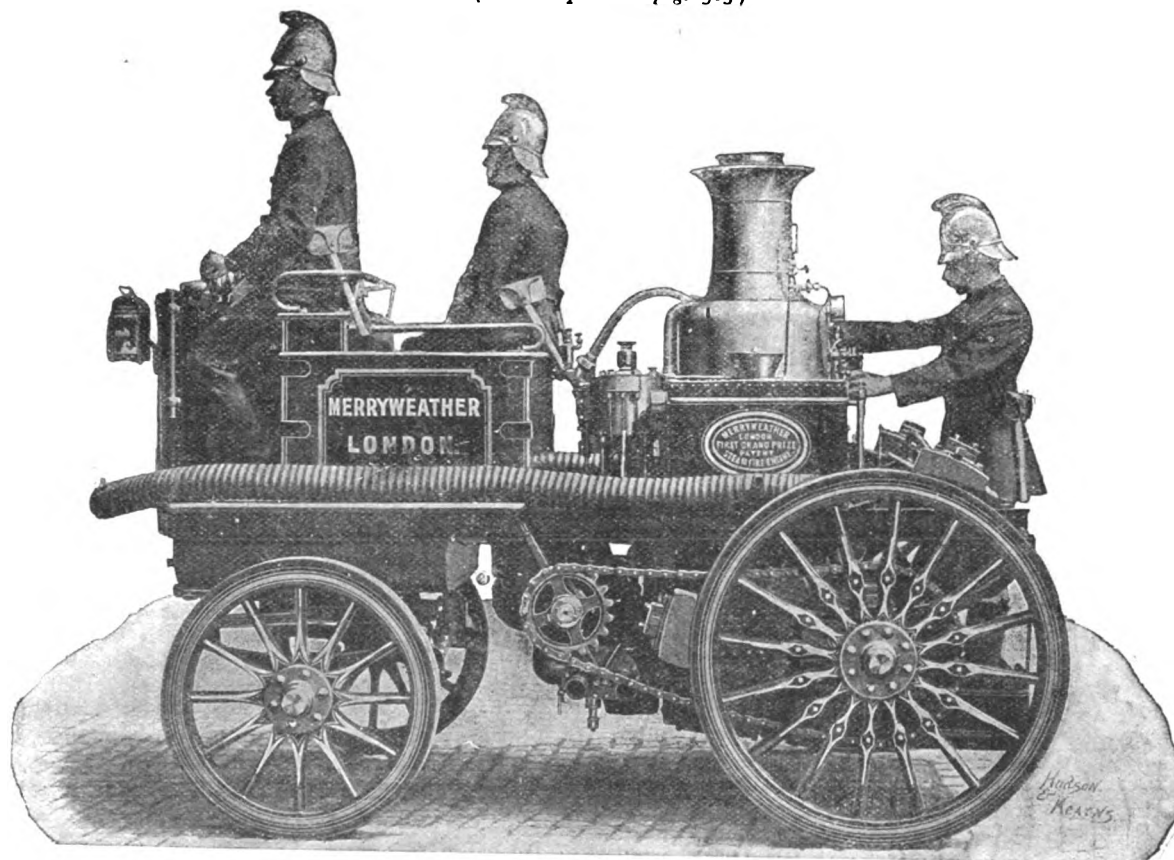
THE new Mayor of Coventry (Cr. W. R. Goate), in the course of a speech on Tuesday evening at the dinner of the City Fire Brigade, referred to the motor industry as one of the trades of Coventry. It was their youngest child, he said, and had scarcely reached an age at which they could predict whether it would run alone. But he ventured to believe that it would do so, and he hoped it would become a most successful trade. It had been hampered by the fact that science had not progressed sufficiently to enable manufacturers to turn out motors cheaply. But he believed the time would come when motors would glide about the streets, and leave no smell behind. He was sorry to see that in the country there was a sort of antagonism towards motor-cars, and he thought those connected with the trade had not sufficiently considered that they had to fight against owners of horses in the country. Motorists must do nothing to aggravate this feeling, but on the contrary should give way where possible, and in course of time these gentlemen would see that motor-vehicles were necessary to civilisation. In replying, another member of the City Council trusted that the motor industry would be fostered, and that the Corporation would do all they could to help it forward. He believed it would become the staple trade of the city, and would cause thousands of pounds to be circulated.

A WEDDING was recently celebrated at St. Germain l'Auxerrois, one of the most ancient churches in Paris, at which the entire bridal party arrived in some twenty motor-cars.



## A Self-Propelled Steam Fire Engine.

(For description see page 563.)



### SOME NEW AMERICAN STEAM CARRIAGES.

**M**R. EDWARD S. CLARK, builder of marine engines and boilers, 272 Freeport Street, Boston, Mass., is the designer and constructor of a steam carriage, which has been in use for several months, and which, states the *Horseless Age*, has shown itself well adapted for road use. In style it is a *dos-à-dos*, and its weight is 1,200 lb., all supplies on. Wire wheels, 30 in. and 34 in. respectively, with hubs  $5\frac{1}{2}$  in. wide and  $\frac{1}{4}$  in. spokes, swaged down to 3-16, are employed. The pneumatic tires are 3 in. in diameter. The frame is of steel tubing; the front axle is tubular and the rear solid. Full allowance is made in the front of the frame for the inequalities of the road. Roller bearings are used in the rear axle. All the machinery is encased in the body, the compensating gear, brake and driving gear being all enclosed together in a dust-proof case on the hind axle. There are two handles, one for steering, the other for reversing and regulating speed. The latter works straight up and down, and the former may be turned over and used on either side of the seat. A band brake is operated by a pedal. The boiler is of the water-tube type, so constructed that no explosion can take place, and there are no large surfaces to burn out. The safety valve is set at 300 lb., and a diaphragm closes the fire down at 250 lb. The boiler is fired by a petrol burner. The double-cylinder, reversible engines develop 6 h.p., a special reversing device being employed. The supplies consist of 5 gals. of petroleum-spirit, and 20 gals. of water, and the seating capacity is five or six persons if desired.

Mr. F. A. Darling, Franklin, Mass., has also constructed a steam carriage for his own use. The boiler is of the regular upright pattern, 13 in. in diameter and 13 in. high, and

contains twenty-six tubes and water fire-box. It carries 250 lb. of steam. Around the boiler are two coverings, the inner one being of asbestos and the outer of Russian iron. The tank in the back of the wagon body holds 10 gals. of water. Coke is used for fuel, the box containing 10 lb. The engines run either cross compound or high pressure on both cylinders; the small cylinder has a diameter of  $1\frac{1}{4}$  in. and the large one  $2\frac{1}{2}$  in., while the stroke of each is  $3\frac{1}{2}$  in. Power is transmitted by means of a "jack" shaft, first being taken from the engine by a chain and then to the wheels by a small spur gear on each end of the jack shaft, acting on an internal gear bolted to the hub. The outside of these internal gears is used for a brake. Around each gear is a leather band, which is connected to a small steam cylinder. Steam can be let into this cylinder at any time, causing the bands to tighten and act as brakes. The wheels are 34 in. diameter front and 38 in. rear. The hubs are of cast steel and contain roller bearings. The hickory spokes are forced into a groove on the outside of the hub and bolted through the two flanges. Pneumatic tires of  $2\frac{1}{2}$  in. diameter are used. The weight of the vehicle complete is 1,000 lb.

THE Birmingham Small Arms Co., Ltd., Birmingham, is the latest concern to take up the manufacture of driving chains for motor-cars, their first production being a roller chain of  $1\frac{1}{2}$  in. pitch, and  $\frac{1}{16}$  in. wide, the breaking strain of which is given as  $4\frac{1}{2}$  tons.

THE Dunlop Co. inform us that up to the present they have only been experimenting with solid rubber tires. These have been fitted to heavy vehicles and thoroughly tested, with the result that immediately after the coming cycle shows they intend to introduce these solid rubber tires to the notice of motor firms.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### An Electric Hansom Cab.

A NEW electric hansom cab has been designed and recently constructed by M. Camille Durey, a well-known Parisian builder of municipal carts and fire-engines. There is nothing especially new about the motor, the features lying in the perfection of construction and arrangement, the carriage itself being described as a model of that which is required for town use. The accumulators are of the "Fulmen" type.

### Hill-Climbing Contest.

IN connection with this race, which will take place next Saturday on the hill of Chanteloup, it is stated that M. Jenatzy has made a wager with M. Krieger, undertaking to cover the course of 1,820 metres at an average speed of sixty-nine kilometres per hour. As M. Jenatzy has doubtless taken into account the possibility of bad weather, this speed would appear to be his estimate of the prowess of "La Jamais Contente" on a 1 in 10 grade under adverse circumstances. It is therefore reasonable to suppose that, given fine weather and a good road surface, the famous torpedo-car will accomplish an extraordinary performance in this contest. The bet is said to be one of ten lunches, and the stakes—not steaks, if you please—are in the hands of M. de Santos-Dumont.

### French Automobile Club Notes.

THE number of members of the Automobile Club of France continues to rapidly increase, and there are now 1,970 names enrolled on the books. One of the recent elections was that of Mr. Claude Johnson, of the English Club, and it is proposed to celebrate the admission of the 2,000th member by a grand fête. On the 16th inst. M. Georges Rives, the director of the two exhibitions of automobiles, will be entertained at a banquet given in honour of his promotion in the order of the Légion d'Honneur, and a large attendance is anticipated.

### M. Charron's New Rôle.

NOT satisfied with his past successes in the cycling world and his present achievements as an automobilist, M. Charron has now taken to horse-racing, and on the 30th ultimo scored his initial victory in this branch of sport. As the owner of Bisbigho he had the satisfaction of seeing G. Stern steer the colt first past the winning post in the Prix des Croisades at the Vincennes meeting, and this early success should augur well for future victories.

### German Military Automobile.

ON the 30th ultimo, at Berlin, Major Madlung demonstrated before the Emperor William four automobiles designed to carry military baggage, or in special cases the soldiers themselves. The trials are believed to have given every satisfaction, and it is expected that the German authorities will procure a number of vehicles of this type.

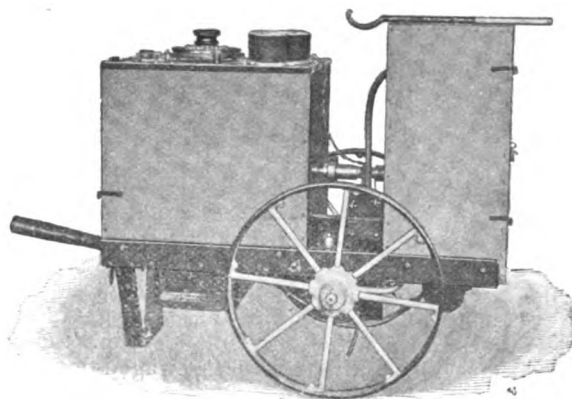
### Excessive Speeds in France.

THE agitation against the excessive speeds at which many automobiles are driven, often in narrow and crowded thoroughfares, is spreading rapidly, and unless chauffeurs exercise more discretion in this respect they will find their present privileges menaced by the authorities, and the now much-abused regulations re-framed on lines

infinitely more severe. Probably all French automobilists drive very fast in the country, for, generally speaking, their cars are powerfully engined and highly geared, but certainly all drivers do not conduct their vehicles at an unwise pace when traversing towns, and it is by the selfishness and the lack of discretion of the few that the whole community of automobilists will be made to suffer. Even in the country, doubtless travelling at a high rate of speed is somewhat risky, but there, whatever danger may exist threatens the voyagers themselves, and they are prepared to take their chance. In the town, however, circumstances are entirely different, and the pedestrian and the driver of the horse-drawn vehicle are continually inconvenienced, and occasionally made to suffer by the foolish conduct of certain chauffeurs. At Bordeaux, the recently-elected procurator of the Republic, M. Frémont, has written to M. Michel, the central commissioner, directing him to issue the most formal and precise instructions to the police that they shall take proceedings against every conductor of an automobile who does not rigidly conform with paragraph 2 of Article No. 14 of the decree of March 10th, 1899, which declares that the speed of an automobile shall be reduced to walking pace in narrow or encumbered streets. This order is the result of personal observation by M. Frémont, and it is to be hoped that drivers will take warning, and give the police no occasion for exercising their instructions.

### A Portable Accumulator Charging Plant.

IN the last issue of this Journal reference was made to the electrical vehicles of the Berliner Maschinenfabrik (Henschell & Co.), Charlottenburg, Germany. In connection with the same, the firm are making a very useful portable combination of petrol motor and dynamo, illustrated herewith. It is intended for the use of owners, or



those desirous of becoming owners of electrical cars, who have no handy means of re-charging their batteries. The combination is also recommended to hotel proprietors and others in country districts who are laying themselves out to cater for the wants of automobilists. When not required for charging the batteries of automobiles, the plant may be used to charge a set of accumulators to run a small electric lighting installation, or to operate a number of small motors for power purposes.

### Paris-Beauvais Motor-Cycle Race.

ON Saturday last, at 8.50 a.m., there started from the Porte Maillot, Bardin, Van Marck and Rigal, the only representatives of the original entries for the Paris-Beauvais race. Rigal soon abandoned, but the other two completed the journey of 87½ kilometres, Bardin finishing first. His time for the distance was 1 h. 51 min., the trying character of the route, more especially the portion near to Paris, making very fast time an impossibility.

**The  
Count De Dion.**

THE Count De Dion's electioneering campaign was brought to a successful termination on Sunday last, when he was duly elected General Counsellor of the Canton of Carquefou, in the Department of Loire-Inférieure. I may add that the Count utilised an automobile for making his rounds, and was thus able to visit all parts of his constituency with the greatest of ease.

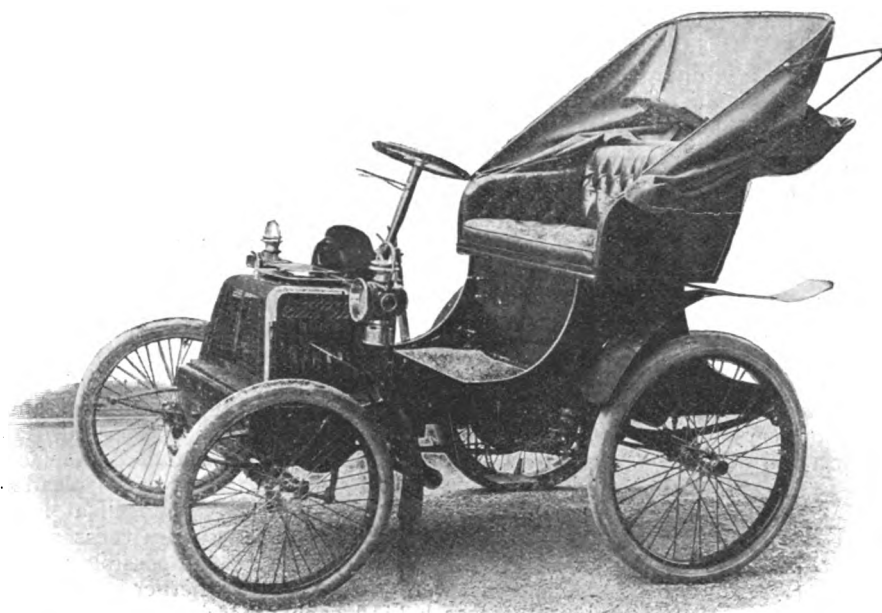


FIG. 1.—GENERAL VIEW OF THE SOCIÉTÉ BOURGUIGNONNE'S TWO-SEATED VOITURETTE.

**Marmande-Paris  
Record.**

BERTIN's attempt to establish a motor-cycle record from Marmande to Paris was not crowned with success, as at Châtelleraut he met with an accident in avoiding a carriage and could not continue. At the time of his mishap Bertin was thirty minutes behind his scheduled time.

**Italian  
Enterprise.**

I HAVE already announced in these columns that there has recently been formed at Rome a company destined to inaugurate public automobile services, and it now appears that the concern does not propose to confine its efforts to this branch of the industry alone, but will also manufacture and sell various types of cars, and will institute a number of "garages" and re-charging stations. The capital of the company is £200,000, and a powerful board of directors, with the Count Henry Avet at the head, has been secured.

**Accident in  
Belgium.**

ON the 2nd instant the Count Dumonceau de Beghental, while driving his automobile down a steep hill at Auderghem, near to Brussels, made a false movement, with the result that the vehicle overturned, and the Count and his servant were thrown violently on to the *pavé*. The former suffered a broken collar-bone and the latter had his head badly cut.

**THE SOCIÉTÉ BOURGUIGNONNE'S  
MOTOR-VOITURETTES.**

WE are able to illustrate herewith in Figs. 1 and 2 the light two and three-seated petroleum-spirit motor-voiturettes recently introduced by La Société Bourguignonne d'Automobiles (Messrs. Chesnay, De Falletans and Co.), of Dijon, France. As will be seen from the plan (Fig. 3) the motor is located in the fore part of the vehicle.

It is of the Gaillardet 3-h.p. vertical single cylinder type, fitted with electrical ignition. The cooling of the cylinder is effected in a novel manner, for in addition to large radial discs a water-spray device (illustrated in Fig. 4) is provided. Referring to the last-named illustration, it will be seen that the exhaust gases pass by a pipe *B* to a silencer *C*. At the lower end of the pipe *B* branches a second pipe *D*, along which flow a portion of the waste gases, first to the carburettor *E*, to heat the same, and then into the water-spray tank *H*. A three-way cock is provided at *G* to permit the gases to pass into the air or into the tank as desired. When allowed to flow into the tank the pressure on the water causes the latter to rise in the pipes *X Y* and be ejected in the form of a spray through the orifices *V* and *W* on to the discs surrounding the cylinder. The spray of air and water which issues from the orifices when the car is in motion creates a current of humidified air around the cylinder, which the makers claim, as a result of trials, materially assists in keeping the same cool. At the lower ends of the tubes *X Y* two small filters are provided, which prevent any solid matter passing along the pipes and blocking up the ends of the nozzles *V* and *W*. The arrangement is claimed to be very effective, two litres of water sufficing for a run of 300 kilometres.

Coming now to the transmission mechanism, four speeds are provided. On an extension of the motor-shaft is mounted a four-step cone pulley connected by a single belt to a similar pulley on the counter-shaft (Fig. 3). Provision is made for the tightening of the belt by means of a jockey pulley controlled by a foot pedal. A friction clutch is also provided in connection with the pulley on the counter-shaft, by means of which the motor can be instantly cut out from the transmis-



FIG. 2.—GENERAL VIEW OF THE SOCIÉTÉ BOURGUIGNONNE'S THREE-SEATED VOITURETTE.

sion gear when driving in crowded thoroughfares, etc. From the intermediary shaft the power is transmitted by a single driving chain to the rear road axle, which is provided with a

differential gear. Two brakes are provided—a band brake on the counter-shaft, which is applied at the same time as the friction clutch is thrown out of gear, and a band brake

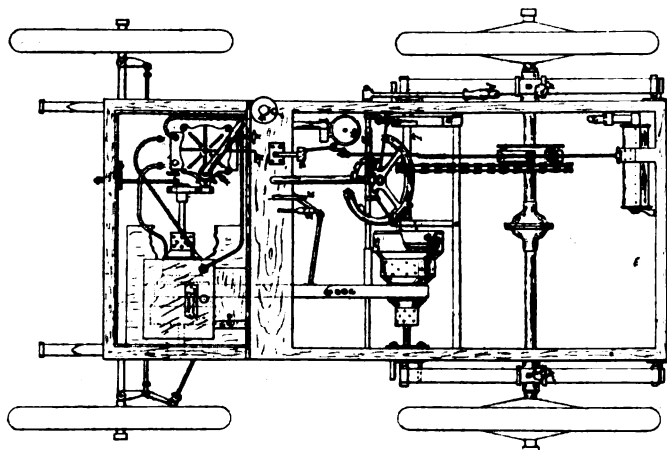


FIG. 3.—PLAN OF SOCIÉTÉ BOURGUIGNONNE'S VOITURETTES.

operated by a foot pedal on the rear axle. Steering is effected by means of a sloping hand wheel, on the standard of which is fitted an electrical contact breaker. The car is spring-suspended on the axles, while the road wheels are of the cycle type, fitted with pneumatic tires. Provision is made for the storage of motor-car spirit sufficient for a run

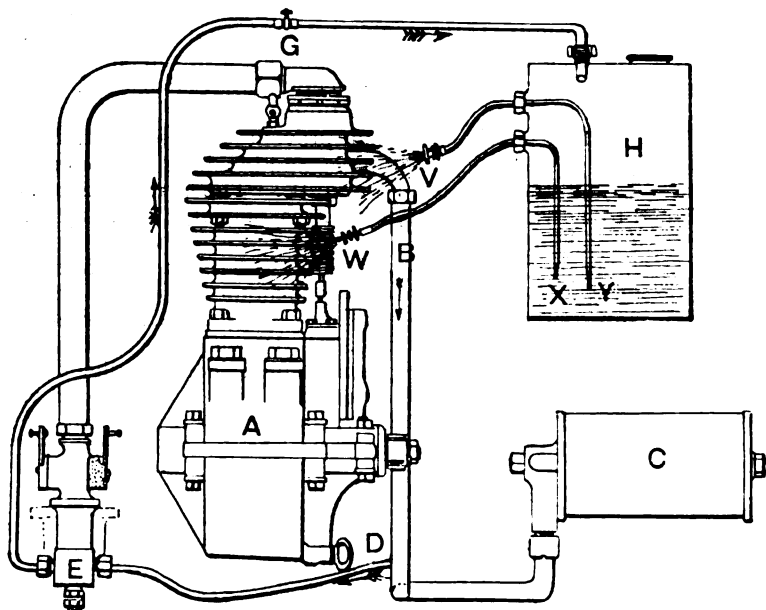


FIG. 4.—DIAGRAMMATIC VIEW OF CYLINDER COOLING DEVICE IN THE SOCIÉTÉ BOURGUIGNONNE'S VOITURETTES.

of 300 kilometres, and any desired speed up to 35 kilometres per hour can, it is claimed, be attained. In addition to the types of cars illustrated, the Bourguignonne Co. is also making one with a small "tiger" seat at the rear.

THE Sächsischen Automobil Club has just been formed in Dresden to promote automobilism in Saxony.

LA SOCIÉTÉ DES AUTOMOBILES L. CRÉANCHE has just been registered in Paris (7 Rue Brunel), with a capital of £5,000.

WE hear that the Ralpho-Watson Cycle and Motor Company, Oakfield Road, Altrincham, are about to introduce a new motor-tricycle.

AT Coleshill last week Mr. Harvey du Cros, jun., of Mitchley House, Edgbaston, for furiously riding a motor-cycle along the Coventry Road, Bickenhill, on the 22nd ult., was fined £2 and costs.

## CORRESPONDENCE.

### PROSECUTIONS IN LINCOLNSHIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—As bearing upon the recent prosecutions of motorists in the Lincolnshire district, probably my experience of "Justices' justice" (?) a few days ago may be of interest. It is quite certain that evidence is totally unnecessary for the purpose of obtaining a conviction in that district. Especially has this been the case in connection with those who were, or who might in the opinion of the police have been, concerned in Goodwin's record ride. The offence with which I was charged was for furiously driving a carriage on September 2nd, at Donington, near Spalding. This was the day after Goodwin's ride. The evidence of the prosecution was of the most remarkable description. One witness swore that we were travelling at twenty miles an hour, although at the time he saw us he was half a mile away and we were going away from him. The sergeant who lodged the information identified another person in the Court as being the driver, and it took him at least ten minutes close scrutiny before he was able to make up his mind that I was the person on the car at the time. Another witness stated that he identified me from a photograph, but upon cross-examination admitted that although there were only four figures in the photograph he did not identify me until the third attempt. This same witness swore we were travelling at the rate of 150 miles an hour (certainly a very respectable speed, and had the facts been true I should have been very pleased to have pleaded guilty and paid any fine imposed, consoling myself at least with the fact that I was on a flier). Another witness swore that we were travelling so fast that it was impossible to see how many persons were on the car, whether they were sitting side by side or behind each other; nevertheless, this witness had no difficulty in swearing that he most distinctly saw the driver! He further capped this statement by positively swearing that the *solicitor* who appeared on my behalf was the person driving the car, although this gentleman was 150 miles away on the day in question. On "evidence" of this description I was convicted, and fined the maximum amount.

The facts were as follows:—I was seated on the front seat of a Bollée at the time. I was, of course, not driving, as this would have been an impossibility in that position, neither did I drive at all on the day in question. We were not travelling fast, as although the machine had two cylinders only one was working at the time, owing to a derangement of the mechanism which occurred on the previous evening. I was not pacing Goodwin and was not stopped by anybody, and although we passed a number of policemen on the road in different places they made no sign whatever about our travelling faster than we ought to have done.

40 Holborn Viaduct, E.C.,  
November 4th, 1899.

Yours truly,  
CHAS. JARROTT.

### THE CINEMATOGRAPH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am writing this at the highest village in England—Nenthead,—and our motor-car is safely stabled at the Miners' Arms, so we have brought the car, fully loaded, up one of the steepest hills in England—Kilhope Hill—and when at the top we were over 2,000 feet above the level of the sea. From the summit of Kilhope Hill to Nenthead is only one mile, a winding descent of 600 feet, for Nenthead is only 1,400 feet above sea level. The road being so wet, the band brake did not grip so well as it should, and when we reached the level ground we found that the leather of our band brake had fired. Mr. Sinclair soon remedied this, and to-morrow we start for the highest market-town in England—Alston.

Just a word or two about the other journeys during the

past week, which were Stanhope to Wolsingham, thence to Lanchester, next to St. John's Chapel, and then to this place. At Wolsingham we had run short of motor-car spirit, and as our next supply was not due until we reached St. John's Chapel, Mr. Sinclair took a run over to Bishop Auckland, when Mr. F. Shaw, manager of the Auckland Motor-Car Co., was good enough to let us have a supply sufficient for our needs. Wolsingham to Lanchester and the return journey over the same road was ten miles of the most hilly country we have yet experienced, not so steep, although one or two hills were very bad, but a succession of up and down hill all the way.

Yours, etc.,  
T. J. WEST,  
Manager of the Modern Marvel  
Co. (Ltd.), of Edinburgh.  
Nenthead,  
Cumberland,  
November 8th, 1899.

### IMPROVEMENTS IN DIAMLER CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—We fail to understand Mr. Estcourt's letter which appears in your last issue. We are aware that the cooler was fitted to the car by Messrs. Brooke, of Lowestoft, and that probably some alterations to the dash-board, etc., necessitated by the cooler, were carried out at Coventry, but essentially the cooler was made and supplied by ourselves. Although it was fitted to the car by others, and perhaps several details added, that does not alter the fact. Other cooling tubes might also be fitted in place of ours in the arrangement, and we shall be interested to hear with what result.

With regard to the other points raised, we fail to see that any beneficial results can be obtained by publicly discussing the claims made, and, as far as we are concerned, this will close the matter.

Yours faithfully,  
THE CLARKSON & CAPEL STEAM  
Deverell Street, London, S.E., CAR SYNDICATE, LTD.  
November 7th, 1899.

ACCORDING to a transatlantic contemporary the automobile never ceases to be an attraction at the modern country fair, and several persons make their living by making the circuit of the country fairs.

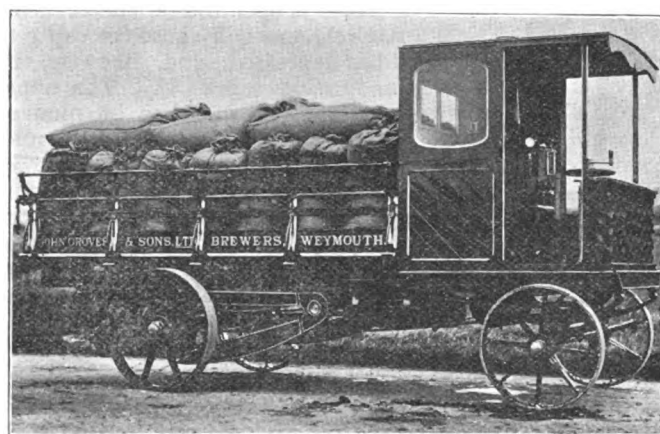
THE Fairmount Park Commissioners, Philadelphia, Pa., have so far relented that they are making test runs with motor-carriages to ascertain the effect on horses in the park. A resolution requesting the admission of motor-vehicles to the park was recently introduced in the Council.

THE London Motor-Van and Wagon Co., Ltd., of Tottenham Street, London, W., who are now making a speciality of light vans and cars for public service, are, we hear, arranging to let out on hire a number of motor delivery vans to meet the demands of tradespeople as regards the extra traffic at Christmas time. Not only will motor-vehicles be found admirably and economically adapted for that purpose, but their use will in itself constitute a good advertisement to the firms sufficiently enterprising to make use of automobiles.

IN their second annual report the directors of Brampton Bros., Ltd., regret that the results of the year's trading are, owing to the crisis through which the cycle trade has been passing, of an unsatisfactory character. The net profit (£412 12s. 3d.) not being sufficient to pay the preference share dividend, the vendors who hold practically the whole of the ordinary shares, having every confidence in the future of the business, have arranged to provide a sum sufficient to pay the preference dividend for the year. The directors speak hopefully of the future of the motor chain trade. They state that practically the whole of the recent trials of motor-cars in France, where the motor industry is much more developed than in this country, have been won by vehicles fitted with the Company's chains.

### THE COULTHARD THREE-TON STEAM DRAY.

THE accompanying illustration shows a three-ton steam dray which has lately been completed by Messrs. T. Coulthard & Co., of Cooper Road, Preston, for a firm of brewers at Weymouth. The vehicle is 15 ft. 6 in. long by 6 ft. 6 in. extreme width. The wheel base is 9 ft. 6 in. longitudinally and 5 ft. 8 in. centre to centre of tires transversely. The platform, which is carried on a steel frame, is 10 ft. 6 in. long by 5 ft. wide. The front wheels are of iron throughout, 2 ft. 9 in. diameter, and have tires 4 in. wide; the driving wheels are 3 ft. diameter, and have tires 5 in. wide, the front wheels being fitted on Ackerman's system controlled by worm gearing and a hand wheel. The boiler is of the fire-tube type, constructed for a working pressure of 200 lb. to 225 lb. per square inch. Water is fed to the boiler by means of a small pump, which is driven at a reduced speed by means of gearing. The inside of the boiler can be lifted out for cleaning purposes without removing any of the steam fittings. Liquid fuel is employed to generate steam. The lorry is fitted with an air condenser, placed in the front of the vehicle. The engine is of the firm's special triple-expansion vertical type, and develops 14 b.h.p. when running at 500 revolutions per minute. Spur gearing is used to transmit the power from the engine shaft to the



first motion shaft by means of clutches, while Renold's chains form the connection between the counter-shaft, the differential gear and the driving wheels. The gearing is arranged to give a ratio of 7, 11½, and 19½ to 1 between the engine and the driving wheels.

The vehicle is fitted with two brakes, a band brake on the second motion shaft and a shoe brake on the driving wheels. The former is actuated by a foot lever, the latter by worm gearing. By means of a clutch the direction of the vehicle can be readily reversed. The water tank holds 65 gallons and the oil tank 25 gallons. In the improved engine the cylinders are arranged in such a manner as to provide only a very thin wall between the bore of each cylinder, and the piston valves are at the back of the cylinders. By this system the firm claim that they are enabled to dispense with the usual central bearing, and, by using a slightly larger shaft and by careful balancing, ensure uniform pressure on the two main bearings. The hot water tank is also arranged so that the condensed steam is conveyed from the feed water heater, the air condenser, and the drain cocks on the cylinder. The object of using this hot water tank is as follows:—Assuming the cold water tank to be filled with water, the hot water tank will then be empty and the proportions of the two tanks are such as to ensure the whole of the cold water being taken from the tank before the hot water tank has been filled; the hot water is then transferred to the cold water tank, the hot water tank being afterwards filled



up. The latter tank is emptied by the aid of a water lifter, which is also used for filling the cold water tank. By this arrangement satisfactory working of the boiler feed pump is obtained. The speeds are  $2\frac{1}{2}$ ,  $4\frac{1}{2}$ , and  $7\frac{1}{2}$  miles per hour forward, and 2 miles per hour reverse.

### THE LEPAPE CARBURETTOR.

**A**N improved form of carburettor for petroleum-spirit motors has lately been devised by M. H. Lepape, of 23 Rue Montaigne, Paris. As will be seen from the sectional view herewith, it comprises a cylindrical body provided with a chamber *c* which can be closed both at top and bottom by valves, the stems of which are respectively surrounded by coiled springs *X* and *z*. The cylindrical body at its top is closed by a cap *g* through which passes an adjusting screw *V* engaging the stem of the valve *a*. In the lower portion of the cylinder a bell piece is mounted, which is surrounded by wire gauze *P* through which the heated air passes. The liquid to be vaporized enters at *m*, beneath the valves. The explosive mixture finds its exit through the tube *T*.

In inoperative position the lower valve is slightly forced from its seat by the upper valve, the two valve stems telescoping within each other. The movement of the stems is limited by stops *e*. The valves being in this position the liquid will fill the chamber *c*. When the inlet valve of the motor is open the resistance of the wire gauze will cause the cap *g* to be depressed, and, likewise, its adjusting screw *V*. The upper valve stem will then be plunged into the chamber filled with liquid.

By this operation the lower valve will be closed, thus cutting off the communication between the supply reservoir and the chamber *c*. As it continues to fall, the cap will force the valve stem *f* into the liquid contained in the chamber *c* and will cause it to displace a volume of liquid equal to that of the immersed portion. The volume immersed and consequent displacement can be regulated to meet the requirements of the motor, by means of the adjusting screw *V* of the cap *g*. By turning the collar *d* a supply of fresh air can be admitted to diminish the vacuum produced by the intake, and consequently to regulate the quantity

of liquid which falls on the wire gauze *P*, since this volume depends upon the degree of immersion of the stem. The liquid which falls upon the wire gauze is vaporized by the hot air and passes to the cylinder of the motor, mixed with air.

It therefore follows that the admission of a supply of cold air regulates the quantity of liquid which should pass to the cylinder, and the proportions of air and gas in the explosive mixture introduced within the cylinder of the motor.

The screw *E* serves to release any air from the liquid supply tube, and to permit a small quantity of liquid to flow, in order to facilitate the starting of the motor. The device is claimed to give a perfect carburation without odour or smoke.

THE Paris Salon du Cycle et de l'Automobile will be held this year at the Salle Wagram, from December 12th to the 27th.

THE New Courier Cycle Co. has been registered, with a capital of £10,000, to acquire the business of cycle and motor-car manufacturers carried on by the New Courier Cycle Co. at Alexander Street, Wolverhampton.

### THROUGH PERTSHIRE IN A HORSELESS CARRIAGE.



**O**UR Scottish correspondent, "Brown Heather," sends us the following account of a motor-car tour through that most charming of Scottish counties—Perthshire—handed to him by a friend, Mr. J. D. Brimlow. The tour, which was a most enjoyable one, was undertaken in a sporting Stanhope, hired from the Hamilton dépôt. The route chosen was a splendid one, and might well be followed by any who intend taking such a tour, but who may be in doubt as to where to go.

"Leaving Motherwell on July 29th about 7 a.m., a smart run was made *via* Denny to Stirling, which was reached about 9.30. After half an hour's delay the journey to Scone through Perth was resumed. The reason for visiting Scone was to leave one of the party to visit the ancient palace and to spend a few hours at a friend's strawberry farm. After a well-spent hour among the fruit, the journey was continued to Dunkeld, where, after refreshing the motor with water, the last stage of the journey was begun. Keeping on the north side of the Tay, Ballinluig and Grantully were passed, and at about 9 p.m. we reached our destination, a farmhouse near Aberfeldy. Throughout the day the sun shone brightly, and the running was most pleasant and exhilarating. Sunday, 30th, was spent as a day of rest. On Monday, the 31st, as the motor-car spirit was delayed in transit by the railway company, only a short spin was taken, Kenmore being the destination. This beautiful village and its environments were visited by the party, the Castle of Taymouth, in the midst of its romantic and picturesque scenery, being much admired. This imposing structure, the residence of the Marquis of Breadalbane, is most exceptional in the grandeur of its situation and architecture.

"On August 1st the direction taken was along the River Lyon to the quiet and rustic village of Fortingall. The famous yew tree (said to be 3,000 years old), the alleged birthplace of Pontius Pilate, and the well-preserved remains of the Roman Camp were all visited. Continuing up through the wild recesses of Glen Lyon, the McGregor's Leap was seen. At a certain point in the road near the entrance to Glen Lyon a stop was made, where an excellent view of the Glen, with the Lyon roaring hundreds of feet below, was obtained. The wild grandeur of this scene is unexcelled in the Scottish Highlands. Three of the party, evidently considering this district deserted, proceeded to bathe in the Lyon, as the heat was great. Whilst they were floundering about in the water, and *in puris naturalibus*, they were suddenly surprised by a party of ladies driving past. The confusion was extreme, and the position was ridiculous; but there were no casualties! After a magnificent run, over a road narrow and even dangerous at parts, Bridge of Balgie, a telegraphic terminus, was passed. Here the main road was left, the Bridge crossed, and a detour made across the hills. The road proved narrow, very difficult on account of its loose, stony surface, and the steep gradient. Every member of the party at first had to walk, but later for at least three miles to the summit all hands were compelled to aid the motor, with shoulders to the wheel. In a hot, broiling sun this task was most arduous, but was viewed with much pleasure afterwards. It was thought that once the summit was reached all troubles would be past, but it proved quite the contrary, as the downhill gradient was very steep, the road unsafe and

narrow, on one side high hills rising, and on the other dangerous and precipitous descents. Driving here was therefore a work of difficulty, but the motor was kept well in hand by Mr. B., and after about an hour's excitement the main road along Loch Tay to Kenmore was gained. This hill road was never before crossed by a motor-car, as stated by the proprietor of Lawer's Hotel, and is very seldom used by ordinary vehicles. It is unsafe for motor-car tourists, but the scenery is magnificent. At Lawer's Hotel tea was taken. The hospitality exhibited here was unsurpassed by any experienced during the tour, and was taken advantage of on as many occasions as possible. Afterwards Aberfeldy was reached after dark.

"On August 2nd no distance of importance was covered, as Aberfeldy itself was considered worth attention. The falls of Moness, immortalised by Burns, were visited, and the beauty of these fine cascades among the birks could not fail to be admired. Trying to keep up the pace of the motor, which could not be taken up the glen to the falls, the party literally trotted round the falls in truly Yankee style.

"Travelling along the left bank of the Tay to Ballinluig the party, on August 3rd, went along the corresponding bank of the combined rivers Tummel and Garry to Pitlochry. The pass of Killiecrankie demanded attention, the party leaving the car on the main road to walk along the river Garry. The deep pools and rugged rocks near the site of the battle were much admired, as well as the house visited by Marie Corelli during the last few summers. At the upper end of the pass, where the famous Queen's View is obtained, a specially narrow and precipitous strait among the rocks is known as the Soldier's Leap. Here many hundreds of soldiers during the battle of Killiecrankie fell or were thrown into the Garry. A continuation of the journey took the party to Blair Athol, where the local Duke's princely castle of Blair was seen. The journey ended here, and a fast return through Pitlochry to Aberfeldy was then made.

"Perhaps the best tour of the holiday was the next day (August 4th). An early start was made from Aberfeldy, the party crossing the hills to the south, the road through Amulree, past Strath Braun, being followed. The wild, desolate grandeur of the Sma' Glen was the striking feature of this district, and the drive through it extremely pleasant. Crieff was passed through, and a smart run made to Comrie, thence along the lovely valley of the River Earn to St. Fillans. Here no delay being necessary the journey along Loch Earn to the village at its head was pursued. The loch road is excellent, and splendid for motoring. From Lochearnhead, up Glen Ogle, the road, though steep, is good, and though the progress is slow the time is well occupied admiring the grandeur and variety of the huge rocks on the hillsides. A bright and fast run was made down-hill from the summit of Glen Ogle to Killin. Here the inhabitants turned out in large numbers to inspect the car, and kindly supplied pails with which to fill the tank with water. The remarks made, questions asked, and the answers given, were somewhat original at times. Whilst the lamps were being lighted, a local cobbler explained to the multitude assembled that the tires were being inflated! Needless to say the tires were solid. The remainder of the road to Kenmore was taken up with admiring Loch Tay, a splendid view of which is obtained from many points of vantage along the north road. The extensive area of hill and lake scenery is perhaps about the best in Scotland."

(To be continued.)

THE pacing machine branch of the motor business is receiving a good deal of attention in America. The Waltham Mfg. Co., of Waltham, Mass., are going into that line of business quite extensively, and a steam motor pacing machine is under construction at the Newton works of the Locomobile Co. of America. The motor, placed between the front and rear seats, will be operated by the rear rider, while the front man looks after the steering of the machine.

## SCOTTISH NOTES.



### "Furious" Driving.

ROBERT GIBSON, a motor-car driver, in the employment of Stirling's Motor-Carriages, Ltd., Hamilton, was charged at Lanark Borough Police-Court last week with driving a motor-carriage in a furious and reckless manner. Accused, who had driven from Hamilton to Lanark with a party of five, and was on his return journey, pleaded not guilty. He asserted that his speed at the time could not have been more than eight or nine miles per hour, and that he was using his brakes. Notwithstanding the fact that five witnesses, who were in the car, all corroborated the driver's evidence, the presiding magistrate, Provost McLeay, preferred to accept that of Mr. Williamson and his two servants, the witnesses for the prosecution. Mr. Williamson, it appears, had a collie dog, which ran in front of the car and got killed. It is very probable had this not occurred nothing unusual or excessive would have been noticed in the speed of the car; but of course this unfortunate circumstance (which might or might not have occurred even had the car been proceeding at half the speed) was the means of collecting a crowd, with the usual result. During the hearing of the case the magistrate, Provost McLeay, adopted the extraordinary proceeding of inviting the chief witness for the prosecution to sit beside him.

### Motor-Cars in Elections.

BUSINESS took me into a Scottish town this week where an election was going on, and I was struck by seeing a horseless carriage making a very good show in the sandwich board line. The car had an ordinary lorry body, on each corner of which a pole about four feet high had been erected. Stretched tightly from pole to pole was white canvas on which was printed the magic words, "Vote for —," etc. The car appeared to be plying about the streets of the ward in which the election was taking place nearly the whole day, and needless to say made a capital running advertisement. The idea was a novel one, and excited a good deal of interest.

### A "Lifu" Steam Bus in Edinburgh.

THE Edinburgh Autocar Company are forging ahead. Not content with their already extensive fleet (if one may use the word) of Daimler wagonettes, they have just added one of the well-known Lifu steam motor vehicles. It is a handsome carriage of the wagonette type, and is capable of accommodating about twelve to fourteen passengers. This is a very useful size for companies which go in for hiring, and the fact should be borne in mind by manufacturers. The great objection made at present by job and post masters who look favourably on the horseless carriage is that the average car costs so much money and carries so few people. There is a lot of truth in the contention, for a brake or chars-a-banc with horses to pull it may be purchased for about £50, but almost another cypher has to be added to this sum before anything approaching this in carrying capacity can be purchased in the shape of a motor-car.

### A Falkirk Flare.

A FIRE, which might have proved a very serious affair, occurred in the depot at Falkirk of the Falkirk District Motor Co., Ltd., last week. It appears that one of the car attendants, whose duty it was to refill the petrol tanks at night, was so careless as to use a lighted candle to show him his way about. He had placed a candle on the splash board over the front wheel of a Stirling-Daimler wagonette, and not more than two feet from the petrol tank

of the car. He then calmly proceeded to recharge the tank, and had just succeeded in doing so when in rising from his stooping position he struck the seat rail and slightly jerked the car and upset the naked candle. There was a huge flare up in a moment and it looked as if the whole fleet of thirteen cars was doomed. Another assistant who was in the place at the time, observed that the stopper of the tank was off, and fortunately succeeded in screwing it on, although he was severely scorched in doing so. But for his presence of mind the damage would have been serious. As it was, the woodwork of three cars was partially destroyed. It is hardly conceivable that any sane individual would use a naked light when so employed, especially when he was aware of the inflammable nature of the oil he was handling, as this man must have been, having been several months in the place. I know of several car depots where many thousands of gallons of motor-car spirit have been handled, and not the slightest accident has occurred at any time; and none need ever occur if ordinary care is exercised when the tanks are being refilled.

"BROWN HEATHER."

## MODERN STEAM WAGONS.

THIS was the title of a paper read by Mr. George A. Burls, A.M.Inst.C.E., at a meeting of the Civil and Mechanical Engineers' Society, at Westminster last week. Referring to the Locomotives on Highways Act, 1896, he said that a very strong consensus of opinion at present existed among engineers as to the undesirability of laying down any fixed tare limit. The reason adduced for the imposition of the present three-ton limit was that many small bridges on country roads were not strong enough to withstand the transit of a heavy automobile. The remedy, however, was clearly to have those bridges strengthened to accommodate the traffic called for by the requirements of the age. Again, it was very generally agreed that the damage to the road surface was very much less than that caused by the horses' hoofs, some going even so far as to maintain that the broad, smooth tire of the heavy automobile actually improved the road surface. Experience gained since 1896 had shown that with the existing three-ton tare limit, not more than, at the very most, four tons of useful load could be taken on one vehicle. It was true that the law permitted a second vehicle to be hauled, the joint tare of motor and trailer not exceeding four tons, and that it was thus commercially practicable to deal with as much as six tons of useful load; but such heavy-load "steamobiles" could only be built within the three-ton tare limit with the very greatest difficulty.

A large demand existed for the transport of loads of six to eight tons on one vehicle, and this would be immediately met with the making of the much-needed amendment. With regard to the use of a trailer, the cases in which it might be usefully employed were not so numerous as might have been supposed. The manœuvring powers of the "steamobile" were much diminished when hauling another vehicle, and this was a serious objection to the latter in cases in which the vehicle is required to run backwards through tortuous lanes, and in cramped yards and wharves, for the purposes of loading or discharging.

Under the head of "Total Cost of Running," Mr. Burls remarked that in the present state of the "steamobile" industry, it was safe to say that the inclusive cost of running, after making liberal allowances under each of the above heads, did not exceed 2½d. per net ton-mile, and that with coal or coke the fuel cost in many cases was as low as ½d.; with oil fuel the cost might amount to 1d. or more; the superior cleanliness, and possibility of automatic firing with oil outweighs, however, in certain cases, the disadvantage of greater expense. The author supplemented his remarks with the result of a diarial account of the running of a steam-wagon during a year. The total cost of running per working day comes out at £1 8s. 5d., and the total cost per net-ton mile at 3½ pence. The owners of this "steamobile" consider that it easily replaces three of their two-horse wagons; that is, six horses, three wagons, three drivers, and three lads.

The author subsequently proceeded to describe the general arrangement and details of mechanism of a number of steam vehicles, illustrated by large wall diagrams, drawing special attention to the Thornycroft standard three-ton wagon. The paper concluded with an expression of confidence in the future of the automobile movement, not only for purposes of pleasure and the carriage of light loads, but also, and especially, for the transport of large quantities of goods and materials over considerable distances with great economy and advantage.

THE Lancaster and Morecambe Motor-Car Co., Ltd., Lancaster, is being voluntarily wound up.

MESSRS. L. PERRIN & Co. is the style of a new firm which has just been established at 12 Rue Mouton-Duouet, Paris, to deal in motor-car and cycle accessories of all kinds. The firm has sent us an abridged list of their specialities, which appears to comprise everything, from a sparking plug to a chauffeur's leather suit.

## THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.

A MEETING of the Council of the Self-Propelled Traffic Association took place on Monday evening, Mr. A. L. Jones, J.P., Senior Vice-President, in the chair. There were also present Messrs. H. H. West, S. B. Cottrell, A. Musker, W. J. Davey, J. Walwyn White, Professor H. S. Hele-Shaw (Vice-President), Mr. E. Shrapnell Smith (Hon. Secretary), and Messrs. A. F. Warr, M.P., and C. M'Arthur, M.P. Letters of apology were received from Mr. John A. Brodie (City Engineer), Mr. Anthony G. Lyster (Engineer-in-Chief Mersey Docks and Harbour Board), and Mr. F. C. Danson (President Liverpool Chamber of Commerce).

It was explained that the object of the meeting was to inform the Parliamentary representatives present of the proposal to have the law altered with regard to the regulation of motor traffic on highways, so that a wagon of four tons weight (unloaded) might be allowed for goods traffic instead of three-ton vehicles.

The Chairman said the limit of three tons retarded the extension of this traffic, and it was important that the proposed extension should be granted. Owing to the need of using fine material, three-ton wagons were expensive, and it was thus more difficult to provide a wagon of commercial value. They were perfectly certain to get such a wagon, the advent of which would confer one of the greatest possible benefits on the community, particularly to a port like Liverpool. The cost of working a motor wagon compared with a horse wagon was about half, and the work would be much more expeditiously done. They could work a motor wagon within an area of fifteen or sixteen miles around Liverpool, and this it would be readily seen would open up the suburbs to the manufacturers and others, and thereby greatly increase trade.

Professor Hele-Shaw said it was admitted that it was quite possible to construct a motor-vehicle under the present limitations to carry, say, four tons safely and satisfactorily, but after their experience of the recent trials they could not admit that at present it seemed possible to construct, upon a commercial basis, vehicles to carry seven, eight, to ten tons, which they were told they would require for the trade of this port. There were two reasons. One was the cost of construction, which would be very great. For instance, one vehicle at the trials had a quantity of aluminium in its construction, and this was an expensive metal, so that in these circumstances the first cost would be greatly increased, and the question of deterioration and repairs would become more serious. The present law seemed to defeat its own object—it placed no restriction on the total load carried. It required a four-inch tire. They were quite prepared to arrange for tires very much wider, and it would be a much more scientific and practical solution, if necessary, to limit the total load carried per inch width of tire. They were quite prepared to fall in with any regulations which embraced this principle of wide tires for heavy loads. From their recent experience it was possible to conceive of a vehicle which would take goods down hill, deposit them, and find it unable to mount the hill again light, so as to be compelled to load up again to return. Some vehicles at their trials fulfilled satisfactorily all the conditions with loads which were unable to climb a hill when light. This was an anomaly. A year or two ago they could not have said this or spoken with such confidence, but their trials, which were regarded as sound, trustworthy, and classical, made it possible to say with certainty that data were now forthcoming which would support these views.

Mr. West said that what they wanted was not to have a limit—or to have a higher limit—for the tare weight of the vehicle. Four tons had been suggested—he would suggest five—or no limit at all. The Local Government Board would still have the power to prevent vehicles too heavily loaded from using bridges, etc., where there might be any danger. The four-inch tire was already exceeded, and would be exceeded still more, and this would mean a heavier unloaded vehicle.

The Chairman said it would perhaps be better to ask for an increase of one ton in the tare this time. This, he understood, would enable them to make a wagon that would be commercially successful. He did not see why the tare should be restricted in any way. The total load might be limited.

Mr. Warr, M.P., said the subject had been clearly brought before them, and he was sure it would be his wish and that of his colleagues to support any proposal which experience might have shown to be necessary for the purpose of the development of this new means of traffic. If it could be shown, as would appear by the representations that had been made by previous speakers, that the proposal to raise the maximum tare from three to four tons unladen would not lead to any public danger or any inconvenience which would outweigh the advantages of it, they would give the measure their cordial support. When the present measure was first introduced into Parliament the maximum weight of an unladen vehicle was put down at only two tons, but after representations had been made to the Local Government Board, an amendment placing it at four tons was agreed to. He did not remember how the present weight of three tons had been finally decided upon. With regard to the remarks of the Chairman and Mr. West regarding the limit of the total load, that matter had cropped up when the present measure was going through Parliament, and it was found that there were practical difficulties in the way of adopting such a limit, inasmuch as it would be necessary to have weighing machines and inspectors in different parts of the country. These were difficulties that might be only apparent, and might be swept away. He was glad it could be shown that the alteration in the present law on the lines suggested was desirable. But he would suggest that it would be increasingly difficult to

make progress with Bills introduced by private members, and that the Government should be approached.

Mr. M'Arthur, M.P., endorsed all that Mr. Warr had said. He would be glad to assist in any way that would make the use of motor-carriages more generally adapted to heavy traffic. He had always looked upon the present Locomotives (Highways) Act as a sort of tentative step—an experimental measure. He thought, it now having been demonstrated that the Act was useful to an extent, and that further powers were needed for the purpose of adapting these carriages to heavy traffic, the House of Commons would view very favourably such a proposal as that suggested, especially if it emanated from the Government. There were two points they would have to be fortified upon; the first was whether the extra ton tare would enable the wagon to carry an amount of traffic necessary to make a motor-vehicle a commercial success.

Professor Hele-Shaw said that was the opinion of engineers present.

Mr. Musker said the increase to four tons would be a decided advantage.

Mr. West suggested there would be no harm in asking for the increase to five tons.

The Chairman said it might be unwise to ask for too much.

Mr. Musker did not think it necessary to have the tare increased beyond four tons.

Professor Hele-Shaw said they wished it to be known that the Association were going solid for four tons, and were confident that that would be an advantage.

Mr. M'Arthur said he might take it then that a vehicle of this weight would be commercially successful. The other point was with regard to the danger to roads, bridges, etc. Parliament would need to be satisfied on that point, but he had no doubt the Association would be able to give satisfactory evidence with regard to this aspect of the case.

A discussion arose as to the desirability of asking for the limit to be placed only on the total load. Mr. Warr pointed out that there were difficulties in the way of adopting such a suggestion.

Professor Hele-Shaw pointed out that at present the maker might build a wagon not to exceed the maximum tare which would carry fifteen tons, and this would be more harmful than if the weight carried was better distributed on a vehicle of greater tare.

In reply to the Chairman, Mr. Warr suggested that the best means of bringing their views before the Government would be to appoint a deputation to wait upon the President of the Local Government Board.

The honorary secretary (Mr. Shrapnell Smith) said that a conference of societies interested in motor-vehicles would be held in London on the 15th inst., at which the question of appointing a deputation would be discussed, and a decision would probably be arrived at to approach the Local Government Board. They had had a private intimation that the President viewed these proposals not unfavourably. He hoped Messrs. Warr and M'Arthur would make it convenient to be present on that occasion. Both Mr. Warr and Mr. M'Arthur promised to attend the meeting.

THE death is announced of Alderman Bell, one of the directors of the Sunderland Motor-Car Co.

MR. W. BECKET HILL has been elected a member of the council of the Liverpool Self-Propelled Traffic Association.

A NEW firm to take up the construction of small petrol motors and also motor-cycles is Messrs. Watson and Dickenson, Falkner Street, Liverpool.

THE directors of the Monopole Cycle Co., Ltd., Coventry, passed a resolution at their last meeting in favour of going in extensively for motor-car manufacturing.

MR. H. LUPTON, surgeon, Stratford-on-Avon, was summoned on Monday for driving a motor-car at Clifford Chambers without a light on October 6th. Defendant, who did not appear, was fined 20s. and 10s. 6d. costs.

THE State Department at Washington is in receipt of a communication from the U.S. Consul at Birmingham, giving favourable testimony to the economy of motor-wagons, as demonstrated by the recent heavy motor-vehicle trials in England.

MESSRS. HEWETSON have sent us an account of an accident to a Benz car which occurred recently at Frankfort, Germany. Although the car was completely overturned, the motor and mechanism was found to be uninjured, and after a short delay was driven home by its owner.

WHITFIELD & HOWE, LIMITED, has been registered, with a capital of £12,000, to acquire the business carried on at Carlisle as Whitfield & Son and William Howe & Sons, and to carry on the business of manufacturers of harness and saddlery, wheelwrights, motor-car, cycle and coach builders, etc.

## FRIGHTENED BY A MOTOR-CAR.

—8—

AT the Henley County-Court last week the case of *Steward v. Day* came on for hearing. This was a claim by Captain Steward, of Orchard Dene, near Henley, for the sum of £47 in respect to damages sustained by him in consequence of his horse being frightened by a motor-car, the property of, and driven by, Mr. Edward Irvine Day, medical practitioner, of Nettlebed, on July 8th. Messrs. Kent and Rowsell, barristers, instructed by Messrs. Mercer, Oldham, and Blaker, Henley, appeared for the plaintiff, and Mr. Staplee Firth, solicitor, for the defendant. Evidence was given on both sides, and the Automobile Club has kindly furnished us with a report of the summing-up of his Honour Sir A. G. Marten, from which we take the following:—

"In this case Mr. John Henry Steward, of Orchard Dene, Bix, near Henley, sues Mr. Edward Irvine Day, of Nettlebed, near Henley. The claim is for £47 for damages caused by the defendant on July 8th, 1899, using on the highway known as the Fair Mile at Henley-on-Thames a light locomotive which was so constructed or used as to be a nuisance, whereby the plaintiff's horse was caused to take fright, causing damage and loss to the plaintiff to the extent of £47. Alternatively for damages caused by the negligence of the defendant in negligently driving the said light locomotive at the time and place aforesaid, whereby the plaintiff's horse was caused to take fright, causing loss and damage to the plaintiff to the extent of £47; and the details are given of the £47. And by the further particulars it is stated: 'The accident took place near Oxford Villas, on the Fair Mile, Henley-on-Thames, between four and five o'clock in the afternoon of July 8th, 1899.'

"The depreciation in value of the horse is due to its no longer being capable of being warranted as quiet, and to its frontal bone having been fractured, and to other damage. As to damage to cart: both shafts broken, dashboard broken to pieces, both wings broken, both wheel springs and axle and cart generally severely strained and damaged. The coachman's name is Thomas Lovegrove, but the plaintiff declines to give the names of the other persons in the cart as they may be his witnesses.

"The plaintiff's case is that Lovegrove, his servant, was driving in a two-wheeled dog-cart from his house to the railway station on the afternoon of July 8th, and that in the trap were a cook seated by the driver, butler sitting behind, and a housemaid also sitting behind. Lovegrove the driver, the cook, and the butler have been called; the housemaid was not called. The cook and butler are servants of Balliol College, Oxford. The crew of Balliol College, Oxford, had hired Captain Steward's house for the Henley Regatta, and the servants were being driven away to the station in the trap, and the horse belonged to Captain Steward. The driver Lovegrove is in his service.

"They say, on the part of the plaintiff, when the mare was about 100 yards from the motor-car she began to prick her ears, and as the motor-car approached she dashed away, and ultimately broke the shafts, threw the people out, and injured herself and the cart, and injured some of the people who were inside, and that the defendant in his motor-car met it, and was going along very fast, and took no notice of it, and that the accident was caused by the motor-car.

"Now the case as put here on the part of the plaintiff is on two grounds. The first is that the motor-car was so conducted, or used, as to be a nuisance. The Act of Parliament allowing what are called 'light locomotives' was passed in the year 1896. Previously, in the year 1861, there was an Act of Parliament which said 'that no form of motor-car should be constructed or used on the roads so as to be a public or private nuisance,' and this Act of 1896 says in Sec. 1 'that the enactments mentioned in the schedule to this Act shall not apply.' In the enactments mentioned in the schedule is the Act of 1861, except among other sections, Sec. 13. Therefore it is quite clear that Sec. 13 is not one of the sections mentioned in the schedule in the Act. But Sec. 1 of the Act of 1896 further says, 'and any other enactment restricting the use of locomotives on highways, and contained in any public, general, or local and personal Act in force at the passing of this Act, shall not apply to any vehicle, etc.'

"It cannot be said that these words exclude the operation of Section 13, but I apprehend that, according to the ordinary law (irrespective of the Acts of Parliament), nobody is allowed to drive or use any vehicle upon the public highway so as to be a public or private nuisance, and the first question to determine is: Was the motor-car being used in such a way as to cause a nuisance? The definition of 'nuisance' is really entirely dependent on questions of fact. It depends on time, circumstances, and a number of other particulars which have to be considered. What amounts to a nuisance at one time may not amount to a nuisance at another time; and what may amount to a nuisance if a certain use of a thing is made at one time may not be a nuisance every time a thing is so used, and you must determine if this motor-car was used as a nuisance.

"You are entitled to consider that an Act of Parliament has authorised the use on roads of light locomotives—that is, motor-cars. No doubt there is great prejudice against motor-cars; on the other hand, the Legislature has legalised the use of motor-cars, and I do not feel sure that after the passing of the Act of 1896 you can look at the question of damage as you would before. Inasmuch as it is known that things such as light locomotives are free to be used on roads, it becomes necessary that the training of horses and animals likely to be frightened by motor-cars should be more complete, so that they may become used to them. Horses can easily be trained so as to be perfectly safe in the presence of motor-cars or traction engines; but it is a question of fact for you to determine, and you must determine it (dealing with the matter in this year 1899), as to what ought to be considered as a nuisance; and you must consider as to whether it would frighten horses of ordinary nerve,



and this must be considered in regard to the education of horses. Of course a totally untrained horse would be frightened at anything, and would be totally unmanageable, while there are other horses which have to be trained to stand fire. Horses have to be trained to traffic in the road, and a horse accustomed to country traffic would be frightened at something which a horse accustomed to London traffic would not notice, because such things are of daily occurrence and are always round them. Horses attached to railway stations stand perfectly still without paying the slightest attention to locomotives, and do not seem to be distracted by them. Therefore, what is a nuisance must be determined according to the circumstances of the case.

"This was a broad high road and proper to be used by motor-cars. It was in the afternoon, and it is impossible for you to say without considering all the facts, that the mere existence of a motor-car on the road, or the mere motion of the motor-car, is a nuisance in itself. Then you must consider whether the circumstances under which it was driven constitute a nuisance; for instance, if driven at a great pace in a narrow road, it might be a nuisance.

"The car, when acquired by Dr. Dav, was a second-hand one, and required frequent repairs and was not efficient, and its existence was a chequered one. On the particular afternoon in question, it was going very slowly, and from the evidence given it certainly was not going more than six or seven miles an hour, and therefore was not driven at a pace which would cause a nuisance on account of the way it was being driven. You must consider this.

"Then as to the noise emitted. It is not stated there was any unusual noise, and there is nothing to show that there is anything grating in the noise, nor any evidence as to any very great noise at all, but that in consequence of the defective state of the machinery the noise was smaller than it otherwise would have been, because the motive-power was defective, and the noise was dependent on the motive-power. The motive-power was weak, and the car was going slowly.

If you come to the conclusion that the motor-car was not a nuisance, or the way in which it was being driven was not a nuisance, you have to consider whether a nuisance was created by its driving. It appears that the motor-car in question is of a common make which is very much in use, and that being so, it is not as if something of an extraordinary kind, or something to which the public were unused or unaccustomed, was brought on the road. According to the evidence, there are thousands in use in the country and many in this district.

"The first question to consider is whether in your opinion the car was being driven in such a way as to occasion a nuisance. If you should be of opinion that it was not, then, whether it was being driven negligently by the defendant. We have heard nothing in the evidence at all to show or upon which you could fully conclude that there was any evidence of negligence on the part of the defendant. The defendant himself was driving, and does know something about motor-cars, and there is nothing to show that he was driving improperly. He seems to have failed to get his sister-in-law to the station in time because the motor-car was bad in its working, and it took him a long time to get back, and it does not appear there was any negligence on his part in what he did.

If you are of opinion that these points are not made out, then your verdict undoubtedly should be for the defendant. Further than this, you have to consider whether it is established to your satisfaction that the accident really did arise from anything connected with the motor-car at all; according to the evidence the mare pricked up her ears about 100 yards away from the motor, and from that time got more and more restive, and almost immediately got out of control of Lovegrove, who never again got her under control, and she broke the shafts and injured herself. Dr. Day says he never saw the accident, in his evidence, and could not account for it. When he was asked how he supposed the accident happened, what he suggested was that before he came up, and while he was 100 yards away, the mare jumped away, got some way actually from the road, and that he was attending only to his motor-car and did not see what occurred. It will be for you to consider whether you are satisfied on the whole, as common-sense men of the world, that the accident really was due to the motor-car; but, in order to find against the defendant, if you are satisfied the accident was occasioned by the motor-car, you must find either that the motor-car was used in such a way as to be a nuisance, or that it was negligently driven.

"If neither of these things occurred, if it was not being driven as a nuisance, or if there was no negligence on the part of the defendant in using it, the accident is one of those things which may occur, but the defendant is not liable for it. With these points before you I leave the matter to your consideration. There is no question as to the damages, and you must consider your verdict for plaintiff or defendant on the facts as I have stated them to you, and if you find for the plaintiff you may find for £47, or any less sum you may think fit."

The jury gave verdict for defendant and stated the motor-car was neither negligent nor a nuisance.

At a meeting of the Institution of Junior Engineers on May 4th, 1900, Mr. Charles H. Rush and Mr. Bertram C. Joy will read a paper on "The Motor-Car Industry, Past and Present."

THE Locomobile Co. of America, of Newtown, Mass., have appointed Mr. E. H. Halsey, of 104 Drayton Gardens, Kensington, W., agent for the Stanley steam cars in the British Isles.

## FURIOUS DRIVING CASES.

At the Lanark Burgh Court last week, Robert Gibson, motor-car driver, 53 Chapel Street, Hamilton, pleaded not guilty to having on Sunday, the 15th ult., on the public road at Steel's Cross, Lanark, driven a motor-carriage in a furious and reckless manner. He was, however, fined £1, with the alternative of ten days' imprisonment.

At the Marylebone Police-Court on Tuesday, Mr. Henry Leitner, 207 Piccadilly, was charged, before Mr. Curtis-Bennett, with furiously driving an electric motor-car at Regent's Park, the rate being nineteen miles an hour. Mr. Leitner had been cautioned a few days before, and he promised not to offend again. Mr. Curtis-Bennett fined him 20s., with 2s. costs.

## A FATAL MOTOR-CAR ACCIDENT.

AN exceedingly distressing accident, which unfortunately resulted fatally, occurred at Kirkhill, Nigg, on Thursday evening, the 2nd inst., whereby Frederick James Lyall, mechanic and motor-car driver, employed by the Caledonian Motor-Car and Cycle Company, Aberdeen, was killed. About three months ago Mr. Fletcher Moss, Fetteresso Castle, hired one of the motor-cars belonging to the Caledonian Company, and Lyall was sent as driver in charge of the car. There was absolutely no mishap of any kind during the period the car was at Fetteresso, and the time of the hire having expired, Lyall was instructed to return to Aberdeen. In the course of the afternoon he left Fetteresso in charge of the carriage, and reached Kirkhill shortly after seven o'clock. There was nobody in the car but the driver, and the actual facts of the accident are shrouded in mystery. It seems, however, that, whilst passing the smithy at Kirkhill, Mr. Gordon Forbes, the blacksmith, observed that the car was going at an unusually fast rate. At the time the road was in pitchy darkness, and rain was falling heavily. Immediately after the car had passed, Mr. Forbes heard a loud crash, and on proceeding to investigate he saw the car lying overturned in the middle of the road with no sign of the driver. Others having heard the collapse of the car ran to the scene, but all were afraid to interfere with the machine, believing that an explosion was imminent. Constable Charles Gauld, whose house stands within a few yards from the spot where the accident occurred, was informed of the circumstances, and at once endeavoured to discover the whereabouts of Lyall. All this time the flames from the motor were enveloping the front portion of the car. As a matter of fact there was no danger from that quarter, but none were acquainted with the mechanical apparatus of the motor, and accordingly held back. The constable, however, very pluckily proceeded to the car and, with the help of two farm servants, managed to raise the front part, and there immediately beneath the seat lay the body of Lyall, crushed and bruised. There was no sign of life, but the body was carried to Constable Gauld's house, and a message despatched to Dr. Ogilvie for assistance. When the doctor arrived he certified deceased had sustained a severe fracture of the skull, and that death had been instantaneous. From the marks of the carriage wheels it appeared that in the darkness Lyall had steered the machine off the road and over the deep gutter to the pavement. With the view of getting it under control he had apparently swerved the vehicle round, clamping the brakes hard on, with the result that the sudden stoppage upset the balance, and the car turned upside down. Lyall, who was only 28 years of age, was a native of Montrose, and had been in the employment of the Caledonian Company for about five months. His skill and experience of motor-cars had gained him rapid promotion, and indeed he was considered one of the cleverest mechanics in the company's service. He leaves a widow and two children.

The accident was referred to on Friday last at the annual meeting of the Caledonian Motor-Car and Cycle Company, when Bailie Bain, the chairman, made a feeling reference to the fatality. They had the utmost sympathy with the widow and children, for whom, while not admitting liability, they would do something. They could not understand, however, why the driver selected a road on which there was a dangerous decline, and why he was so late in getting near Aberdeen. The damage of the coachwork of the car could be repaired for £30 or £35.

THE Swift Cycle Co., Ltd., of Coventry, are introducing a new motor-tricycle to be known as the "Swift." The makers state that the machine has been designed chiefly with a view to ease of repair in case of accident, every part being easily accessible and detachable with a minimum amount of trouble. The whole axle can be taken out of the frame without the slightest interference with the adjustment of any of the bearings, and replaced again simply by removing the caps of the hanger brackets. Another Midland concern to take up the construction of motor-tricycles is Osmonds, Ltd., Birmingham. In the new machine Mr. F. J. Osmond, the designer, has aimed at extreme simplicity in the working parts. We also understand that Mr. Osmond has decided to adopt for the present the Gaillardet motor, illustrated and described in *The Motor-Car Journal* for July 7th last.



# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.



how many reached there by road on the first occasion has never been really known. At all events the impetus to the industry was not so great as had been anticipated, although it may from a company promoter's point of view have answered its purposes. This year the Motor-Car Club, an organization which was created, we believe, for the purpose of carrying out the initial running of motor-cars on the roads of Great Britain, called together motorists from far and near to join in their efforts to show to the world that a substantial progress has been made in automobiles. Over one hundred owners with their cars answered this appeal, and at the appointed hour made a start for Brighton. For the first fourteen miles the route lay through heavy traffic and over greasy tram-lines, but after leaving Croydon the roads in some parts were still found heavy. But with these disadvantages we have to chronicle the fact that more than ninety per cent. of the vehicles (cars and cycles) reached Brighton without mishap or incident. Such a feat is an astonishing one, bearing in mind the comparatively few months since the legislation of the automobile; and those who dare state that the industry has not made progress must be actuated by motive other than respect for truth. The majority of the cars in use on Monday were of British construction, and, as a speaker said at the banquet in the evening, these were among the best on the road.

### The Motor-Car Club Banquet.

MONDAY'S dinner of the Motor-Car Club was a delightful function, everything—including the abnormal amount of smoke resulting from the photographer's enterprise—passing off satisfactorily. Hearty felicitations were offered by the guests to the trio (Messrs. Baily, Smith, and Wridgway) responsible for the success attained, and warm were the greetings extended to the former when he rose to respond to the toast of "The Club." Most of the speeches were commendably brief, and the universal feeling of concern in the Transvaal was indicated when Colonel Gourand referred to the British forces in South Africa. The fact that an American officer responded for the British "United Forces" was an agreeable innovation, and the Colonel won the loudest applause when he declared that the greatest reserve force of Great Britain was the United States. To characterise the speeches would be an invidious task, but those who were absent may be glad to know that Mr. Gretton made a speech of substantial quality well befitting the industry for which he

responded; that Mr. Holroyd Smith left the technique of engineering practice for the improvisation of rhyme, inspired thereto by the presence of the ladies, and, possibly, the speech that had immediately preceded. That was by Mr. Towner, who, in replying to the toast of "The Press" (Mr. C. Cordingley, of *The Motor-Car Journal*, had responded for automobile journalism) waxed eloquent on the influence of the motor-car on matrimonial bliss and its greater family convenience as compared with those machines that only provided accommodation for the heads of families, wholly ignoring the olive branches of humanity. During the evening a graceful ice structure, illuminated by the electric light, was wheeled into the room; it was greeted with applause when it was seen to be surmounted by two or three motor-cars of small size but excellent design—a development in mechanical toys that will probably be in great demand during the coming festive season. Dinner over, a goodly contingent of the guests hurried away to the station, where a special midnight train was waiting to convey them home by the commonplace method of locomotion on a railroad track. And at Victoria enthusiastic automobilists did not despise the most commonplace hansoms, and looked not with disgust upon the "growlers" that earlier travellers had ignored. Such is the force of circumstances!

### An Intelligence Department Wanted.

SOME eminent politicians have confessed that they do not read the papers, but surely "comparatively young officials" of the Brighton Corporation know better. One can only assume that the columns of war news have prevented their glancing at home events; or surely they would have known that a great assemblage of motor-vehicles was about to take place in bracing Brighton. Anyhow, some of the roads were up—a fact which enabled the cars to demonstrate their capacity over rough ground, and will probably be instanced by some of the advocates of March or May as the month of the Automobile Club's trials. Sir John Blaker was rather severe upon the local authorities of his town for their want of foresight, and it will probably not occur again in enlightened and progressive Brighton. But the need for an Intelligence Department is urgent in many other localities.

### Automobiles and Warfare.

At the dinner men's minds were frequently recalled to events proceeding in the Transvaal, the speech of Colonel Gourand dealing with the subject with some fulness, and Sir John Blaker suggested that motor-vehicles would doubtless be widely employed in the future. Sir Somers Vine went further, and expressed something akin to astonishment at their non-employment in South Africa in the present crisis. While enthusiasts may regard the War Office as the reverse of enterprising in this direction, and while we have previously shown how facilities for experimental work at Aldershot have not been given, we are inclined to believe that they are just as well at home just now. The circumstances of their employment in South Africa would be so wholly

different to those that obtain in this country in ordinary times that it is possible many would refuse to stand the test; and such would be disastrous to the Army and a retardation as to their progress for commercial and pleasure purposes. When we have demonstrated their commercial possibility to a much greater extent than now, and when vehicles of proper design have been constructed, it will be early enough to venture automobiles on hazardous expeditions.

#### An Expert's Opinion.

THE subject was again mentioned at the Automobile Club's dinner on Tuesday, and in response to the suggestion of Mr. Roger Wallace, Major Holden, the head of the gun testing department at Woolwich, held out the hope that the automobile would ultimately prove of service in warfare. The War Office, while apparently not experimenting on their own account, is watching the trials and tests taking place in various parts, with a view to their adoption when such seems feasible. But, of course, they will have to be absolutely reliable to secure the patronage of the War Office.

#### The Automobile Club Dinner.

As will be seen from the full report of the third annual dinner of the Automobile Club appearing on another page, a most enjoyable evening was spent by those who were present at the Hotel Metropole in London on Tuesday. Mr. Roger Wallace's capacities as chairman are well-known, and the speech of Mr. Shaw-Lefevre was that of a



BARNTON HOTEL, NEAR EDINBURGH—A WELL-KNOWN SCOTTISH AUTOMOBILE RENDEZVOUS.

man who is sincerely interested in the subject. In a very neat and happy way he showed how Mr. Chaplin had more chance of success with the Light Locomotives Bill than he had when president of the Local Government Board, for a man who was so identified with rural life and so known as a lover of horseflesh as the Lincolnshire squire who presides over that department could not possibly be suspected of having designs against horses. Lord Ampthill combined dignity of delivery with dry humour in most effective style, and the comparison between the House of Lords and automobilism was witty and original—qualities which are rare enough at such functions to be well appreciated when found in combination. Mr. H. W. Lucy responded for the Press in a style that revealed the genial "Toby" of *Punch*, and his picture of the policeman who was out of sight before he and his fellow passengers could alight from the automobile was one of the "hits" of the evening. Evidently the Automobile Club is on a fair way to realise the high aims of its committee, whose zeal for the movement is calculated to bring the most influential people in the land into its ranks.

#### Training the Horses.

A FEATURE of more than passing notice of the run to Brighton on Monday was the advantage taken of the same by not a few owners of horses to give their animals an automobile lesson. "Phänomen," in his account of the run on another page, points out that on nearing Redhill his party met a groom with a high-spirited horse who asked the driver of the car if he would mind slowing down a little to enable him to give a lesson to the horse. Naturally compliance was given to the request, and for nearly half a mile the horse was made to run alongside and at the immediate rear of the automobile. In the intervals of panting for breath the groom stated that he had already given the animal a few lessons, which were beginning to have effect. Judging from the behaviour of the horse in question it would need little, if any, more training to be trusted in company with motor-cars. It was only last week we suggested that horse owners in various parts of the country would find time profitably spent in giving a motor-car lesson to their horses, and it is gratifying to see this suggestion being acted upon. If the example was generally followed—and, seeing that motor-vehicles have a legal right to use the roads, it should be—we shall soon read less of horses bolting on the appearance of an automobile.

#### A New Car.

IN the list of entries for the run to Brighton, the name of Mr. M. Holroyd Smith of Westminster was given in connection with a Smith 4-h.p. car. Mr. Smith put in an appearance on Monday morning at Whitehall, but not so the car. In the course of a few minutes conversation Mr. Smith informed us that he had been unable to complete his new car in time for the run. We understand it comprises several new features, of which we are promised particulars at a later date.

#### The Outlook for the Industry.

THE year 1896 is known as the cycle boom. We rather fancy that the year 1900 will be known as the year in which motor-cars first appeared on the roads in numbers. The manufacturers already in existence, and they are many, have now their factories in thorough working order, and they are capable of turning out a large number of cars per week. Many new firms are laying down plant, and are making patterns with a view of putting cars on the market. The securing of an agency for one of these new firms is an object of competition amongst people who desire to enter the movement, and in more than one instance the whole output of motor-cars have been bid for. As to the future of the motor industry there is no uncertainty, and all who are concerned in its development are not only satisfied with what has been done in the past but are convinced of the greater prosperity of the industry in the future.

#### The Proposed Scottish Automobile Club.

OUR correspondent, "Brown Heather," writes:—"I would remind all Scottish chauffeurs of the meeting to be held in the Royal Hotel, Edinburgh, on Friday, December 1st, in connection with the proposed Scottish branch of the Automobile Club of Great Britain. Whether its headquarters, if it is decided to form a club, will be in Glasgow or Edinburgh remains to be seen, but I rather fancy the capital town, where motors have undoubtedly 'caught on,' more than in the 'second city,' will have that honour. Glasgow is certainly working away experimenting, and has been for some years, in motor-car matters, but there is more external evidence of the horseless carriage in Edinburgh, which is now almost as familiar an object as the tramway car. To a Glasgow gentleman, however (Mr. Smith, of Messrs. Mitchell & Smith, C.A.), belongs the credit of having

brought the matter to its present stage, and whether the branch club is formed in Glasgow or Edinburgh, Mr. Smith deserves the thanks of all who will benefit from its inception."

### The Scotch Demonstration Postponed.

ON account of the very unsettled state of the weather which would really make or mar the pleasures of a motor-car demonstration such as was proposed in Scotland in celebration of the advent of the motor-car on British roads, it was decided to postpone the same to a future date, and from what we hear the demonstration when it does come off will have added interest in the form of a few cars which have not yet seen the light.

### A Yorkshire Company.

THE Yorkshire Motor-Car Company, Limited, of Bradford, and Messrs. Brown & Buckton, motor and cycle engineers, of Halifax and Hipperholme, are uniting their concerns in the Yorkshire Motor-Car Manufacturing Company, Limited, with a share capital of £50,000, subscriptions for £25,000 of which are now being invited. The first-named company has attained prominence in connection with the Jackson doctor's car, noticed in our issue of June 16th last, and which was shown at the Automobile Club's Exhibition this year. The other firm in the amalgamation makes a speciality of light oil motors, and has been established a decade. The formation of a company has been deemed advisable to meet the great demand on both concerns, and larger premises will be taken at Bradford, where the manufacture of complete cars for passenger traffic and for goods haulage will be undertaken. Messrs. Brown and Buckton will become directors of the Yorkshire Motor-Car Manufacturing Company, Limited, and Mr. J. E. Tuke, the managing director of the Yorkshire Motor-Car Company, Limited, will occupy a similar position in the reconstructed business. These, with Messrs. A. H. Hutton, T. Craig, J. Mollett, and L. A. Skelton, complete the directorate.

### A Comparison of Accidents.

*Le Velo* continues its excellent work of issuing a monthly table showing the total number of automobile accidents in France as compared with those resulting from the use of the noble horse, and these comparisons of figures never fail to emphasise the increase of safety which is secured by employing the automobile. The number of motor-cars in daily use throughout France is increasing by leaps and bounds, while the record of accidents shows rather a tendency to diminution. Many of these mishaps, too, result from the eccentricities of the novice, who, in the exuberance of his spirits at having a real live motor-car of his own, endeavours to drive at a speed of twenty miles an hour before he has mastered the art of steering at eight. If only a number of driving schools were instituted throughout the country, where all would-be chauffeurs could secure a thorough course of instruction at a moderate fee, the few misadventures which at present occur from time to time would practically disappear and a clean sheet might also be shown side by side with the appalling list of horse accidents. During the month of October only 23 accidents have been caused by automobiles, and not a single fatality can be charged to the new means of locomotion. The accidents recorded have resulted in 23 persons sustaining injuries, but in two instances only were the victims at all seriously hurt. During the same period the "hay motor" has given rise to no less than 906 accidents! As the result of these accidents, 92 persons have been killed and 814 wounded, a truly appalling chronicle, and yet the automobile is an all-destroying machine in the eyes of a certain section of the public and the press! What do they want?

### Motor-Cars at Aberdare.

THE much-discussed question of granting licences to the local motor-car company was again the subject of argument at the Aberdare District Council meeting on Friday last week. Strong opposition was offered by the break owners, and, as a result of public meetings in various wards, the application had been twice adjourned. It was eventually decided by an almost unanimous vote to grant the required permission.

### The Werner Motor-Bicycle.

ALTHOUGH the Werner motor-bicycle is not by any means new to automobilists, it has lately undergone certain modifications and improvements, and an effort is again being made to popularise the machine in this country. The "motocyclette," as it is called in France, is made by Messrs. Werner Frères & Co., of Paris, and at the depot of [the



Motor Manufacturing Co., Ltd., the sole selling agents in this country, we were shown the other day an example of the latest type. In the earlier machines the motor was of only  $\frac{3}{4}$  h.p., and had lamp ignition; the new type has an engine of 1 h.p. and electrical ignition. The motor is attached to the head of the machine, which, for purposes of strength and increased freedom from breakage, is provided with duplex front forks. The power of the engine is transmitted to the front wheel by means of a small belt working on grooved pulleys. The petrol tank and carburettor, which is attached to the top tube of the frame, has a capacity of about two litres, or sufficient for a run of seventy-five miles, while the battery capacity will, we are informed, suffice for a run of 1,200 miles. The pedals, which work in conjunction with a "free-wheel" clutch, are only used at starting or in mounting very steep hills, the motor being claimed to be sufficiently powerful to drive the machine unaided up ordinary hills, and to give a speed of from twenty-five to thirty-five kilometres per hour on ordinary roads. The motor, which weighs about 22 lb., has the valves and explosion chamber arranged in such a way that the latter can be quickly detached for cleaning or other purposes. A powerful band-brake acting on the rear-wheel hub, and operated from the handle-bar in the usual way, is provided. In case of accident to the motor, or of running short of motor-car spirit, the machine can readily be pedalled home, all connection between the motor and the machine

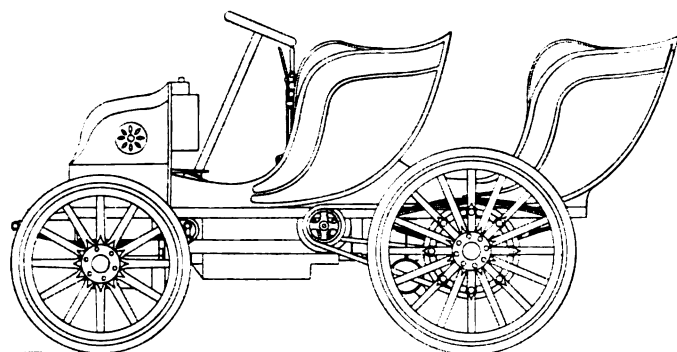
being broken by simply removing the belt. The machine was shown to us by Mr. Leonard, who has ridden a "Werner" for over 5,000 miles, and who successfully did the journey to Brighton on Monday last; and, asked as to side slip, he stated that he had used the motor-bicycle in all weathers, and found no more difficulty on this account than with an ordinary chain-driven bicycle. The machine weighs complete about 65 lb.; it is being made in two sizes—to suit average-sized and tall riders.

#### The Automobile Club Badge.

THE committee of the Automobile Club has just adopted a badge for its members. The badge is formed of a ring of blue enamel with the name of the Club in gold letters. In the centre there is a small perforated representation of Hancock's "Infant," which was constructed about 1830. The connection of this country with the early days of automobilism is thus indicated in the badge of the British Club. The badge may be obtained in the form of a brooch, a pendant, or with a button at the back to enable it to be worn in a button-hole. It is being made in gold, silver-gilt and enamel, and also in bronze. Certain regulations regarding the use of the badge have been decided upon, and in accepting badges members will be required to sign an undertaking to abide by these regulations.

#### A Reminiscence of the Richmond Show.

A REMINISCENCE of the Automobile Show at Richmond in June last comes to hand this week in the shape of the report of the judges. The report itself extends to about eight pages, and concludes with the remarks that "the judges are of opinion that the line separating some vehicles from others in merit may not be so broad as is suggested by



OUTLINE VIEW OF THE MOTOR VEHICLE CO.'S NEW "NAPIER" CAR.

the difference between gold and silver medals, and that at another Exhibition it might be well to have gold medals of first and second class." Part II. is devoted to the awards, while Part III. gives the results of the hill climbing and distance trials organized in connection with the Exhibition. There were, of course, dealt with in these columns at the time, but the report just published will be useful as a work of reference, full particulars being given of the vehicles which took part in the trials.

#### The Automobile in Fiction.

THERE have been many fictions about the automobile, but the automobile has not yet figured in fiction to any extent. Doubtless it will some day. In fact, we hear of a novel now in preparation in which a motor-car is to be the central point of interest, while, it maybe, some of the lady novelists who delight in motoring may make incidental mention of a motor-tricycle or heavy vehicle in their shorter stories. An attempt has been made in this month's *Macmillan's Magazine*, in which the tale of an "Automotor-Omnibus" extends over ten pages. It is a long story (seeing

how few are the incidents related), in which a lame duck is foully murdered and a baker's horse frightened into the ditch. We are treated to a few comments of the familiar character from rustic observers, and finally told that the automotor-omnibus is to be fitted up as a poultry house and utilised about the estate. We are afraid we cannot say the story is a success; still we would not discourage those who utilise the motor-car for purposes of "copy." Since the above was written the Christmas number of the *Harmsworth Magazine* has made its appearance, and a rapid glance over its pages shows it to contain an illustrated story entitled "Man v. Petroleum: a Terrific Race on a French Highway." We have not yet had time to read the story, which, judging from the illustrations, is an account of a race between a motor-car and a bicycle, the final illustration shewing the the automobile in an overturned state of collapse.

#### A "Toward" Heavy Steam Wagon.

WE learn that Messrs. T. Toward and Co., of St. Lawrence Ironworks, Newcastle-on-Tyne, have just completed a heavy steam wagon intended for carting ore from a mine in Yorkshire. It is mounted on a strong steel frame with horn plates (locomotive style). This, in turn, is, in the case of the hind end, suspended by spiral springs on axle boxes and a steel shaft, on which the steel road driving wheels are mounted; the fore end is supported on a fore carriage, with laminated springs, and turn plate, on a steel shaft, and steel front wheels with special auxiliary iron tires, the steering being worked by a hand wheel, worm wheel and chains on the traction engine principle. There is a cab or shelter over the driver, and the propelling machinery consists of a pair of compound reversing horizontal engines capable of developing 25 i.h.p. placed directly below the underframe and geared with two speeds (eight and four miles per hour) and differential gear to an intermediate shaft, which in its turn is geared direct with pinions on to an internal spur-wheel on each driving wheel and entirely cased in. This dispenses with the usual chains and sprocket wheels. Steam is supplied at 200 lb. per square inch by one of the firm's high pressure watertube boilers, placed right in front of the driver, as are the manipulating levers and steering gear. The exhaust steam passes through a filter tank, and then exhausts into the chimney; there is no visible steam while running. The wagon, having been loaded with three and a half tons of material, was subjected to a trial a few days ago when steep banks were surmounted with the greatest ease, and the mechanical tipping gear was also tested with satisfactory results. The wagon left Newcastle early on Saturday morning last for Barnard Castle.

#### Steam Motor-Vehicles.

AMERICAN motor-car builders appear to have so far made most progress in the construction of light steam vehicles. These are now being turned out on a commercial scale, and are beginning to make their appearance on the roads all over the United States. The onward march of the steam car is, however, likely to meet with a temporary check in at least one part of that large country, for the commissioners of the District of Columbia have lately decided that a steam engineer's licence is necessary for operating on the streets of Washington automobiles run by steam generated from petroleum spirit or other fuel. The purchaser of a steam-car recently inquired of the commissioners whether a permit would be required before the machine could be placed on the streets. The question was referred to the board which examines stationary engineers and also to the superintendent of streets. Although an examination of the vehicle showed that it was easily operated and did not require a trained engineer to handle it, the recommendations were to the effect that a permit should be secured for its operation, and that the operator should possess a licence as a stationary engineer.

## The Run of the Motor-Car Club.



TUESDAY, the 14th inst., was the fourth anniversary of the day when legislative interference with automobilists in this country was removed and the man with the red flag relegated into the obscurity of tradition. To celebrate the event in appropriate fashion, and to impress the great British public with the fact that motor-cars have come to stay—

or, rather, have, to employ an Irishism, come to go—the Motor-Car Club organized on the previous Monday, the 13th inst., an effective demonstration, and arranged a run to Brighton. The idea of such an annual outing is decidedly commendable—it familiarises the public with motor-vehicles of every description, it educates the horses in the localities through which the cavalcade of motorists pass, and it puts to an actual test the qualities that are claimed for particular vehicles. As a trial of capacity the old coaching road to the seaside metropolis can hardly be excelled, providing a succession of varying gradients, and, by turning a little from the path, those who enjoy landscape by switchback can easily test their cars under most rapidly alternating conditions. Therefore from every point of view the promoters of this perennial parade are to be congratulated on their initiation of a movement which is expanding and extending year by year.

Hitherto the weather has not favoured the Motor-Car Club, but on the present occasion Mr. Baily had not overlooked that point of some importance. As Mr. Gretton observed at the dinner in the evening, the cars are requiring less water, and their passengers certainly had less than has been customary. In place of the boisterous windy storms that threatened the comfort of all and the health of many in 1896, "Motor-Car Day" of 1899 gave us a sample of the English climate in a very agreeable form. Those who had provided themselves with fur garments of strange and Robinson Crusoe-like appearance found them more serviceable as rugs than as wraps, and even the impervious qualities of leather overalls were unnecessary. A bright, cheerful morning was followed by increasing warmth until the sun shone out o'er field and furrow and over horse and motor-car alike. If magistrates have a partiality for equines against automobiles there is the pleasant reflection for those who ride either—and men may do both on separate occasions—that Nature smiles or storms at each alike. Where each has its use Providence has no favourites.

### THE ENSEMBLE.

Official details had been posted to all the owners of motor-cars, carriages, wagonettes, tricycles, quadricycles, and other vehicles who had notified their intention to participate in the run. Punctually at 10 a.m. the *ensemble* was to commence, and an hour later the disappearance of the photographer on the terrace of the National Liberal Club under his black velvet cloth and the sound of the bugle were to signal the advance. All seemed to recognise that "the eyes of the world" were upon them, and punctuality was the general rule, so that within a few minutes after 10 a.m. the whole of the space along one side of Whitehall Place was lined with motor-vehicles. The police had less difficulty in directing drivers to their places than had it been the meet of a coaching club, or if the carriages had been taking guests to the Lord Mayor's banquet. There was no rearing at the recognition of a brother steved in shafts, nor did any car prove fractious or ungovernable. The manners of the machines would have done credit to a young ladies' seminary—so quiet, so demure did they appear standing by the kerb without any of the signs of impatience and

irritation which produced such exaggerated reports of bad temper on the first occasion of these runs. Near the entrance to the Hotel Metropole a portion of the roadway was "up for repairs," a gentle reminder of the obstructive policy which long prevailed in high quarters. Long years ago when mechanical traction was introduced on the turnpike roads in Scotland gangs of coaching men were known to have destroyed by night the path of the steam vehicles that lumbered along. But here was evidence of work by day that might well have been delayed or quickened to have secured a proper surface on such an important occasion. Complaint is probably useless, and it was, of course, nothing more than a curious coincidence that both at the Alpha and Omega of their pilgrimage the votaries of the motor-car should have seen bits of roadway well worth avoiding.

Shortly before ten o'clock a.m. the cars began to arrive, No. 66 being the pioneer, closely followed by Mr. A. F. Mulliner on a Daimler car. Mr. Egerton was the first motor-tricyclist to put in an appearance. For the next hour the scene became increasingly animated, and the crowd swelled into a goodly company, many of the little groups being composed of interested people evidently on the look out for the latest and best types of particular vehicles. It is impossible for us to mention all the many types of cars which lined up at the start of the run. Benz and Daimler cars innumerable were present, while examples of Mors', Panhard's, Marshall's, Canstatt-Daimler's, Princesses, were also to be seen. Of motor-tricycles and quadricycles, the number seemed endless, while the well-known Bollée-voiturette was not conspicuous by its absence. Mr. Billings, of the Endurance Motor Company, Coventry, did not bring one of the "Endurance" cars, but one of Belgian construction known as the Déchamps. This vehicle was new to many of the spectators, but as it was illustrated and described in our issue of August 25th last it is not necessary for us to refer to it at length. The huge twenty-seated charr-a-banc of the British Motor-Coupé Co. attracted considerable attention, as also did the new electrical vehicle driven by Mr. Leitner, of the Electrical Undertakings, Ltd. This car, which had a peculiar torpedo-shaped front, did not—at least, so far as we could learn—take part in the run to Brighton. The Patents Trading Syndicate, Ltd., were present at the start with a new two-seated voiturette constructed under the Heinle-Wegelin patents. The motor is a two-cylinder one of  $3\frac{1}{2}$  h.p., partially air and partially water-cooled; it is fixed under the seat and started by means of a lever and a ratchet quadrant from the seat. The ignition is electric, the spark being obtained from an electro-magnet arrangement. Two brakes are available: a band brake on the driving shaft and shoe brakes operating on the rear wheels, which are 32 in. diameter. The car measures over all 6 ft. by 3 ft. 6 in. by 4 ft., and weighs 6 cwt. Three speeds are provided, the maximum speed being thirty miles per hour. We were unable to ascertain if the car started for Brighton, or if it succeeded in making the journey. A Heinle-Wegelin tricycle was, however, we afterwards learned, one of the early arrivals at the Hotel Metropole, Brighton. The Hon. C. S. Rolls turned up on a new Peugeot two-seated voiturette, while Mr. Moffatt Ford came on a somewhat larger car of the same company's construction. An excellent opportunity was afforded the public of gauging the comprehensive nature of the term automobile by the presence of a Werner motor-bicycle and Messrs. Johnson and Phillips' "Lifu" steam wagon, the latter having steam up and carrying a heavy load of electrical plant.

By eleven o'clock quite a hundred cars and motor-cycles had been drawn up in Whitehall Place and overflowed the adjacent thoroughfares. Of the 135 owners who had intimated their intention of taking part 104 actually were present, the absence of the other cars being due to various causes. On the stroke of eleven, Mr. C. Jarrott, accompanied



by Mr. Baily, mounted the pilot car, a Panhard, and the bugle sounded its warning note just after a coach and four had passed with the old fashioned horn tooting away as though it were an expiring institution. The sound was taken up along the line and from many a car the horn blew its peculiar notes until a most discordant chorus of strange sounds was in the air. Then the bugler renewed his efforts, the photographer got ready for work, and away went the pilot along the Embankment. In less than a quarter of an hour Whitehall Place was resuming its normal quietude, the last of the cars had passed the shadow of Big Ben, and the great procession was negotiating the traffic of Westminster Bridge in a way that won the respect of cabbies and 'busmen alike. They no longer jeered, and although a few isolated cases of broad grinning occurred the motor-cars of 1899 were evidently recognised as an integral part of metropolitan street traffic.

## A PLEASANT EXPERIENCE.

By A NOVITIATE.

I AM a novice in automobilism; nay, the veriest tyro. My impressions of motor-cars have been those of the observer from the pavement, and my judgment as to their character has been based on a study of the casualty column of the *Financial News*, which rarely misses the publication of a motor-car accident, and when some eccentric horse grows restless at sight of a mechanically propelled vehicle always denounces the motor-car—as though it was the possessor of the vicious temper. That by way of introduction.

Anxious to obtain more knowledge of the new locomotion—although the idea of steam traffic on common roads preceded the realisation of the railway—and wanting excitement, I sought a seat on one of these vehicles wherefrom to watch the attitude of gee-gees, the astonishment of the public and the behaviour of motor-vehicles in general. Accepting an invitation to occupy the back seat of a dog-cart—No. 66 on the list—I was early in Whitehall Court, and found my vehicle just behind the Pilot. There was an element of safety, I thought, in such a position, for should we break down there were plenty of followers to feel compassion and take us in tow. For I had read many stories of both the petrol and fraternal spirit that makes all motorists kin. We started well and rounded into the embankment with a swerve that reminded me of an Irish jaunting car turning a corner and shooting its passengers into the gutter. But there was this advantage in the present case—that I should have descended in the middle of the road. Fortunately the catastrophe was avoided, and with an easy grace I placed my arm at the back of the seat, very much at my ease. From my rearward position I saw the fine procession of cars turning the Whitehall corner, and coming along into the straight. Interest soon centred in our rivals, for had I not heard of the desperate efforts of motorists to rush ahead of one another, pass over pedestrians, send hansoms into splinters and otherwise carve their way to destruction rather than be left behind? Before we got to Westminster Bridge a fine car of prepossessing appearance—I suppose that term can be applied to such a vehicle—was making the pace and seemed coming down upon us. Rapidly the distance was lessened and then gently swerving it passed alongside and its occupants—Messrs. Edge and Napier, the latter the constructor of its motor—smiled upon us, but without any unnecessary exultation. Our driver was quite composed, and we passed Big Ben when the great finger was pointing to eight minutes past the hour of eleven. On the bridge Mr. W. H. M. Burgess got ahead in a De Dion quadricycle, and a moment later Mr. C. G. Wridgway went to the front. Meanwhile we dodged vans, drays, cabs and barrows with equal success, making a good pace when we got clear of the intricacies of the traffic. At Lambeth Baths we saw but few of our followers; already the procession had lengthened, with great gaps in between the cars, and the next to hail us

was Mr. Hodges, of the London Motor-Van and Wagon Company, who had Mr. W. C. Bersey as a passenger. Then as we hurried past "The Horns" at Kennington Mr. H. W. Egerton whizzed by on his motor-tricycle in good style and in sportive humour. A few yards further came evidence of the commercial value of motor power on highways, for a great van bearing the device "Colman's Starch" was to be descried making its way towards London with no horses. To those of us "in the know," or rather in the cars, there was no mystery about that, but a couple of little dogs were prowling about evidently in search of the heels of the horses. The absence of the driver's whip emboldened them to continue barking and whining with delight.

Although the roads were greasy and we had one or two slight touches of side slip, things had gone well so far. There was practically no vibration. I had not had to stuff my ears with wadding to minimise groaning from the machinery, and no odorous fumes had reached my olfactory nerves. And we were still going forward; the driver, in reply to my interrogations, having no idea of a break-down—just yet. My early fears of trouble were fading almost as quickly as the railings of the suburban villas withdrew in the distance, and a calm courage replaced my previous stubborn determination to hold on whatever was blown off. We did Brixton Hill in easy style, and at half-past eleven were cheered by the boys of a school opposite Streatham Common, whose teachers had brought them out to acquaint them with a method of travelling which will be regarded as quite commonplace by the time they grow moustaches. And so we went on without incident through Norbury, where a motor-cyclist was making an adjustment by the roadside, to Croydon, where Mr. Van Toll came along and went forward. By the Onward Cycle and Motor Works another motor-cyclist was in difficulty, and it struck me that that was a really proper place at which to overhaul a machine, seeing the adjacent facilities for repairs, if such were necessary. At ten minutes past twelve we crossed the line of the fourteenth milestone from Westminster Bridge—exactly sixty-two minutes from the last time we saw Big Ben. And seeing that we had had to escape from the metropolitan traffic, and to behave in a strictly legal manner passing through Croydon, where police and public were as plentiful as billows at Brighton, such a record should be acknowledged to the credit of the makers of our car—viz., the Motor Manufacturing Co., Ltd.—and to the skill of our driver. At Coulsdon, a couple of Benz cars overtook us with Messrs. C. H. Gilbert and T. W. Bywater aboard, and then at Merstham Hill Mr. F. Eason on his De Dion-Bouton motor-tricycle made a good pace. Shortly after Mr. Gregson came along on a twin Daimler car, carrying five passengers—a spick and span turn-out that would have done credit to the four-in-hand parade. From Gatton Corner we were followed by Messrs. Marriott and Cooper on a Humber quadricycle, which kept in our wake as far as Redhill, which was reached at twenty-five minutes to one—by the church clock. Ten minutes later we were in Reigate, where forty minutes were spent in the consumption of lunch and the inspection of the cars, of which only fleeting glimpses had been possible earlier in the day. The enterprising little town looked quite gay, as if on holiday bent. Tradesmen "hung their banners on the outward wall," and loyal residents brought forward the Union Jack and other flags to brave the motorists "and the breeze." Evidently we were members of no mean company, but our cars were the attraction, and even the handsomest men were ignored in the presence of a dainty little Benz or the stately dignity of a Daimler.

At 1.30 p.m. we set off on the second stage of the journey, and I, the prejudiced participant in the morning's parade, was already a cheerful devotee of the motor-car, for there was a pleasurable excitement as we sped past farmsteads and woodlands, the former alive with interested spectators, the latter picturesque in their autumnal tints and strewing the roads with leaves as thickly as they lie in Vallombrosa. And yet nothing escaped the eye; for there was a breadth of view

from the elevation of that dog-car back seat and an extended vision that was as delightful as it was novel. At Crawley, accompanied by two motor-tricyclists, we passed through an admiring crowd that was as enthusiastic as any concourse of people we met on the way. But we were not to have the lead, for Mr. C. Jarrott, as the pilot, quickly overtook us, followed by Mr. S. F. Edge. The pace of the latter attracted some of the ordinary cyclists who had followed our car, regarding it as a splendid cover from the wind that would otherwise have retarded their progress. Some of them followed the Panhard car, but most of those who did dropped it long before reaching Preston Park. These cyclists were as troublesome as flies on horses: they kept as closely as possible to our vehicle, with the result that when the car was eased up or a lower speed put on only the most careful manipulation saved them from biting the dust. Those who value a tidy appearance and unbroken limbs should certainly keep at a respectful distance from motor-vehicles. The rest of the journey was without incident (if we except the many groups of ladies who had bicycled from neighbouring towns off the line of route to see the cars) and we soon got within

and within twenty-minutes of his arrival twenty-six vehicles of all descriptions were reported, one-fourth of those that started in the morning. Among the motor-carists who were thus ready for the triumphal entry into Brighton were Mr. C. H. C. Rush on a Marshall car, he having deviated slightly from the main road to call upon a friend, Mr. W. Dederich on a Heinle-Wegelin tricycle, Mr. W. H. M. Burgess on a De-Dion quadricycle, Mr. Lea, Mr. F. Eason, Mr. C. H. Gilbert, Mr. E. Whomes on an International Benz, and Mr. G. D. Barnes on a Benz dog-cart. One of Arnold & Son's Benz cars had also accomplished the run and took part in the procession. Great attention was bestowed on the charrs-a-banc or the British Motor Coupé Co., which arrived later, with sixteen passengers, having come along at an average of nine miles an hour. Another car that did well was the Motor Manufacturing Company's "Princess," which had a very satisfactory run from the Metropole in London to the Metropole at Brighton.

A photo having been taken by *The Motor-Car Journal* photographer, we formed into a procession to enter Brighton, which we did at a good pace and without disturbing the



Photo by

EARLY ARRIVALS AT PRESTON PARK.

Curzon, Robey &amp; Co.

scent of the briny. A few miles from the Downs Mr. Edge was again seen—this time studying the tire question, in which he has always taken a keen interest, both on paper and on the road. A delay of about an hour afforded him opportunity of pointing the way to Brighton to many of his friends, as they joyfully sped forward while he continued his demonstration in the art of repairing punctured tires. The splendid scenery during the last ten miles of the journey reminded one of Derbyshire hills and dales. Before reaching Preston Park—which we did at half-past three—Messrs. Monk and Lonsdale's motor-car from Brighton passed on the way to Bolney. Arrived at the destination several motor cyclists and a few motor-carists awaited the coming vehicles, and we learned that the first arrival had been young Mr. Lawson who, on a De Dion tricycle, had got to Preston Park at a quarter past two, long before any officials were present to chronicle times. He had missed the lunch at Reigate and was not to be seen when we drew up at Preston Park—probably securing compensation for his gastronomical sacrifice earlier in the day. Of those who had lunched as well as travelled from London, Messrs. Frank Butler and Wridgway were the pioneers, arriving on their motor tricycles at three o'clock. Mr. C. Jarrott appeared ten minutes later,

equanimity of the police. Along the London Road we went as far as St. Peter's Church, and then by the Grand Parade to the sea front. The scene on the Grand Parade was novel, and yet not without a suspicion of the antique. Instead of the Indian file in which we had gone along the business thoroughfare, the procession widened, and with the motor-tricycles rushing along with vehicles dotted among them the scene was not unlike those imaginative sketches of the early-century caricaturists. On the sea front we passed between two rows of spectators, which gradually thickened as the Hotel Metropole was reached, and there a grand concourse of people welcomed the motorists and dispersed not until many of the stragglers arrived. It was a cheering welcome. I descended the car—no longer with a passive interest in automobiles, but with something of the enthusiasm that seems to be a characteristic of all automobilists, and determined to take other rides on motor-vehicles when opportunities are presented. For I am only an ordinary mortal, and at present financial considerations intervene between my pocket and the practical realisation of my dreams on Monday night—dreams in which I was scouring the country on wheels and buzzing over the waves on a motor of fanciful construction and wonderful simplicity.

## A COMFORTABLE TRIP.



BY "PHÄNOMEN."

ALTHOUGH I had been looking forward to the trip to Brighton with no small amount of pleasure, a pang of disappointment ran through me on arriving at Whitehall Place on Monday morning when I learned that the car on which a seat had been reserved for my accommodation had met with a slight accident on the previous day which would prevent it taking part in the run. My disappointment was, however, but short lived, for Mr. F. Sheppard, of Wandsworth, kindly offered me a seat on his Daimler waggonette. I accepted the offer, and had no reason to regret doing so, as our journey, as will be seen below, was a very enjoyable one, unmarred by any incident so far as regards the vehicle. Including Mr. Sheppard, who was at the helm, and myself, our party was six in number. Exactly at 11.5 a.m. the clutch was put in, and we turned into the Embankment and over Westminster Bridge. Nothing of an exciting character happened until the Brixton Road was reached. Here, just in front of us, a Benz car was running gaily along when, all of a sudden, it came to a stand. Our car being well in hand we pulled safely round, and in passing saw that the off-side front wheel had fallen off. Apparently no serious injury was done as later I saw the car at Reigate. After passing one or two vehicles which had been brought to a halt for one reason or another we were passed by a motor-tricycle of a type I had not seen before, the motor being located at the bottom bracket, between the riders' feet. Some amusement was caused on Brixton Hill by a group of farriers from a neighbouring horse-shoeing establishment, who greeted the motor-cars with anything but approbation. Their disapproval was probably not unnatural; as, nearly as black as Othello, they possibly felt their "occupation gone."

The ascent of Brixton Hill was a trying ordeal to many of the cars, the difficulty being increased by the greasy state of the roads, but our conveyance got to the top safely if slowly, only one nasty "skid" being experienced. Streatham was passed through at 11.40, and Norbury reached after safely negotiating a nasty piece of road in the hands of the road repairers. Here we were passed by Mr. Billings on his new "Déchamps" car. The vehicle, which is of Belgian construction, appeared to be going well, although somewhat noisy. The crowded state of the traffic in the High Street, Croydon, was the cause of the first stop of our car, the Town Hall clock striking twelve as we came to a stand. The stoppage only lasted a minute or so, and we were soon again spinning merrily along. At South Croydon, when passing a brick cart, Mr. Moffatt Ford came along on his Peugeot car, and, endeavouring to pass at somewhat close quarters, made it necessary for our conductor to apply his brake somewhat suddenly. I may here mention that our car was provided with the wire-cable band brakes so popular in France, and which seem to be very effective.

When passing the Onward Motor Works at South Croydon we noticed a Mors car had been pulled up, while a little further along we found the Déchamps car at the roadside. We did not see this car again until after lunch at Reigate, when Mr. Billings remarked to us that the carburettor had been giving him trouble. Near Purley Mr. F. B. Percy passed us on his Bollée voiturette, quite oblivious of the fact that his petrol tank was leaking, and that he was leaving a stream of petrol behind him. We tried to attract his attention, but with no success; but eventually we succeeded in intimidating by signs to a policeman some distance ahead to stop the Bollée. Mr. Percy eventually pulled up, and was no doubt somewhat surprised at the large quantity of motor-car spirit his engine had consumed! After passing several tricycles and a Benz car pulled up on the roadside, a steep hill at Smitham Bottom was negotiated, the first half of the ascent being made on the high gear, afterwards cutting in the low gear. The next to pass us was Mr. Leonard on a

Werner bicycle and the Hon. C. S. Rolls on a Peugeot voiturette. Compared with his 8-h.p. Panhard Mr. Rolls looked "very low down in the world," but nevertheless appeared to be travelling easily and at a good pace.

Soon after passing through Mersham our conductor, Mr. Sheppard, decided to leave the Redhill Road, and struck off to the right for Reigate. On this road we had an unusual but pleasing experience, viz.: that of a groom with a high-spirited horse anxious to give it an automobile lesson. In compliance with a request on the part of the groom our driver changed on to second-speed, and for about half a mile the horse was treated to a run in close company with a motor-car. The incident was much commented upon by the members of our party, the opinion being generally held that if other owners of horses would only follow the example less would be heard of cases of horses taking fright at motor-cars. The road to Reigate proved to be a veritable "switch-back," and although some of the hills were very steep we mounted them all safely, and reached the White Hart Hotel, Reigate, at 1.7 p.m. One of our party had for some time being complaining that his "carburettor" was badly in need of a fresh supply of "petrol," so a rapid adjournment to the luncheon room was made, and the necessary operation of feeding the inner man performed. The scene at Reigate was an animated one, the town being gay with bunting, while the townspeople were apparently devoting more attention to automobiles than to their ordinary business.

Our start from Reigate was a little delayed owing to some time being devoted to an examination of the many cars drawn up in the High Street and in the square. However, at 2.5 the signal "all aboard" was given, and the car moved slowly away. No incident of any exciting kind was experienced, and nothing required posting down in my note-book for a considerable time. Near Crawley we passed in a field what appeared to be a Lanchester car, while a little further along the riders of a motor-quadracycle were seen to be busily engaged in endeavouring to discover the cause of the stoppage. The whole of the inhabitants of Crawley had apparently turned out to see the "motors," even the scholars at one school being lined up at the side of the road. Handcross was next reached, and here Mr. Sheppard decided to make a detour to the left *via* Staplefield, joining the main road some distance before reaching Bolney. In this way the descent of the steep Handcross Hill was avoided. Although the advisability of our procedure was somewhat questioned afterwards, and although the detour lengthened the journey by almost a mile, yet the fact remains that on joining the high road we found ourselves in front of several cars which prior to leaving Handcross were ahead of us.

At Bolney a large crowd witnessed our passage through the High Street, and in a few moments we were running through the village of Hickstead. Here our second and final stoppage occurred; it was due to the brake refusing to release itself, the halt being, however, only of a second's duration. About six miles from Brighton we passed one of the British Motor-Coupé Co.'s vehicles taking in a fresh supply of water, while about a mile further on the owner of a Benz car was noticed to be engaged in the troublesome operation of adjusting his belts. Near Patcham our progress was considerably impeded by a herd of big black bullocks with terribly large horns. Notwithstanding the continual tooting of the motor-horn, it was some minutes before we managed to get by the animals. By this time a great change had taken place in the temperature and we all found the benefit of the wraps, etc., with which we had provided ourselves. At Withdean we noticed a Daimler car in a state of collapse, so far as the rear road wheels were concerned. It was now too dark to see the full extent of the damage, but subsequent enquiries in Brighton elicited the fact that the car belonged to Mr. F. W. Rogers, St. Albans, and that the accident was the result of endeavouring to pass between two vehicles. Although the riders were thrown out, it is satisfactory to learn that none of them sustained any serious injury. At Preston Park we were pulled up by the official timekeeper,

who in his log-book put down 4.50 p.m. against our car. From Preston the journey to the Parade, Brighton, was anything but of an enjoyable character, for what with the "hurrahs!" of the thousands of children lined up on the side of the roads, and the execrable broken-up state of the latter, our conductor—and, I might say, his passengers—had rather an exciting time. However, all's well that ends well, and just as the clock was striking five we pulled up at the Hotel Metropole. Our net running time was exactly 4 h. 57 m., so that the average speed for the whole journey was just 10½ miles per hour. There were, no doubt, many cars whose time worked out better than the one I was on, but for a steady, enjoyable run, free from incident of any serious kind, I can strongly recommend any one to a trip on Mr. Sheppard's waggonette.

## THE FOURTH ANNUAL BANQUET.

In the evening the fourth annual banquet of the Club was held in the Clarence Room of the Hotel Metropole, Brighton, Sir J. Somers Vine presiding, supported by more than two hundred gentlemen and about twenty ladies. In addition to all the leading representatives of the automobile industries of this country were a number of owners of cars and of those whose names are identified with automobilism as a sport or pastime. The general press was well represented, as well as the local authorities of Brighton, while several medical gentlemen were also of the company. In last week's Journal appeared a list of those who were to take part in the run, and practically every one mentioned in that connection was present at the banquet. Hence the omission of a full list of the guests from our columns this week.

From the Mayor of Brighton (Alderman E. J. Stafford) an apology for non-attendance was received, and a telegram from the Leicester Automobile Club, conveying the congratulations of Midland motorists and



Photo by

THE MOTOR-CAR CLUB'S BANQUET.

Curzon, Robey & Co.

## THE ARRIVALS AT BRIGHTON.

"NOVITIATE" and "PHÄNOMEN" have already touched upon the scene as they arrived at Brighton. It remains only to be said that by half-past four more than 50 cars had been received, and that before seven o'clock 95 of the 104 that started had been reported at the Hotel Metropole. Of the nine missing cars it must not be supposed that they all broke down, for a few arriving late were overcome by the modesty of their drivers, who went straight to the stables, not daring the welcome that they imagined was reserved for the last stragglers along the sea front. The run may therefore be regarded as a complete success, both in organization and accomplishment. Only one suggestion would we make on the present occasion, and that is that drivers should retain their numbers on the cars throughout the journey, for as several were missing after Croydon was passed the difficulties of observers who were making notes from various cars were greatly increased. But that is a point for the individual. As a collective run, the motor-car meet of 1899 was a great and distinctive success.

wishing the Motor-Car Club many happy returns of the day, won the first applause of the evening.

### "The Motor-Car Club."

The toast of "The Queen" having been received with musical honours,

Sir J. Somers Vine proposed "The Motor-Car Club." That Club had enabled them to have a very pleasant day, and they were indebted to the Committee for the way in which they were being entertained that evening. Though he did not have the honour to be a member of the Motor-Car Club, but of the Automobile Club, he knew it had most excellent objects, and that its members had the interests of automobilism at heart. It deserved the support of all interested in automobilism, and they should warmly support it and endeavour to recommend it to others. The Club had the distinction of being the first automobile society in the country, and, to a certain extent, all other existing clubs were followers and imitators. But at the same time he knew he was expressing the feeling of the members of its Committee when he said that they desired to co-operate in the greatest harmony with all other institutions of a similar character. In proposing the toast he coupled with it the name of Mr. Baily, the indefatigable hon. secretary, to whose efforts they were very much indebted. (Loud cheers.)

Mr. F. W. Baily responded. He claimed that the reputation of the Motor-Car Club was world-wide. It had carried out the most successful meet and run ever known in connection with the motoring movement in England. (Hear, hear.) No less than 104 motor-vehicles had passed over Westminster Bridge that morning, and of those 95 had reached



Brighton during the afternoon. (Applause.) Referring to the run to Brighton in 1896—the first meet held in England—he said they had then done the best they could, but the percentage was considerably less than that of this year. If they continued to improve at the present rate of progress he believed that next year the arrivals at Brighton would be 100 per cent. One noticeable feature of the latest run had been the great number of private owners who had supported the run and taken part in it. Mr. Baily went on to refer to the efforts of the Club with regard to racing, instancing the successful meeting at the Crystal Palace. Ninety-six races had been held under the racing rules of the Motor-Car Club—(cheers)—and he was not giving too much credit to the organization if he said that practically 100 per cent. of the men who raced on the track were members of the Motor-Car Club. It was hoped to get as members of the Club all practical motorists. Ninety-five per cent. of its present members were actual motorists, and the Club had branches in various parts of England. He was convinced that racing would prove of benefit to the movement, and it was hoped that several of the Club members would be racing in France next year. A motor that would stand the strain of a race was bound to be of service on the road. Three of the members of the Motor-Car Club were having racing cars built, and he hoped they would go to victory in France, and that the members of the Club would win something. Unfortunately they were not allowed to exceed the legal limit of twelve miles an hour on the road. (Laughter and cheers.) But he was afraid they were poor judges of pace, and it was not always advisable to take the speed. In conclusion, he said the organization of the run would have been impossible but for the help of an able executive, an energetic committee and sub-committee and of two gentlemen, whose names he could not help mentioning, Messrs. G. C. Wridgway and G. H. Smith. He returned his hearty thanks for the way in which the toast had been received. (Applause.)

#### "The Motor-Car Industry."

Alderman Sir John Blaker proposed "The Motor-Car Industry." Alluding to Mr. Baily's reference to the legal limit, he said that when the cars entered the town of Brighton that day they travelled at a rate not exceeding the legal limit, and therefore he presumed that the hon. secretary was the legal adviser to the Club. (Laughter.) The motorists must also have thought—and very properly so—that the Brighton police were going to be very lenient. Some of the Corporation workmen had made entrenchments across the London Road—in the interests of the motor-car industry. For if the cars could safely go over the granite it spoke well for their manufacturers. He hoped that the authority with which he was connected would add to the many things already existing an Intelligence Department, for he felt that, seeing a great gathering was to take place, such a work as that should not have been done at that particular time, and he assured those present that it was an oversight on the part of some comparatively young official. It was his privilege three years ago, as mayor of the town, to ride on the first car that officially entered it. The weather was boisterous and the pace was rather faster than he had been used to, and he hoped that a kindly Providence would bring them safely to the hotel, and that he would not have the pleasure of going on that car again. (Laughter.) He was pleased the Club had suggested that those who drove cars should drive them at such a pace as would commend them to the inhabitants of this country. We were an extremely conservative people, and did not take very rapidly to new inventions. Therefore it was necessary to educate the public up to automobilism, and in the interests of those engaged in the industry it was desirable that that advice should be followed. He remembered that at the first banquet of the Club at Brighton one of the speakers, in speaking of "Emancipation Day," said they would soon be able to go to London for eighteenpence. Many Brighton people were waiting for that. (Laughter, and "Hear, hear.") The speaker to whom he referred was now on the ocean. He could, however, conscientiously wish great success to the industry. It had long been crippled by legislation, which gave a great start to Continental countries. But now the restrictions were removed they would not always see upon the cars, as on some other things, "made in Germany" or "made in France." The utility of the cars was immense, and he could not help thinking what a godsend some of them would have been to Colonel Baden-Powell at Mafeking. In the wars of the future the motor-car would play an important part. (Cheers.) Referring to Brighton Sir John said it was one of the most up-to-date towns in the country, and was able to supply, from its own stations, owners of electrical cars with sufficient electricity for two shillings to take eight or ten people to London. It was a point that would largely affect the industry if the towns of the country could supply the electricity so that owners could always be sure of charging their vehicles. He wished the industry every possible success. (Applause.)

Mr. John H. Gretton replied for the motor-car industry, which, he said, was a very important one, and no one could say at the present moment how far its limits would extend. It was not confined to this country, but was spread all over the world. They were indebted very greatly to their French friends for introducing the industry to the notice of the world. France was not the only country that was associated with the motor-car. To Germany also we owed a debt of gratitude. It was well that they should carry their minds over the field of enterprise, and we in Great Britain should be proud to know that we have come to equal rank with German and French firms. The history of economic progress and industry proved that Great Britain could come level with any industry that was started anywhere in the world. Although we were indebted to France and Germany for the initiation of this great industry, we had come at least equal to them. (Cheers.) If they analysed the number of cars that had taken part in the tour and had reached Brighton, they would recognise that Great Britain was equal either to France or Germany. He noticed

that the Mayor of Coventry had recently said\* that he hoped they had found an industry that would revive and carry prosperity to his town. He said it was an infant industry; but if there was any truth in the statement about a new company in America with a very large capital, he (the speaker) asked how could it be an infant industry? It was, on the contrary, well grounded, and would produce a very large increase to the commerce of the country and be of benefit also to the industrial classes. (Hear, hear.) He had noticed, when comparing the cars coming in that day with those that entered Brighton in 1896, that the cars in the earlier year seemed to consume more water than spirit, but now they consumed more spirit than water. If that was any indication, he hoped it indicated progress in the industry. (Laughter and cheers.) All were glad to hear from Sir John Blaker of the welcome Brighton would always prepare for motorists, and nothing could be more satisfactory to those engaged in the motor-car industry than to recognise—sincerely recognise—the effort of any organization to promote their interests. Among those present were many who took pleasure in riding or driving, and they were helping to convince the country that the motor-car was a practical success. They were constantly being told to take care not to upset horses, but he would ask the drivers of horses to take care that they did not upset the motor-car. (Laughter and cheers.) Although he had a great respect for horses, he did not wish the roads to be entirely appropriated by them. They ought not to sit down under the advice that they ought not to interfere with horse-drawn vehicles. They should say to the owners of such carriages, "Let us understand one another and recognise that no one has any more rights than another." In this country we believed in liberty—equal rights, and no interfering with the rights of another. It should be a question of give and take. Those who drove motor-cars should take care and not interfere with the rights of horse-driven carriages, and they should expect and insist that the drivers of horse-driven vehicles should not interfere with motorists. (Applause.)

#### Other Toasts.

The Chairman, referring to the next toast, that of "The United Services," said under the circumstances he was sure they would show even greater warmth than usual in drinking to the health of the defensive forces of the Empire. Reverting to what Sir John Blaker had said about the use of motor-cars in warfare, he expressed surprise that the automobile had not been employed in South Africa, where, excepting certain portions of the country, the roads were well suited. Although, however, they were not being utilised in the present instance, he was convinced they would ultimately play their part. He called on Colonel Gouraud to respond to the toast; and, although that gentleman was an American officer, the innovation was particularly appropriate at the present time.

The toast having been enthusiastically received,

Colonel Gouraud was heartily welcomed when he rose to respond and testify to the good feeling between the people of the United States and those of this country.

Mr. Alderman J. J. Clark proposed "The Press," according full praise to the work of both the general and technical journals of this country. The trades and industries were worthily represented in the press, and although the motor-car industry was not an old industry it was being well served.

Mr. Charles Cordingley (*The Motor-Car Journal*) responded. He said the object of the gathering was to demonstrate the great improvement that had taken place since 1896. Seeing the few vehicles that then reached Brighton and the large number that started and arrived safely on the present occasion, it was clear that an immense improvement had taken place. It was well to bear in mind that the majority of the cars were of British construction, and that many of them came through with but one stop, and that not for water but for lunch. (Hear, hear.) If the Motor-Car Club had been successful in showing the possibility of the motor-car going practically any distance, it had been of service to the industry, and if it had done nothing else than organize the run that day it had justified its existence. The motor-car was undoubtedly the vehicle of the future. Thanking the company for the generous way in which they had received his name, Mr. Cordingley mentioned the fact that although he had only recently been connected with motor-car journalism, he had many years before advocated the movement in another journal (*Industries and Iron*) before motor-cars were run in this country. (Cheers.)

Mr. W. J. Towner (*Brighton Gazette*) also responded, making humorous references to the family character of the motor-car capacity.

"The Ladies" was felicitously proposed by Mr. Holroyd Smith, and the health of the Chairman heartily drunk, Mr. Sheriff Hand proposing the toast. With a brief response from Sir J. Somers Vine, the proceedings terminated with the National Anthem.

ANENT the discussion which is taking place in America as to the most suitable term for motor-car, one correspondent writes: "Why not call it a 'goalone' and then let it alone?"

THE Old Dominion Motor-Car Co., is petitioning for a charter to run a service of motor-vehicles in the city of Richmond, Va.

AN American contemporary remarks that "there are now, as far as can be learned, eighty-one chartered automobile companies in America, with the modest little capital of 430,000,000 dols." (£86,000,000)!

\* *Motor-Car Journal*, November 10th, 1899, p. 564.



## The Automobile Club's Meet.



**B**RIGHT and cheery weather favoured automobilists on Tuesday, and again the sun beamed on the assemblage of motor-cars in the neighbourhood of Whitehall. The distinction of the vehicles from those of the previous day was most noticeable. It appeared as if special arrangements had been made to exhibit as many varieties as possible, there apparently being no two alike. There was a Daimler Parisian (a new car appearing for the

first time), with its sweet French gray colour, handsome body, aluminium frame and pneumatic tires. There were electric cars, Panhards, Peugeots, Daimlers (twin and single motors), Mors, Vallées, Benzs, Gobron-Brillié's, and a goodly assemblage of the business-like cars of the Motor Manufacturing Company.

Worthily placed first was the Daimler Parisian, with Mr. Critchley driving and Mr. Johnson as passenger, and behind were some sixty cars and tricycles in line. Below we give a list of vehicles and drivers. The passengers' names we have been unable to obtain, but we may say that out of more than two hundred who lunched at Sheen House certainly nearly half that number were ladies, whose bright attire and sweet presence gave additional charms to the gathering.

Punctually as the clock struck twelve a start was made, and the procession turned to the left with a view of going through St. James' Park and Constitution Hill into Hyde Park. After leaving Hyde Park, the route was through Hammersmith, over the bridge, and then *via* Lonsdale Road to Sheen House.

The traffic soon divided the procession, but all safely reached the Club House, some thirty or forty vehicles being close up to each other, and the stragglers coming in shortly afterwards.

The run was very much enjoyed, although inconvenience was caused by the abominable state of the wood pavement in the Hammersmith Road. Arrived at Sheen House the cars, to the number of over fifty, were ranged round the lawn, forming a charming scene for a November day. The sun shone pleasantly, and reflected its rays on the highly polished steel parts, showing the perfection of the many coloured panels of the cars. It was one of the brightest scenes ever seen in the automobile world of this country, and never before have we looked upon such a beautiful array of vehicles in the open air. As before stated, they were of all kinds, from the tiny voituresses and the smaller French cars, in comparison with which the mighty charr-a-bancs and twin Daimlers looked like giants. The beauty of the design of many of the bodies showed that not only engineers but carriage builders as well have been studying improvements, with a view to pleasing the eyes of the public, which has been so long accustomed to horse-drawn vehicles.

That the motor-car industry of Great Britain owes much to the Automobile Club no one will deny, and many of the improvements noticed in the vehicles taking part in this year's parade have probably been inspired by this representative Association. If during the next twelve months the progress of the past year is increased in as great a ratio the advent of the perfect vehicle cannot be long delayed. And by securing the patronage of the leaders of Society for our industry the Automobile Club is helping automobilism to prosperity and securing universal favour for the motor-car. Those whose apparent delight is to retard the progress of the inevitable, should have been at Sheen House on Tuesday. They would then have realised that automobiles can combine grace and beauty with utility and reliability.

Below we give a full list of the cars and motor-cycles that attended the meet:—

Mr. and Mrs. Northey and Lady Muriel Paget, Electric Motive Power Co., Ltd.; the Hon. Evelyn Ellis, 8-h.p. Panhard; Mr. Frederick R. Simms, 5½-h.p. Cannstatt Daimler; Club Wagonette, lent and made by Daimler Motor Co., Ltd.; Club Wagonette, lent and made by Motor Manufacturing Co., Ltd.; Club Wagonette, lent and made by Motor Manufacturing Co., Ltd.; Club Wagonette, lent and made by Motor Manufacturing Co., Ltd.; the Hon. John Scott-Montagu, M.P., 12-h.p. Daimler; the Hon. C. S. Rolls, 3½-h.p. Peugeot; Mr. Alfred Bird, 6-h.p. Panhard; Mr. Alfred Harmsworth, J.P., "Columbia" Electric; Mr. Alfred Harmsworth (driven by Mr. Campbell Muir), 8-h.p. Panhard; Mr. C. K. Gregson, 12-h.p. Daimler; Mr. John Gretton, Motor Manufacturing Co.'s "Iveagh" Phæton; Mr. Hugh Weguelin, 8-h.p. Panhard; Mr. Bernard Weguelin, Daimler; the Hon. J. H. Berkeley, Electric; Mr. J. Lyons Sampson, 5-h.p. Benz; Mr. J. S. Critchley, New Daimler; Mr. Montague Grahame-White, small Daimler; Mr. Mark Mayhew, 8-h.p. Mors; Captain G. D. Sampson, J.P., Benz; Mr. J. Ernest Hutton, J.P., 12-h.p. Panhard; Mr. Walter C. Bersey, London Motor-Van and Wagon Co.'s Daimler; Mr. W. M. Hodges, London Motor-Van and Wagon Co.'s Daimler; Mr. S. F. Edge, 8-h.p. Napier; Mr. T. B. Browne, 6-h.p. Panhard; Mr. Chas. Jarrott, 6-h.p. Panhard; Dr. Bruce Porter, 6-h.p. Daimler; Mr. M. H. Buckea, Motor Manufacturing Co.'s Wagonette; Mr. Chas. Cordingley, Motor Manufacturing Co.'s Dog-Cart; Mr. Ernest Owers, 6-h.p. Daimler; the Rev. Arundell Whatton, 8-h.p. Mors; Mr. Hy. Edmunds, 6-h.p. Daimler; Mr. E. Estcourt, 6-h.p. Daimler; Mr. A. W. Armstrong, Peugeot; Mr. Henry F. Joel, Joel's Electric Victoria; Mr. Edgar Soames, 6-h.p. Daimler; Mr. A. F. Mulliner, 6-h.p. Daimler; Mr. Theodore F. S. Tinne, Cannstatt Daimler; Mr. M. Cappellen, International; Mr. W. H. Kitto, Benz; Mr. F. Strickland; Mr. S. F. Beevor, Hewetson's Benz; Mr. W. P. C. Wills, Hewetson's Benz; Mr. R. W. Buttemer, Hewetson's Benz; Dr. Charpentier; Mr. H. Ravenshaw; Mr. Algernon Bentley, Victoria; Mr. William Hurst, Bollée; Mr. H. J. Dowsing; Mr. Francis Leigh Martineau, Voiturette; Dr. Lehweß, Gobron-Brillié; Mr. T. H. Smith, Daimler; Mr. Clift, Electric. The following were riding motor-cycles: Messrs. Frank Butler, Robert Phillips, F. W. H. Hutchinson, Herbert Fuller, R. H. Fuller, L. H. Walter, W. J. Crampton, S. R. Roget, Dr. J. J. Acworth, Lieutenant Windham, and Mr. Cecil Grimshawe.

### THE ANNUAL DINNER.

The annual dinner of the Automobile Club of Great Britain was held in the Whitehall Rooms of the Hotel Metropole, London, on Tuesday, under the presidency of Mr. Roger W. Wallace, Q.C., who was supported by many influential admirers of the automobile, including Lord Ampthill, Lord Suffield, K.C.B., Lord Borthwick, the Right Hon. C. Stuart Wortley, Q.C., M.P., Right Hon. G. Shaw Lefevre, Sir James Pender, M.P., the Hon. John Scott Montagu, M.P., Mr. Charles McArthur, M.P., Major H. C. L. Holden, R.A., F.R.S., Major Ross, Hon. C. S. Rolls, Hon. J. H. Berkeley, Professor Vernon Boys, Colonel Magrath, Dr. Acworth, Dr. Lehweß, Captain the Honourable Cecil Dunscombe, M. Georges Lemaitre, M. de Bary, Messrs. F. R. Simms, E. Shrapnell Smith, W. Worby Beaumont, R. E. B. Crompton, Frank H. Butler, Hiram S. Maxim, T. W. Staplee Firth, R. E. Phillips, C. Harrington Moore, Julius Harvey, R. H. Buttemer, J. E. Hutton, J.P., H. J. Mulliner, Mark Mayhew, Lyons Sampson, Thos. Parker, Lawrence Jones, W. C. Bersey, Charles Cordingley, T. B. Browne, F. W. Lanchester, S. F. Edge, C. Jarrott, Roger Fuller, E. K. Purchase, C. Heyermans, Campbell Muir, H. F. Joel, A. T. Mulliner, M. H. Buckea, H. A. House, Alfred F. Bird, Killingworth Hedges, Bertram Blount, C. Opperman, Sherwin Holt, J. W. Woodall,

Hugh Campbell, Henry W. Lucy, Alfred Jones, J.P. (senior vice-president of Liverpool Branch), H. Edmunds, W. J. Crampton, H. Fuller, E. Owers, H. Mercer, J. R. Nesbit, A. G. New, John Henry Knight, Percy Northey, F. W. Hutchinson, C. Grahame-White, Buckingham, George Hopkins, Arthur Darbishire, Herbert Hankey, J.P., W. Leonard, Beckett Hill, S. B. Cotterell, A. Musker, T. C. Palmer, M. Cappellen, Becker Carrten, Rudolph de Cordova, L. H. Walter, F. L. Martineau, Edward Kennard, W. Hardy, Robert Bird, J. Holder, Claude Crompton, Dangerfield, S. Roget, C. V. Pugh, J. S. Taylor, Dugald Clerk, T. J. Barratt, Herbert Capel, L. O. Engleton, J. Grahame-White, Cecil Grimshaw, Edward Pope, Ristori, Pollen, Lawrence, Frank Davies, Wyllie, W. H. Kitto, E. A. Brayley-Hodgetts, A. H. Stanley, Alfred Ledger, Harold Heatly, Mears, Todd, Thrupp, Hipkins, F. P. S. Harris, Stanley Spooner, Claude Johnson (secretary), and several others, the company numbering about one hundred and seventy in all.

The toast of "The Queen and the Royal Family" having been duly honoured, the Chairman gave

#### "The Navy, Army, and Reserve Forces."

Referring to Major H. C. L. Holden, R.A., F.R.S., as the head of the gun department at Woolwich, Mr. Wallace dwelt upon his knowledge of electricity and mechanics and the help he had rendered to the Automobile Club in many ways. The Major had shown his interest in the movement, and they hoped he would at some time recommend to the War Office that automobiles should be used by Her Majesty's forces.

Major Holden responded, and said that during the whole of the time he had been responsible for testing guns not a single one had failed when on service in the field. The question of automobilism concerned the Royal Engineers and the Inspector-General of Fortifications. As most of those present were aware interest was taken by the authorities in the subject, and official representatives of the War Office were present at the Liverpool trials. No doubt as soon as the automobile became a little better known and a little more reliable—although it was nearly absolutely reliable now—the question would be taken up, and automobiles would be used for the purposes of war. To some extent a ship was an automobile, and if they urged that a ship would not go on land he would reply that their automobiles would not go on water. (Hear, hear, and laughter.) It took many years to introduce the bicycle into the army, and it would take some time to introduce the automobile. In the torpedo they had an engine that indicated 55 h.p., and weighed less than 1 lb. for every effective horse power. He thought automobilists would be glad to possess such an engine, and in conclusion wished success to the development of the movement. (Cheers.)

#### "The Houses of Parliament."

Mr. Alfred L. Jones, J.P., senior vice-president of the Liverpool branch, proposed "The House of Lords and the House of Commons." He said the existence of their society depended upon the power they obtained in Parliament. They had to thank Parliament for their existence. But he reminded those present that they had been in existence three years, and unless they got more power they might become troublesome. The question that concerned him most was that of motor-wagons. With the three ton tare they could not produce a commercial wagon, and they wanted the tare extended to four tons. It was to be hoped that this would be secured, and British industry thus given a chance. (Hear, hear.)

The toast having been drunk,

Lord Ampthill thanked the Club for the honour paid him in asking him to respond for the House of Lords. He had rejected the idea that it was done in order to smooth the way for further demands for legislation, although the remarks from the proposer of the toast had perhaps raised a doubt. Looking at the connection between the House of Lords and the automobile he had come to the conclusion that the former presented an ideal which every maker and constructor of a motor-car had in view. He took it, the qualities which they aimed at were speed, noiselessness, and absence of gas or smell. Nobody would deny that if there was a political machine which did its work with a maximum of speed and minimum of gas and noise it was the House of Lords. (Laughter and cheers.) He had always understood that the House of Lords was ornamental. That, too, was an attribute the maker of motor-cars kept in view. In conclusion, he declared there was no doubt the motor-car had before it a future of universal popularity and utility. (Cheers.)

The Right Hon. Charles Stuart-Wortley, Q.C., M.P., referred to the adventure of one of the Members of the House of Commons who had got into Palace Yard in a motor-car. His passage was not undisputed, and for a time they felt the constitution was in danger. But, happily, it was not long before the matter was settled. Passing to current topics he said the House of Commons had recently voted special supplies, and they hoped to receive value. (Cheers.)

#### "Success to Automobilism."

The Right Hon. George Shaw-Lefevre, M.P., proposed "Success to Automobilism." He felt he was associated with the toast because of the fact that he was the first, as a member of the late Government, to recognise the absolute necessity for freeing this great industry from the foolish restrictions under which it suffered, and to introduce a bill for that purpose. (Hear, hear.) But there occurred one of those cataclysms in political life which destroyed the Government, destroyed his bill, and lost him his seat. But his successor at the Local Government Board, Mr. Chaplin, took up his bill, improved upon it and carried it to a successful issue. Looking back upon the past he felt the change of *personnel* was not altogether disadvantageous to the interests of the cause they had at heart. He was not by no means certain that he could have carried his bill through without opposition, and certainly he was not sure that his

measure would have passed the august House of Lords. But when a Minister like Mr. Chaplin, whose interest and knowledge of horseflesh was well known, and a statesman who was so much in the confidence of a rural constituency, adopted the measure it was absolutely certain to face all dangers successfully. He was by no means certain that so good a bill could be passed by Mr. Chaplin at the present moment. There had been something of a reaction against automobilism, and in the rural districts people were appreciating what had been passed, and there was actually an agitation afoot against the extension of automobilism. The Local Government Board was being bombarded with petitions from district councils and other local authorities praying for further restrictions against the "dangerous machines" which were so frequently seen in the country. He hoped that Mr. Chaplin would stand out against any restrictions of that kind. (Hear, hear.) At all events he (the speaker) hoped that Mr. Chaplin would consult the Automobile Club before agreeing to any legislation, for that organization would be able to give the Local Government Board most valuable advice. He was sure there would be much support for Mr. Chaplin in the House of Commons in his efforts to resist any reactionary efforts in that direction. Many reasons were being urged against automobilism. In the first place it must be recognised that in some parts of the country there was an intense conservative feeling similar to that which existed against railways and, later, against bicycles. Others objected to motor-cars because they did not like the smell and others because they did not like the pace, but all such unreasoning feelings would melt away in face of the advance of the industry, just as was the case with railways and bicycles. Accidents had occurred through horses being unaccustomed to motor-cars. That was a failing which also would pass away as the horses were educated on the subject. He recently read that a learned judge had laid it down that inasmuch as Parliament had recognised that the motor-car might frequent the highways, horses should be educated to face such vehicles. When uneducated horses met with motor-cars they, and not the motor-cars, should be held responsible for the consequences. It was said that some unwise people had been known to drive their cars at improper speeds. If that was so the Club would have its eyes upon them and assist the police to secure a conviction. But a few instances of that kind should not be allowed to damn the whole industry. Those who knew anything about motor-cars knew that it was possible to drive them rapidly and keep them well under control where there was no important traffic, but relaxation of speed became necessary in the town districts. A learned judge had been spending the vacation in a motor-car tour throughout England, and the average of his speed was between sixteen and twenty miles. (Oh, and laughter.) He paid him (the speaker) a visit in the course of his tour, and said he had travelled at that rate. Now, that learned judge knew what the law was. The law did not allow him to go at a greater rate than twelve miles per hour, and it was therefore to be supposed that the law only applied when passing in presence of other people than yourself, and that on a road which was not frequented by anybody you might go at any pace you like. Great improvement had been made in automobiles during the last three years, and although that had been considerable it was very much behind what had been done in France. In France the number of motor-cars in use at the present time was enormous, and was increasing at a rate beyond anything in this country. The estimate of the *Engineer*, which placed the number here at 200, was an under-estimate. (Hear, hear.) The number, he thought, must be nearer a thousand. One firm alone had made 300 motor-cars and had under construction no less than seventy, and it was an undoubted fact that the demand for motor-cars was such that the trade could not supply them. It was impossible to get a motor-car completed in anything short of six or seven months. Motor-cars were largely imported from France. The French were ahead of us, not only in the number of motor-cars they turned out, but also in the designs. One of the principal manufacturers in Great Britain was now undertaking to supply motor-cars according to the latest French design. He confidently believed they were on the eve of a very great change in this country. The introduction and extension of the motor-car industry would effect a revolution throughout the rural districts bringing them into closer association with dwellers in the towns. While they had every reason to be satisfied with the progress that had been made, they might expect greater progress in the future. He proposed with the greatest pleasure, "Success to Automobilism." (Applause.)

The toast having been given,

Mr. Roger Wallace responded. He said every member of the Automobile Club was indebted to Mr. Shaw-Lefevre for his excellent speech. He was certainly the right man to be in that position on the toast list, because he was also the first to introduce into Parliament the Light Locomotives on Highways Bill. It was notorious in this country that we were slow to adopt new improvements. Legislation, too, had been a means of keeping automobilists behind. In France they had no restrictions, no red flag and no certain speed regulation, but he (the speaker) ventured to think that the same thing would happen in this country as regards the automobile as had happened with electric lighting. Legislation had restricted that industry as well, but now we were very much ahead of other countries in that respect. He hoped no further restriction would be imposed upon automobilists, and it might not be wise for the Club to want any further facilities. It seemed that they had sufficient facilities, that they could go fast enough in spite of laws—provided they were not found out. At any rate, the learned judge already referred to seemed to think so. (Laughter and cheers.) In France automobilism was very much ahead of England, and we must feel that if we made a comparison of the amount of work comprised in the French automobile industry. One firm in France had orders for £600,000 worth

of automobiles. He referred to the firm of Panhard. More than a million pounds sterling per annum was paid in wages alone in French automobile factories. These figures with regard to an industry only just commenced in France must make us feel how far we were behind. Although we had not much in this country, some of the members of the Automobile Club had been able to make a good show in France. Mr. John Scott-Montagu would have won a race (Paris and Ostend race) but he started a little late over some trivial matter. Even then he came in third. That was upon an English-built car. Mr. Rolls came in second in the race, driving, he was sorry to say, a Panhard car. But he occupied a much more distinguished place in other races, and in the Biarritz to Paris contest he came in first in his section. They had the material in this country to win races. There were men who would drive the cars if the manufacturers would build them cars to drive. In France they were allowed to have races, but because of the regulations in this country it was impossible to have similar contests, and so the Automobile Club was organizing, in conjunction with the French Automobile Club, races in France where Englishmen could compete. Unless there was a means of thoroughly testing cars kept going at a high speed they would be unable to tell what they were capable of doing, and it was only in that way that they could arrive at excellence. (Hear, hear.) Racing had improved the breed of horses; but with regard to automobilism they should see that in going through towns and other places where accidents might happen they kept within the limits of the law. The Automobile Club hoped to exercise a judicious control over its members, and also to give assistance to horsemen wanting to educate their horses to pass motor-cars. Races were very interesting, and he recommended the members of the Club to go abroad and see them. Though they could not go in for racing in this country, they could go in for trials, which would give them knowledge of what the motors could do. The Club was organising a 1,000-mile trial, and the cars competing would be exhibited in different towns. Either before or after the trials there would be an exhibition in London. The newspapers were assisting in connection with these trials. The *Daily Mail* would give £100 as a first prize and £50 as a second in the voiturette class, and £10 to every car which successfully accomplished the journey. The *Sheffield Telegraph*, the *Liverpool Daily Post*, and the other great papers of the provinces were also lending help. Reverting to other Club matters Mr. Wallace read a congratulatory telegram from the Swiss Automobile Club, concluding with "Hip, hip, hurrah!" for the motor-car and the suppression of cruelty to horses." The Club had been making progress. It was the only club that represented their industry, and nearly all sections of those who had had to do with automobilism recognised. They were taking charge of the automobile section in the Paris Exhibition (British Section), and the other day the manufacturers of this country had asked them to assist in the formation of a federation, so that they would hold all exhibitions under their auspices. Speaking of the membership of the Club he said more than 160 new members had joined this year, and Mr. Harrington Moore had sent out a whip to members to endeavour to get others to join. Many responses were being made to that appeal! The Automobile Club of France paid £80,000 for their premises, which they were about to extend. It was now the principal club in France, and he hoped they would have the same state of things here. Next year they hoped to have Mr. Chaplin to speak for them in the same way as Mr. Shaw-Lefevre had done. (Applause.)

#### "The Press" and "The Visitors."

The Hon. John Scott-Montagu, M.P., proposed "The Press." They might congratulate themselves, he thought, in having the press of England to record their doings with fairness and generosity. They had heard of the education of horses. It seemed to him that they had to educate the press, for those who reported their movements had to have an acquaintance with technical details. He had taken Mr. H. W. Lucy for a ride on his car, which resulted in a convert to automobilism, for he (the speaker) had received letters from Australia as to motor-cars in consequence of Mr. Lucy's writings in the *Sydney Morning Herald* on the subject. He asked motor-carists to give facilities to pressmen to ride on their cars. (Hear, hear.)

Mr. H. W. Lucy ("Toby, M.P.," of *Punch*), in response to the toast, described a ride he had had on the motor-car belonging to the Hon. Scott Montagu. It was on a Sabbath morning, with the bells pathetically tolling. Greatly daring, he mounted the car. There were three other passengers; one was a gallant officer in the Queen's Navy, who would probably have preferred a quiet scull on a smooth pond. He slowly ascended the vehicle. They would remember the man in the Scriptures who was miraculously cured of blindness, and who saw men like trees walking. He (the speaker) had a recollection of seeing, as they dashed along the highways, the trees like kangaroos leaping. He had also recollections of an uplifted hand with a figure in uniform and something which might have been a policeman's helmet. He fancied it was a constable anxious to take their names. Happily it was out of sight before they found an opportunity of speaking. (Laughter.) That was fortunate, and avoided a scene in the police-court in the morning, with three M.P.s. in the dock and himself in the witness-box giving Queen's evidence. It was literally a moving time, and he was astonished at the perfect control displayed by the veteran driver. Referring to Lady Warwick's recent letter in which she was reported to have said, "Why cannot the ladies belong to the Automobile Club?"—at present they do nothing useful and are very expensive," he suggested men would have said, "Very dear." What the countess meant was that by so doing the Club would largely extend its usefulness and greatly add to its attractions. He had much pleasure, on behalf of the Press, in thanking the Club for its welcome. (Cheers.)

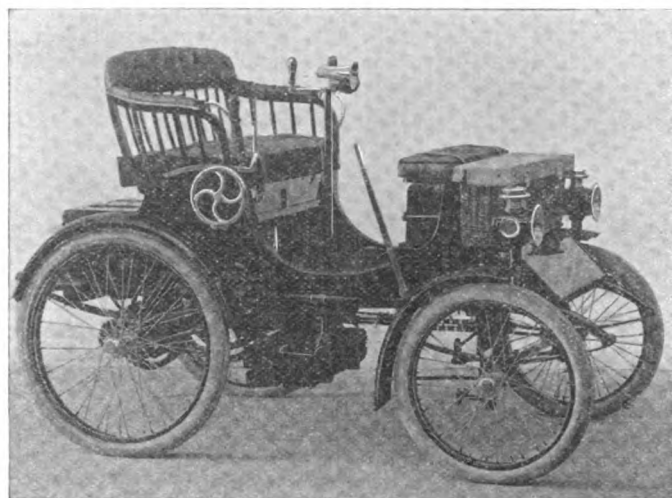
Mr. W. Worby Beaumont, M.I.C.E., proposed "The Visitors."

observing that automobilists were under an obligation to all who gave attention to the development of the new industry. (Hear, hear.)

Sir James Pender, Bart, M.P., responded. He confessed to being a great lover of the horse. Yet he welcomed the introduction of automobiles in this country, because he saw horses struggling with great loads on pavements as slippery as glass. He hoped to see the day when automobiles might be introduced in such numbers that the loads would be taken off those wretched horses. Recently in America he was on a Stanley car—a very light vehicle—but on examination and inquiry he was inclined to think that some of the cars produced in this country were more suited for him. (Cheers.)

## THE PEUGEOT MOTOR-VOITURETTE.

ONE of the large French automobile concerns—La Société des Automobiles Peugeot, of Audincourt (Doubs)—has recently met the demand for a light two-seated voiturette by putting on the market the elegant vehicle shown in the accompanying illustration. The motor, which is located at the rear of the vehicle, is of the horizontal two-cylinder type, and is of 3 h.p.; it is water-jacketed, and is provided with either tube or electrical ignition as desired. Three forward speeds and a reverse motion are provided, the power of the motor being transmitted from the crank shaft through one or other pair of spur wheels to a countershaft, and from the latter to the rear road axle by sprocket wheels and chains. The variable-speed gear is controlled by a hand lever affixed to the side of the car. The speeds range



from 8 kilometres up to a maximum, on good level roads, of 35 kilometres per hour. The frame of the car is built up of steel tubing, while the wheels are of the cycle type, fitted with pneumatic tires; the rear wheels are 31½ in. diameter and the front ones 25 in. Two brakes are provided, one controlled by a foot pedal and the other by a hand lever; while the steering is effected by a bar in the usual way. Provision is made for the storage of motor-car spirit sufficient for a run of 200 kilometres and of water for 100 kilometres. A radiating coil for the cooling of the water is fitted under the centre of the car. The weight complete of the vehicle is given as about 350 kilogrammes, or not quite 7 cwt.; while its dimensions are—length 7 ft., width 4 ft. 2 in., and height 4 ft. 4 in.

IN reply to the enquiry of J. H., of Bicester, we may mention that it is necessary to obtain an Inland Revenue licence in respect of a motor-tricycle, the cost of the same being 15s.

MANY were surprised on Monday to find the Hon. C. S. Rolls not mounted on his well-known 8-h.p. Panhard racer, but on a Peugeot two-seated voiturette of the type illustrated above. We learn that Mr. Rolls has sold his "fire engine" for no less than £1,280, and is now offering £1,680 for a 12-h.p. Panhard racer.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### Mr. W. K. Vanderbilt an Automobilist.

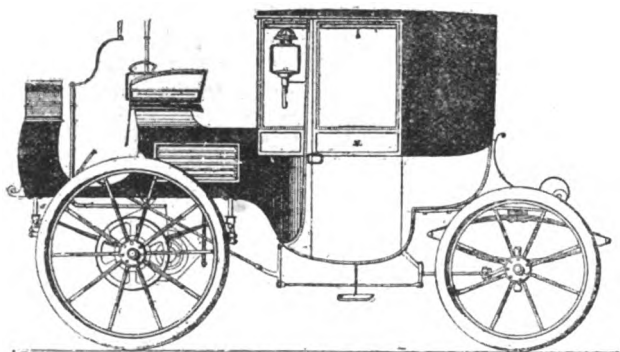
AMONG the latest purchasers of an automobile is Mr. W. K. Vanderbilt, who is now the possessor of a handsome Panhard car. Accompanied by Mrs. Vanderbilt, he left Paris on the 4th instant for Nice, breaking the long drive by a few days repose at Marseilles.

### The Health of M. Craninckx.

ALL English automobilists will learn with pleasure that the ultimate recovery of Mr. Charles Craninckx is now assured, and that the doctors anticipate he will not conserve any evil effects from his terrible accident at Waulsort, Belgium.

### An Austrian Electrical Coupé.

REFERENCE has already been made in this column to the increasing attention which is being devoted to automobiles in Austria. A firm which has been devoting itself to the construction of motor-vehicles for some time past is Messrs. Jacob Lohner and Co., of Porzellangasse 2, Vienna IX., both electrical and petroleum spirit motor cars being now turned out by this concern. The accompanying illustration shows the Lohner three-seated electrical coupé. It is propelled



by a 5-h.p. Egger electro-motor, geared by spur wheels to the front axle. The battery, which is located under the driver's seat, comprises 42 cells of a capacity of 100 ampere-hours, the weight being given as 8 cwt. 28 lb. The controller is arranged to give four forward speeds and a reverse motion, while in one position the motor is made to act as an electrical brake. In addition to the electrical brakes, tire brakes operated by a foot pedal are provided. Steering is effected by a bar, while the wheels are of wood fitted with solid rubber or pneumatic tires as desired. The makers state that a distance of from twenty-five to fifty miles can be covered on one charge of the battery, according to the condition and gradients of the roads traversed. A noticeable feature in the Lohner vehicles is the employment of front wheels of a larger diameter than those at the rear.

### The Paris-St. Petersburg Race.

As is well known, the Automobile Club of France had formed a project to decide next year a great race from Paris to St. Petersburg, but ultimately relinquished the idea upon presentation of the report of MM. Thévin and Houry, whom they had delegated to examine the various routes and to advise as to the feasibility of the scheme. The report of these delegates has only recently been published in detail, although their condemnation of the Russian roads has been known for some time and has

occasioned considerable controversy. A perusal of the report *in extenso* satisfies one that MM. Thévin and Houry have carried out their work of inspection very thoroughly, and that their decision as to the impracticability of deciding the race is well founded. They express a perfectly favourable opinion on each of the three grand routes from Paris to Berlin, these being *via* Liège and Cologne, Frankfort and Eisenach, and Frankfort and Cassel, albeit the first-named traverses a region somewhat too populous to permit of automobile racing with entire safety. After leaving Berlin the delegates found excellent roads *via* Königsberg to Tilsit, and it was only after passing the Russian frontier en route for Riga and St. Petersburg that they encountered roads of a character sufficiently bad to render speed travelling on them an impossibility. The distance between the German and Russian capitals by this itinerary is 1,530 kilometres, of which 750 are in Russia. Upon arriving in St. Petersburg the two delegates were received by Prince Thilhof, the Minister of Roads, who honoured the A.C.F. with an assurance of his assistance should it be decided to attempt the race. This, however, the Club have decided not to do, a decision strengthened by the opinion of MM. Thévin and Houry that the progress of automobilism in Russia would receive but little impetus from the holding of any race over the imperial roads.

### Bremen-Hanover Race.

THIS race was decided on the 5th instant over a route of 120 kilometres. Four motor-cycles and two voiturettes competed, and the winner was found in Carl Steinfeld, who covered the distance in 4 h. 12 m.

### A Hurtu Electrical Cab.

LA COMPAGNIE DES AUTOMOBILES ET CYCLES HURTU, 54 Rue Saint-Maur, Paris, is turning its attention to electrical vehicles in addition to petrol cars. The Company has just completed an electrical cab which comprises several novel features. There are two electro-motors, geared to the front axle on the Marchena-Gigot system. The battery consists of forty-two accumulators of a new type, known as the Geoffroy-Delore, the capacity being given as 150 ampere-hours. I hope to send you full particulars of the new vehicle shortly.

### The Renault Car.

I UNDERSTAND that Messrs. Renault, of Billancourt, are introducing some modifications in the neat voiturette illustrated in *The Motor-Car Journal* for September 15th last. The frame of the vehicle is to be made both slightly longer and wider, while a De Dion motor of 3 h.p., with water-jacket, is to be fitted.

### The French Automobile Club.

A *garage* is to be established in connection with the Club's house in the Place de la Concorde in Paris; it will comprise a *garage* proper for the storage of members' cars and a gallery in which motor-vehicles may be exhibited for sale. There is no doubt that the *garage* will be largely made use of by the members.

### Illness of Herr G. Daimler.

CHAUFFEURS in all parts of the world will regret to learn of the illness of Herr Gottlieb Daimler, of Cannstatt. I understand that Herr Daimler is suffering from weakness of the heart, which it is to be hoped is only of a temporary nature.



## A Steam Motor Mail Van for Ceylon.



**I**N a recent issue we stated that a large steam motor mail van had lately been supplied by Messrs. Julius Harvey and Co. for regular postal work in Colombo, Ceylon. We are now able to give an illustration of the vehicle, which was constructed by the Lancashire Steam Motor Co., of Leyland, on their well-known system. The van is constructed to carry one ton of mail matter in bags, and will make an average speed of about ten miles per hour on ordinary country roads. It has been put through a very long and severe test by the engineers for the Postal Department, which it has passed to their entire satisfaction.

WE learn that Mr. Frank Morriss, of King's Lynn, who has a large connection in Norfolk (having, besides his depots in Lynn, branch depots at Great Yarmouth and Norwich), has purchased a large site in Prince of Wales' Road, at the latter place upon which he intends to build a further motor depot for repairs, supplying parts and fittings, etc. We may also mention that Mr. Morriss has just added coachbuilding to his business, and has several motor-buses in course of construction, which, when completed, he intends running at Norwich, where he has already a service of Daimler cars in operation.

THE Wincycle Trading Company, Limited, has been registered with a capital of £5,000 to acquire all rights and title to the name Wincycle, and the goodwill of the cycle business carried on by the White Sewing Machine Company under that name, and to manufacture and deal in cycles, motor-cars, etc. The first directors are Messrs. R. S. Daville, A. Whale, J. Williams, S. F. Edge, and C. Sangster. The registered office is at 106 Great Saffron Hill, E.C.

## A HILL-CLIMBING CONTEST NEAR PARIS.

(From Our Own Correspondent.)

**O**NE of the largest attendances ever seen at an automobile demonstration assembled on Sunday morning last at Chanteloup, on the occasion of the second of the hill-climbing contests annually promoted by *La France Automobile*. That the contest passed off without serious accident is a matter for congratulation, as the lack of management was deplorable, the local police and fire brigade being quite inadequate to maintain a clear course for the competitors. Dozens of chauffeurs who had driven out from Paris were determined to put their vehicles through their paces on the famous hill, so that in addition to the genuine competitors—who, by-the-by, carried no numbers, thus greatly adding to the confusion—there were many drivers making or attempting to make the ascent. When they failed to reach the summit the cars were permitted to remain on the course, obstructing the competitors and adding greatly to the danger of the contest. As no less than 310 motor-vehicles were present, the difficulty of controlling their movements was no easy task, but had the promoters of the run exercised a little more discretion a larger body of police would have been on the spot, and the affair would have passed off smoothly.

The disappointment of the day was the absence of M. Jenatzy's famous car "*La Jamais Contente*," which was unable to compete owing to delay in altering the position of the wheels, a work that had been undertaken expressly to permit of the vehicles negotiating the somewhat awkward corners on the hill with greater facility. As a substitute,



however, M. Jenatzy, drove an electric phaeton, which performed admirably and created a very favourable impression. Its time of 3 m. 10 $\frac{2}{3}$  s. (record) for the course would have been very considerably less but for the delay occasioned by a horse-drawn vehicle obstructing the road. The most noteworthy performances were those of Béconnais, as he actually finished first in two events, and would probably, but for obstruction, have held the same place in a third. His times, too, were excellent; indeed, in the motor-cycle category he made the course in 2 m. 34 $\frac{2}{3}$  s. or only 8 $\frac{2}{3}$  s. slower than Renaux's record of July 4th. As was generally anticipated, the Stanley voiturette did very well, and its driver, M. Debacker, even asserts that he actually covered the distance one minute faster than the official returns of 4 m. 40 $\frac{2}{3}$  s. In his category he finished second to Béconnais, who was driving a Phébus quadricycle. In the class reserved for heavy cars (non-electric) a Peugeot driven by M. Doriot scored a victory, also beating the previous record for this category, which stood to the credit of M. E. Giraud. It should be added that everything, excepting obstruction of the course, was favourable to fast times, the road service being excellent and the weather all that could be desired. The official figures were as follows:—

**FIRST CATEGORY.**—Electric vehicles: 1, Jenatzy (Jenatzy), 3 m. 10 $\frac{2}{3}$  s. (record); 2, Heinz, 3 m. 29 s.; 3, Klingelhofer, 4 m. 37 s.; 4, Sheldon, 8 m. 13 $\frac{2}{3}$  s. Previous record, 3 m. 52 s., by Jenatzy.

**SECOND CATEGORY.**—Non-electrical cars more than 400 kilos: 1, Doriot (Peugeot), 4 m. 2 $\frac{2}{3}$  s. (record); 2, De Turckheim, 5 m.  $\frac{4}{5}$  s.; 3, G. Richard, 5 m. 56 $\frac{2}{3}$  s.; 4, Lemoine, 6 m. 47 $\frac{1}{2}$  s.; 5, Maurice, 7 m. 4 $\frac{1}{2}$  s.; 6, Letellier, 7 m. 23 $\frac{2}{3}$  s.; 7, Brillé, 7 m. 32 $\frac{2}{3}$  s.; 8, Nitot, 7 m. 37 $\frac{2}{3}$  s.; 9, Hurtu, 7 m. 49 $\frac{1}{2}$  s.; 10, Dubois, 8 m. 6 s.; 11, Lemoine, 9 m. 13 s.; 12, Chale, 9 m. 36 s.; 13, Honnet, 11 m. 3 $\frac{2}{3}$  s.; 14, Labouré, 11 m. 36 $\frac{1}{2}$  s.; 15, Guyonnet, 12 m. 29 $\frac{1}{2}$  s.; 16, Goubault, 13 m. 28 $\frac{1}{2}$  s. Previous record, 4 m. 34 s., by E. Giraud.

**THIRD CATEGORY.**—Non-electric automobiles weighing less than 400 kilos.: 1, Béconnais (Phébus quadricycle), 3 m. 7 $\frac{2}{3}$  s. (record); 2, Debacker (Stanley voiturette), 4 m. 40 $\frac{2}{3}$  s.; 3, Van Benredonck (Eole voiturette, Aster motor) 5 m. 12 s.; 4, Ledoux, 5 m. 24 $\frac{1}{2}$  s.; 5, Théry, 5 m. 27 $\frac{1}{2}$  s.; 6, Ravenez, 5 m. 50 s.; 7, Creux, 6 m. 5 $\frac{1}{2}$  s.; 8, Chabrière, 6 m. 31 $\frac{1}{2}$  s.; 9, G. Richard, 6 m. 49 $\frac{2}{3}$  s.; 10, Hugot, 7 m. 48 $\frac{2}{3}$  s.; 11, L. Renault, 8 m. 10 s.; 12, Guyenet, 8 m. 14 s.; 13, M. Renault, 8 m. 40 $\frac{2}{3}$  s.; 14, Sheppard, 9 m. 55 $\frac{2}{3}$  s.; 15, Benoit, 9 m. 55 $\frac{2}{3}$  s.; 16, Dupont, 10 m. 22 $\frac{2}{3}$  s.; 17, Delaunay, 10 m. 32 $\frac{2}{3}$  s.; 18, Fournier, 10 m. 47 s.; 19, Martel, 10 m. 47 $\frac{2}{3}$  s.; 20, Collin, 10 m. 56 $\frac{2}{3}$  s.; 21, Boissaye, 13 m. 38 $\frac{2}{3}$  s.; 22, Rouxel, 16 m. 21 s. No previous record.

**FOURTH CATEGORY.**—Motor-cycles: 1, Béconnais (Phébus), 2 m. 34 $\frac{1}{2}$  s.; 2, Osmont, 2 m. 45 $\frac{1}{2}$  s.; 3, Renaux, 2 m. 46 $\frac{1}{2}$  s.; 4, Guillemin, 2 m. 56 s.; 5, Gasté, 2 m. 59 $\frac{2}{3}$  s.; 6, Rouquette, 3 m. 17 $\frac{2}{3}$  s.; 7, Aulin, 3 m. 29 $\frac{2}{3}$  s.; 8, Deckert, 3 m. 45 $\frac{2}{3}$  s.; 9, Bataille, 3 m. 47 s.; 10, Christian, 3 m. 47 $\frac{2}{3}$  s.; 11, Bonnart (Werner bicycle), 3 m. 53 $\frac{2}{3}$  s.; 12, Delangère, 3 m. 56 $\frac{1}{2}$  s.; 13, Monier I., 4 m. 2 $\frac{2}{3}$  s.; 14, Monier II., 4 m. 20 s.; 15, Mas, 4 m. 27 s.; 16, Balvay, 4 m. 53 $\frac{2}{3}$  s.; 17, Cousin, 6 m. 13 s.; 18, Maurice, 6 min. 20 s.; 19, Ganeau, 6 m. 27 s. Existing record, 2 m. 25 s., by Renaux.

**FIFTH CATEGORY.**—Motor-cycles, without chains: 1, Renaux, 2 m. 41 $\frac{2}{3}$  s.; 2, Caron, 2 m. 46 s.; 3, Béconnais, 2 m. 46 $\frac{2}{3}$  s.; 4, Gasté, 3 m. 4 $\frac{2}{3}$  s.; 5, Mlle. Lemorne, 3 m. 5 s.

"MOBIKE" is a new American term for motor-bicycle.

THE business of the United Motor Industries, Paris, in this country has increased to such an extent that Mr. H. O. Duncan has found it necessary to be represented on the spot, and offices have been opened at 64 and 65 Holborn Viaduct, E.C., with Mr. G. H. Smith, a gentleman well known in the cycle trade, in charge. We may mention that the Company have just obtained the sole British representation of the French "Hurtu" Car.

## MIDLAND MOTOR NOTES.

### The Motor-Car Industry.

My attention has been called to the query of a "Spectator in Warwickshire" in one of the Midland papers. This writer asks, "Is the motor-car industry slack or is it brisk? Coventry is regarded as one of the centres of the industry, and a few days ago a prominent daily newspaper said, in an article on Coventry trades: "There is not much being done in the motor-car industry, but good orders are expected shortly." In a general article on the motor-car industry on the same day the same paper said: "The briskness of trade is indicated in the rise of shares in the various prominent motor industries." The writer adds that it is rather bewildering when news is served up in this way. He also expressed the opinion, which no doubt readers took for what it was worth, that he would not be too sure that an upward share market is always an evidence of briskness of trade. Markets are sometimes rigged.

### Activity at Coventry.

I REFER to this because it shows that even some of our prominent daily papers do not take the trouble of ascertaining what are the real facts of the case. To contradict oneself in the same issue certainly shows loose management somewhere, but this doubtless occurred through information being received from two quarters. "Spectator in Warwickshire" could easily have had his doubts set at rest if he had cared to take a trip to Coventry and paid a visit to one or two of the leading firms. He would have found that the greatest activity prevails in every department of their large factories, and that motor-cars are being turned out with great expedition. Motor-cars are not like bicycles, however, they cannot be turned out in hundreds every week. There is a tremendous amount of work involved in their construction; the workmanship must be of the best, and much care has to be bestowed on the vehicle, which when completed is subjected to a thorough test before being sent to the customer. I know that many people are inclined to be sceptical as to the amount of trade done. They seem to have formed the opinion that the country would soon be overrun with motor-cars, and that they would be manufactured as rapidly almost as bicycles. Their imaginings have not been realised, and they are disappointed. They cannot believe that the motor-car industry is growing so fast as I have said it is in these notes; but a little reflection would soon convince them that the trade has grown more rapidly than even the most sanguine dared to hope a year or two ago.

### Trial Runs.

ONE cannot go far into the country surrounding Coventry without meeting one or more motor-cars out for a trial spin. On Saturday I saw at least half a dozen, and all of them were behaving admirably. Of course there were several stoppages, but these were very brief and merely for the purpose of adjusting the working parts or remedying some small defect which had become apparent during the ride. Two of the cars I saw ran splendidly, and mounted Gibbets Hill on the Kenilworth and Coventry road without difficulty. Another motor-car, which I saw earlier in the week, was not so satisfactory in its first spin. The engine appeared to be a very powerful one, and worked rather noisily, with the result that the car shook as though suffering from a violent attack of ague. But even in a case of this sort the matter was soon put right, and the car was quickly running with little or no noise. Everyone admits that a great advance has been made towards the perfecting of automobiles, and the occasion is rare indeed when a driver is in such difficulties with his car that a crowd gathers and

scoffs at his efforts to get the machine to run. Another year will see still greater improvements, and so enterprising are most of the firms in the trade that they will never rest until the ideal motor-car is produced.

**Motor-Cars  
at Leicester.**

THE effort to introduce additional capital into the Leicester Motor-Car Company, Limited, has, I understand, been thoroughly successful. Shares have been taken up most readily, and to-night (Friday) a meeting will be held to appoint the new board of directors and officials. This is good news for the public of Leicester, because it means the immediate adoption of a much more complete service than has hitherto obtained. In addition, the operations of the Company cannot fail to popularise the motor-car in the town and neighbourhood in which one is constantly hearing its general utility discussed. Only this week the eyes of tradesmen and merchants have been opened wider as to the practical use to which motor-vehicles can be put by the appearance in the streets of a neat little delivery van, which is daily doing the work of two or three horses without any of the attendant risks. I know of few counties better adapted to the purposes of motoring than Leicestershire, and from what one can gather the adoption of self-propelled vehicles by traders and others will become the rule rather than the exception in the near future.

**New Cars.  
from Coventry.**

MESSRS. ALLARD & Co., of Coventry, will have on view at the Crystal Palace next week two motor-cars, one constructed to carry three or four persons and the other to carry two passengers. The cars were tested by the manager of the Company early during the present week, and are capable of climbing steep hills and maintaining a good rate of speed on the level. The vehicles are handsome in appearance, are shod with pneumatic tyres, and are well worth inspecting. The Beeston Motor Co., Ltd., of Coventry, in addition to motor-tricycles and quadricycles, are also sending a new two-seated car to the Crystal Palace. It is fitted with a 3½ h.p. motor with electrical ignition. Two speeds are provided, the whole turn-out being of an attractive appearance. All the motor firms in the Midlands have been working almost night and day completing their exhibits for the forthcoming cycle shows.

A MOVEMENT is on foot in Copenhagen to form a Dansk Automobilklub.

"CYCLES AND MOTOR-VEHICLES" is to be the subject of a paper to be read by Mr. Craig, of the Humber Works, at a meeting of the Cycle Engineers' Institute at Coventry on December 14th.

THE annual report of the U.S. Second Assistant-Postmaster-General says that the Department has invited proposals for carrying mails by automobiles between the post office in Chicago and two postal stations in the business centre.

WE learn that Messrs. Allan & Adamson, Ltd., manufacturers of the Allan accumulator, have removed their office from 88 Tabernacle Street, E.C., to Clun House, Surrey Street, Strand, W.C. They have also erected new works at Ashted, Surrey.

DURING the course of the National and Stanley Shows, which open to-day, there will be a short motor-cycle race meeting at 3 p.m. on both the Saturdays and the Wednesday on the Crystal Palace track, under the auspices of the Motor-Car Club. We learn that the events will be arranged so as to give as far as possible, visitors from the country a good idea of the different capabilities of these speedy machines, and that some of the best known riders have entered for the contests.

**MEETING OF MANUFACTURERS  
AT THE AUTOMOBILE CLUB.**



A MEETING of manufacturers in the automobile industry was held at the Automobile Club, Whitehall Court, S.W., on Friday, the 10th inst., to consider various points submitted for their consideration by the Club administration. Among those present were Messrs. Frederick R. Simms, W. Worby Beaumont, Frank Butler, Staplee Firth, Shrapnell Smith, the Hon. C. S. Rolls, Col. Magrath, Messrs. J. Grahame-White, Stanley Spooner, Harry J. Swindley, C. Harrington Moore, Julius Harvey, S. F. Edge, E. K. Purchase, C. Jarrott, J. J. Mann, E. H. Bailey, Percy Northey, J. S. Critchley, S. Straker, J. H. Gretton, A. Engleheart, P. Souvestre, E. Townsend, F. Johnson, G. T. Riches, H. E. Zacharias, G. A. Burls, G. T. Harrap, H. N. Searles, E. Lefebure, Howard Unwin, M. H. Buckea, J. S. Siddeley, C. Cordingley, J. G. Walby, F. Howard Mercer, R. Muirhead, E. Lisle, C. Friswell, J. McManus, J. D. Roots, the Secretary, and others.

Mr. Roger Wallace, Q.C., presided, and, referring to the exhibitions which had been held in the past, said it was generally felt that if only one exhibition a year was held it would be a very much better affair than either of two could be, for all the energies of the trade could be directed to making it a success. Mr. Cordingley had met the Club fairly in the matter, and was willing to throw in his lot with them. The result was that an arrangement had been made by which the exhibition would be called the Automobile Club's Exhibition, and be held at the Agricultural Hall; the Club would have the direction, and Mr. Cordingley would be business manager. The Club would have nothing to do with the finances, except to receive a certain sum from Mr. Cordingley and to find the prizes in connection with the trials. The question of space would be under the control of the Club, but the general arrangement would leave it free to exercise its energies in other directions.

Discussion having been invited,

Mr. S. F. Edge voiced the general feeling that it was right to have only one exhibition, for the expenses of two exhibitions fell rather heavily upon manufacturers, and the automobile public was at present a limited one.

**FEDERATION OF MANUFACTURERS.**

Mr. J. H. Gretton suggested there should be an arrangement between manufacturers that they should only show at the one exhibition at the Agricultural Hall. He hoped that the manufacturers would form a union, one of the objects of which should be to decide upon such questions as exhibiting at provincial exhibitions. If the Club would take the lead in that matter he thought the majority of manufacturers would join.

The Chairman said the Club would willingly allow the manufacturers to meet in its rooms for the formation of such a federation, the members of which should agree not to apply for space in any automobile exhibition unless it was held under the auspices of the Automobile Club—such sanction not to be given by the Club until the federation had discussed the matter and arrived at a decision.

**1,000-MILE TRIAL.**

The Chairman then called attention to a circular which had been issued giving the itinerary of a 1,000-mile trial proposed to be held early next year. He thought such a trial would show the public that the industry was in a more advanced stage than was generally thought, and referred to the interest which leading newspapers were taking of the scheme.

Mr. S. F. Edge regarded the time of the proposed tour—March 19th to April 6th—as inopportune, as the test would, by reason of the bad roads, be far more severe than at any other period of the year.

Mr. Gretton agreed, and thought the trial had better take place after the exhibition than before.

Mr. C. Johnson (the Secretary) explained why this particular date had been proposed. Firstly, the date of the Agricultural Hall Exhibition had been definitely fixed and many manufacturers were exhibiting at Paris. To hold the trials later, when cars were being ordered, would be a great drain upon the manufacturers. Important races were to be held in France in May next, so that, all things considered, the selected dates seemed the most convenient.

An interesting discussion followed, in the course of which some speakers urged the retention of the dates so as to give the cars the severest test possible, and others thought a time should have been selected when the roads would be in an ordinary condition. Various criticisms as to the route were also made, and the claims of Manchester for an exhibition were advocated by two or three speakers. Ultimately it was decided to leave the details for discussion at a meeting of the representatives of manufacturers who intend entering for the trials. The meeting will be held at the Club on Monday next, the 20th inst., at 5.30 p.m.

#### OTHER TRIALS.

It was agreed that a meeting of makers of electric vehicles should be held to consider the question of trials for such vehicles; and the matter of heavy vehicles was adjourned to the special meeting to consider the same question.

#### ACCESSORIES.

The Chairman suggested that makers of parts and accessories might arrange with the constructors of cars that they should fit them with their parts, etc., so that their suitability could be ascertained. He much hoped that makers of tires would come to such an arrangement, and inasmuch as the rules affecting the Gordon-Bennett International Automobile Cup required that a carriage to be entered for the race must be constructed throughout in the country of the Club through which it is entered, it was of the greatest importance that manufacturers of springs, wheels, tires, axles, etc., should turn their early attention to the manufacture of these parts of suitable construction, material and general excellence, in order to withstand the huge strains connected with a heavy and powerful motor-car being driven over a long course at a very high speed.

The proceedings then terminated.

MESSRS. B. WEATHERLEY & SONS, 261 High Street, Lewisham, and 127 Rushy Green, Catford, inform us that they are now carrying a stock of motor-car spirit, lubricating grease and oils, and other accessories for motor-cars and cycles. They have also lately completed alterations at their Lewisham works, and are now in a position to undertake repairs to automobiles of all kinds.

THE French rights in the motor-cars of Bergmann's Industrie Gesellschaft, of Gaggenau, Germany, which are known in this country as the "Orient Express," have been secured by M. Huret (successor to Belvallette Frères,) 66 Rue Pergolese, Paris.

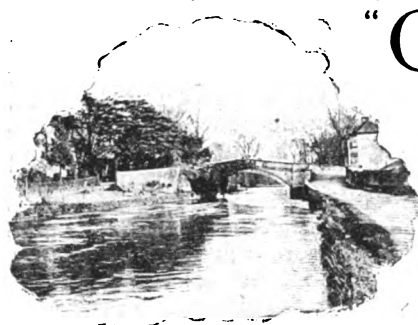
AT the Prince's Hall, New Lambeth Baths, S.E., on Tuesday last week, a very successful concert was held for the benefit of the employes who lost their working appliances, etc., in the great fire at Mackenzie's motor-car works some time ago.

THE steam motor-wagon, which as mentioned in our last issue, is being given a fortnight's trial by the Strand Board of Works is, we learn, of the Thornycroft type, built by the Steam Carriage and Wagon Company, of Chiswick.

EXPERIMENTS are being made at Detroit, Mich., with a three-wheeled motor mail carrier.

## THROUGH PERTHSHIRE IN A HORSELESS CARRIAGE.

(Concluded from page 571.)



ON August 5th, Perth was visited on account of friends coming to join the party. A very smart run over excellent roads from Aberfeldy to Perth took about 2½ hours. A superbly served dinner was heartily enjoyed at the Market Hotel, which can be highly recommended as a pleasant, homely place

for dinner or tea. The return journey was made through Old Scone to Meikleour, the lofty beech hedges on this estate being passed *en route*. Caputh and other beautiful rustic villages were visited on the road to Dunkeld and Aberfeldy. Following part of the road traversed on the Glen Lyon trip, as far as Coshieville, then striking a hill road to the right, brought the tourists, on August 7th, to a wild, hilly part of Perthshire near that grand and rocky peak of Schiehallion. This road is rather difficult for a motor-car, though not so bad as that over the hill from Bridge of Balgie. Whitebridge, which consists of a few houses, is situated at the upper end of this road, and here the road followed, viz., to Kinloch Rannoch, extended northwards and partly round Schiehallion. The extensive view of the Grampians obtained from near Whitebridge is more than ample return for the trouble taken in getting to such an elevation. In weather with most exceptional sunshine, the vast extent of mountainous country with its varied tints of green, purple and distant blue, the extraordinary variety in shape and structure of the many mountain tops, with the occasional glimpse of a sheet of water, combined to make the tremendous scene most impressive in its grandeur. The road down-hill to Kinloch Rannoch was only medium, and at some parts quite dangerous, with steep descents and sharp curves. On reaching Rannoch many local 'Hielandmen' came to examine the car; they said it was the first which had visited them. A number of them—the village cobbler, a mason, and two boys—were invited to have a short ride, in which they took the most intense delight. The home journey was resumed by following the River Tummel where it leaves Loch Rannoch and descending along its course by Loch Tummel. The scenery along Strath Tummel was found to be extremely beautiful. Though not so wild as some of that previously visited, it displayed a combination of pastoral beauty in the valley with a background of towering mountains, Loch Rannoch at one extremity and Loch Tummel at the other, the transition from the one to the other being gentle and pleasing in the extreme. Falls of Tummel were visited near the confluence of Garry and Tummel, and here a good opportunity of visiting the Pools of Garry was taken advantage of from the old, weather-beaten Bridge of Garry. Thence the journey through Pitlochry to Aberfeldy was carried out.

"The following day, August 8th, a short run was taken to Kenmore, thence along the south side of Loch Tay to Acharn village. Here the falls were admired, and the hermitage examined. Burns is said to have visited this interesting spot. The road on the south side of Loch Tay is, so far as it was traversed, very good for motor-cars.

"Leaving early in the morning, on August 9th, travelling along the Loch Tay, through Killin to Lochearnhead, Balquhider Braes were passed on the right; Strathyre, nestling beautifully in the valley at the end of Loch Lubraig, was hurried through, and the edge of the loch traversed. After a pleasant trip Callander was reached, and soon the car was spinning along to the Trossachs and Loch Katrine. An hour spent on a boat, visiting Ellen's Isle and Silverstrand, was

one of the finest features of the fortnight. A chorus of six in our boat sang "Hail to the Chief" whilst the boat was lying in the lee of Ellen's Isle. The blended harmony of male voices—tenors and basses—echoed and re-echoed on the bold cliffs of Ben Venue," giving an acoustic effect which can never be equalled in public halls or the chambers of the great.

"The return to Callander was without incident, but in going along Loch Lubraig a carriage and pair, driven by a young lady with coachman behind, was met suddenly at a sharp bend in the road. The lady was surprised, and rather lost her head, the horses rearing meantime. As the road was narrow the lady had no control over the horses. The car had to be pulled to the loch side of the road, and that so quickly that when stopped it was only a few inches from the edge of the road and a descent of some 15 ft. If the coachman had not promptly jumped to the box and taken the reins rather forcibly from the lady the results might have been disastrous to the motor party. It is hardly just to motor-car drivers for this loose style of driving horses to be allowed.

"At Callender the party was spoken to by an old lady, who, after many pleasant and interesting enquiries, said 'Good-bye,' and hoped never to see us again. She was driven in a carriage, and her horses were a little afraid, though not so much as she was. After an exhilarating ride back through Killin darkness overtook the party. Thus, driving was rather difficult for a few miles along Loch Tay before reaching Kenmore, where the road is entirely shaded with trees. The slightest misunderstanding regarding the direction of the road on a murky night could easily be followed by a precipitous fall over the road into Loch Tay. An experience worth noting befel the party near Kenmore on this night. At about 12.30 a.m. the motor ceased to move, and on examination it was found that the lubricator required oil. Whilst filling this a local Hielandman, reeling home 'half seas over,' accosted the party, greatly to its amusement. On parting he reminded us that a gate was closed across the road about a mile further on, this being done nightly at 9 p.m. by order of the Marquis of Breadalbane. This was looked upon in the light of a joke. However, a sharp look-out was kept in the dark, with the result that the motor-car had to be suddenly drawn up about a yard from the gate. But for the warning of a tippy man, the gate might have been smashed, not to speak of the effect on the car and party. It may be stated that this is a public road, and that there were no lights on the gate.

"August 10th was spent in taking people for short trips in the car, everyone being much delighted.

"On August 11th a short run was made to Blair Gowrie; this was very enjoyable, both on account of the richness of the agricultural districts passed through and of the fine weather.

"The trip was brought to a successful conclusion on August 12th, the homeward journey being through Amulree, Crieff, Dunblane, Stirling, Cumbernauld, and Motherwell."

We have received a copy of the programme of the one hundred and forty-sixth session of the Society of Arts, from which we note that amongst the arrangements made for lectures and papers Mr. John I. Thornycroft has promised to read a paper after Christmas on steam motors for common roads.

THE "Crest" is the name of a new two-cylinder petrol motor just brought out by the Crest Manufacturing Co., Dorchester, Mass. The motor is of about 4 h.p. and adapted for tricycles or other small vehicles carrying two or more persons. It is 27 in. long, 8 in. wide, 9 in. high, and weighs less than 90 lb. The engine is of the air-cooled type, but as a single-cylinder 2½-h.p. motor is considered to be the limit of that type it is made in tandem form, so arranged that either or both cylinders may be used at will; in fact, it closely resembles a couple of De Dion motors so arranged as to work on to a central crank shaft. The electrical ignition device can, it is claimed, be varied to give any speed between 100 and 2,000 revolutions per minute, the ignition in the two cylinders taking place alternately.

## CORRESPONDENCE.

### THE CINEMATOGRAPH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Nenthead—the highest village in England to Alston—the highest market-town in the country, is an almost continuous down-grade journey of 4½ miles, the descent being 480 feet. The road was in some parts a perfect quagmire owing to the recent heavy rains. We took about half an hour for the journey, and as we stayed two days at Alston we obtained a well-earned rest. On Saturday morning we started in a steady rain for Haltwhistle, and had the choice of three roads, one—said to be the worst—13 miles; another, very little better, 16 miles; and a round-about route, 27 miles, said to be very good. We selected the latter, and found the road all we could wish. The weather was, however, anything but propitious, for after being out about an hour we encountered a terrific hailstorm accompanied by flashes of lightning. We were literally bombarded with hailstones, and were finally compelled to stop the car and take shelter behind.

On Monday I had an urgent call to Edinburgh, and having returned to Brampton to-day I have just heard an account of the adventures Sinclair and Lax encountered. They had only got two miles out of Haltwhistle on the way to Haydon Bridge when one of the platinum tubes cracked. The manager of a colliery near came forward and helped them out of their difficulty. He instructed one of his men to get a horse and see them to Haydon Bridge. A new tube was obtained from Coventry, and on my arrival here from Edinburgh I found the car had safely landed three hours or so before me. It is hiring day at Brampton, and the car has caused quite a commotion amongst the crowds of country visitors in the town.

Brampton, Yours, etc.,  
Cumberland, T. J. WEST,  
November 15th, 1899. *Manager of the Modern Marvel Co. (Ltd.), of Edinburgh.*

### THE LONDON ELECTRICAL CAB COMPANY.

THE action of Bersey v. the London Electrical Cab Company, Limited, came before Mr. Justice Byrne, in the Chancery Division, on Saturday last. The plaintiff is a debenture-holder, and the principal moneys became payable if a distress was put in or execution levied, or if the company ceased to carry on business. Both these events had happened, and Mr. Justice Byrne made a declaration that the debentures constituted a charge on the undertaking of the company, and gave judgment in the ordinary form in a debenture-holder's action. His lordship gave liberty to apply in Chambers to sell the company's business as a going concern.

### ACTION OVER A MOTOR-CAR ACCIDENT.

In the Edinburgh Sheriff Court last week, before Sheriff Maconochie, the record was closed in an action of damages by Thomas Woolard, 11 Salisbury Place, Edinburgh, against the Edinburgh Autocar Company, Limited, for £100 in respect of injuries sustained by him on September 30th. In his condescendence the pursuer states that while crossing Newington Road, at a point opposite East Newington Place, he went behind a tramway car, and immediately a motor-car belonging to the defendants, coming in the opposite direction, knocked him down and ran over both his legs. The motor-car was fully occupied at the time, and he alleges that the accident was brought about by the driver of the car culpably having omitted to give pursuer any warning whatever of his approach, and that the driver had not kept the car under control. The defenders deny the pursuer's averments, and state that the sum sued for is excessive.

In a recent issue we mentioned that a company had been formed in Paris to acquire and exploit the French rights in the Renaux motor-tricycle. The new company is known as L'Energie, Société des Motocycles et Automobiles, brevets Renaux et autres, and among the directors we notice the name of Mr. J. J. Mann, of Messrs. Marshall & Co., Clayton, Manchester, which firm controls the English rights in the same machine.

## SALES, WANTS, Etc.

[All Advertisements under this heading will be inserted at the minimum rate of 1s. 6d. for 18 words and thereafter at the rate of 1d. per word per insertion, but on no account will any Advertisement be inserted unless prepaid.]

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- 3 Benz Sociables,
- 7 Tricycles,
- 2 Werner Bicycles,
- 3 Bollée Cars,
- De Dion Motors,
- Daimler Motors.

Send for Lists, posted free on receipt of postcard.—Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W. Only Address.

## FOR SALE:—

- 1 Daimler Rougemont Car, to carry eight; grand going order; £250 or offers.
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- 1 English-made Dog-cart, Benz system; heavy Dunlop tyres, three speeds; £180.
- "Benz" Motors for building cars also in stock.

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WANTED, as private Mechanic, smart Youth of exceptional intelligence, thoroughly acquainted with motors or gas engines; used to delicate work.—Rolls, South Lodge, Knightsbridge, S.W.

CAPITAL WANTED, Partnership or otherwise, for manufacturing light motor-cars by Engineer who owns British and foreign patents, whereby reliable and lower priced motor-cars can be put on the market. This is an exceptional opportunity for making money.—C. Roe, 188 Aston Road, Birmingham.

SITUATION WANTED by Young Man (23) as first-class Turner, etc. Seven years' experience in engineering, motor, and motor-cycle works.—"Accurate," 79 Pershore Road, Birmingham.

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## Trade Announcements.

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WELLINGTON'S MOTOR-CAR REGISTER AND ADVERTISER, posted free to any address.—Send postcard for copy to Frank F. Wellington, proprietor, 36 St. George's Square, Regent's Park, N.W.

PLATINUM.—Used Ignition Tubes Wanted, and Platinum Scrap of all kinds Purchased; best prices. N.B.—New Tubes always in stock.—Derby & Co., 44 Clerkenwell Road, London, E.C. Established 1797. 37

"THE MOTOR-CAR MANUAL," by R. Moffat Ford, deals with every type of oil motor in a plain and simple manner, for lay readers. How to buy a motor-car, and how to treat it when bought. Why is a motor when it stops? How to make an excursion, and so forth. Treats fully of Daimler, De Dion, Benz, Bollée, Panhard, Mors, Peugeot, and other motors. Post free in exchange for Postal Order value 2s. 6d.—The Motor-Car Co., 168 Shaftesbury Avenue, London, W.C. 26-39

PHÉBUS-ASTER Motor-Tricycles, Quadricycles and Automobillettes, latest patterns, to be seen at Stand 37, National Show, Crystal Palace. Illustrated List free.—Frank F. Wellington (Agent for London and South of England), 36 St. George's Square, Regent's Park, N.W.

YOU SHOULD TRY ONE.—Wellington's English-made Sparking Plugs for De Dion and other Motors; 4s. each, renewals 1s. each. Any one can re-fit them. Send P.O. 4s. 3d. for sample. Only address, Frank F. Wellington, 36 St. George's Square, Regent's Park, London, N.W.

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## TO CORRESPONDENTS.



All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40 Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and Publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

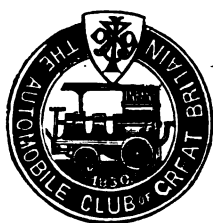
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## COMMENTS.



AN important conference was held at the Automobile Club on Wednesday, the 15th inst., to discuss the advisability of attempting to secure the alteration of the Light Locomotives Act, so far as the tare limit is concerned. There were present Mr. Roger W. Wallace, Q.C. (in the chair), and the following members of the Club Committee:—Mr. W. Worby Beaumont, Mr. T. W. Staplee Firth, Mr. Alfred Jones, J.P. (Senior Vice-President of the Liverpool Branch—the Liverpool Self-Propelled Traffic Association), Mr. John Henry Knight, Mr. Richard Muirhead, Mr. E. Shrapnell Smith (Hon. Secretary of the Liverpool Branch), Mr. Stanley Spooner, Mr. John I. Thornycroft, F.R.S. The following members of the Council of the Liverpool Branch of the Club were also present:—Mr. Charles McArthur, M.P., Mr. Anthony G. Lyster (Engineer-in-Chief, Mersey Docks and Harbour Board), Mr. John A. Brodie (Engineer to the City of Liverpool), Mr. S. B. Cottrell, Mr. A. Musker, Mr. E. R. Calthorp, Mr. W. Becket Hill, and Mr. Lawrence Jones. The record of a meeting of the Liverpool Branch which had been held on the 6th inst. to discuss this matter was read. A telegram from Prof. Hele-Shaw, F.R.S., who was unavoidably detained in Liverpool, was also read. A number of interesting speeches were made. It was decided to take immediate steps in the matter, but the Club deem it desirable not to make known, at present, what action is proposed.

### Elections and Motor-Cars.

OCCASIONALLY motor-cars have been requisitioned to convey voters to and from the poll on election days; but Mr. Mark Mayhew is probably the first active automobilist who has been a candidate for public service and who has employed the motor-car in his canvass. Mr. Mayhew is a popular member of the Automobile Club, and is just now engaged as a candidate in the vacancy for the representation of Wandsworth on the London County Council caused by the resignation of Lord Dunraven.

### L.C.C. and Motor-Cars.

AUTOMOBILISTS will have to keep their eye on the London County Council, for Alderman Beachcroft's intention at Tuesday's meeting was not quite clear, the inference being, however, that he would like the Council to exercise a restraining influence upon their progress. Of course, if we are mistaken we shall be glad if the worthy alderman will correct us. The Highways Committee had recommended that a code of by-laws under section 6 of the Locomotives Act, 1898, with regard to the use of locomotives within the county of London (exclusive of the City of London) be adopted by the Council, which was done. The by-laws now require confirmation by the Local Government Board. Mr. Beachcroft asked if the Council possessed

any power of dealing with motor-cars, to which Mr. J. Williams Benn observed that as the matter was a technical one he should require notice of the question. Hence the warning that seems necessary.

### Local Authorities and the Speed of Motor-Cars.

IN common with other similar bodies the Kent County Council has been considering the speed of motor-cars, and it has decided that the Bridges and Roads Committee should examine and report upon the Local Government Board's regulations, with a view to framing suggestions to that august body. The only protest against such a resolution came from Sir David Salomons, who pertinently asked the chairman, Sir John Lennard, Bart., how he proposed to stop the excessive speed of motor-cars; to which the unsatisfactory reply was made: "It could be and should be prevented." More than that he would not say, and so the Kentish authorities must be regarded as amongst the authorities to whom Mr. Shaw' Lefevre referred at the Automobile Club's dinner as bombarding the Local Government Board against automobilism.

### "Graphic" Sketches.

THOSE who read our special descriptive reports of the motor-car run to Brighton will be interested in last Saturday's *Graphic*. Mr. S. T. Dadd has given half a dozen slight sketches which afford very suitable illustrations of our reports. Not only are the "peasantry" and "pleasantry" to which we made reference depicted, but there are the "Big Black Bullocks" whose horns nearly landed the driver of "Phänomen's" wagonette on a dilemma; and there, too, are the cyclists whose venturesomeness caused our "Novitiate"—no longer a sceptic as to automobilism—to moralise on what would happen when they approach too near to a car should a change be made to a lower speed. The horse in training is also there, as well as the man with the red flag at Handcross, and altogether, Mr. Dadd seems to have fully caught the main incidents of the trip in a truly observant way.

### After the Meet.

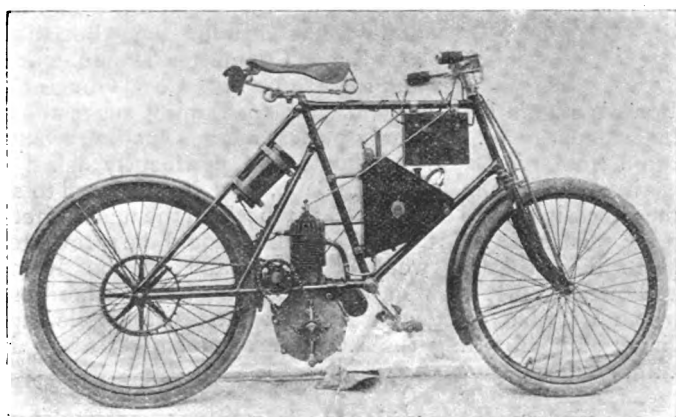
WHILE many newspaper articles on the run of the Motor-Car Club to Brighton were distinctly complimentary, several vicious, nasty little paragraphs have appeared in some of the journals of second-rate importance. It was unfortunate that one of the half dozen cars that failed to go the whole journey was laden with Press representatives, but even they recognised the great improvement that has been made. On the whole, however, the references to "snorting engines" "grotesque creations," "stinking vehicles" and similar designations of the motor-car have been far less frequent on the present than on any previous occasion, and the general verdict was summed up in the cautious admission of the *North British Daily Mail* that "the motor-car is a far less objectionable thing now than when it made its appearance on the public highway three years ago."

## A "Joke."

"ALTHOUGH the motor is making a noise in the world it is not in good odour. People not only turn up their noses at the thing, they have to hold them." So says our facetious contemporary the *Umpire* of Manchester, and we suppose the statement is meant for a joke. But is not truth at the base of all real humour? If so, our contemporary must try again, or in its effort to be funny it will cease to be veracious—and that, in the case of the *Umpire*, would be a pity.

## A New Motor-Bicycle.

In a recent issue we mentioned that a new motor-bicycle was about to be introduced by Messrs. Ambrose Shaw and Sons, of the Gazelle Cycle and Motor Works, Crawley. We are now able to give an illustration of the machine, from which it will be seen that it is provided with a  $1\frac{3}{4}$ -h.p. motor of the De Dion type located under the saddle



between the chain stays of the frame, which has been suitably strengthened to allow for the increased weight and strains as compared with an ordinary safety. The ignition is electrical, while the power of the motor is transmitted by a chain to a small counter-shaft, another chain connecting the latter to the rear wheel. From the illustration it would appear it is not intended that the rider shall assist the motor, the pedals being fixed, serving only as foot rests, the machine being started by opening the compression, tap switching in the electrical current and mounting from the step in the usual way. In future machines the makers inform us that they intend to combine in one the carburettor and the accumulator case.

## "Motor Haulage on Common Roads."

THIS was the title of a paper read at a meeting of the graduates of the Institution of Mechanical Engineers last week by Mr. Alfred Marsden. The paper was an interesting one, and dealt in a comprehensive manner with the subject of steam-propelled vehicles. He commenced by describing the steam generator. In discussing the merits of the three common types of generator in use, the author said that a combination of the water-tube and the fire-tube types would prove the best. The discussion was opened by Mr. Sennett, who described a method of mounting the front axle on a horizontal trunnion, which allowed it to conform to any irregularities in the road. He also thought that the difficulties of driving over newly-metalled roads, which were enlarged on by the author, were easily met by altering the gearing of the engine. Mr. Philipson, of Newcastle, said a few words from the coachbuilder's point of view of the subject. Mr. Stevens described a method of attaching the

tubes of the generator to the tube-plate so as to avoid leakage. He said that the steering gear of some carriages was faulty, inasmuch as in turning sharp corners the steering wheels become fixed owing to the links which connected them to the lever coming in line. He described a method of correcting the fault. Mr. Duncan, the honorary secretary, thought that steering by a lever was most dangerous when running at high speeds, and that a steering wheel was preferable as it could be kept steady in the hand of the driver. He added that he was engaged in designing racing motor-cars.

## Doctors on Motor-Cars.

THERE can be no doubt of the increasing attention which is being devoted to motor-vehicles by the medical profession. The news of the successful adoption of motor-cars by doctors in every part of the country has been spreading at a remarkable rate, with the result that the firms exhibiting suitable vehicles at the two cycle shows this week have been almost inundated with inquiries by other medical men. There can be no question of the suitability of automobiles for this class of work. Not only do they enable doctors to make their rounds in a minimum of time, but they have the advantage of being ready at a moment's notice. We look forward to a large increase in the number of motoring doctors at no distant date.

## A Dash for the Draper's.

"EQUAL rights for motor-cars and horse-driven vehicles" is the demand of all automobilists, who are ever insisting on the necessity for recognising the delinquencies of animals as well as the mishaps of mechanically-propelled carriages. An illustration of the present position has been given in the Sittingbourne County Court. It appears that Mr. Hugh Campbell, a member of both the Stock Exchange and the Automobile Club, took his family for a motor-car ride from his house at Margate on July 18th. At Sittingbourne they met three horses harnessed in tandem style to a grain-laden wagon. The first horse was an unmanly creature, who seems to have lost his temper and caused a collision between the wagon behind and the motor-car. The latter was damaged, and the passengers were shaken. But the blood of the horses was up, and they rushed wildly forward. One of them went through the plate-glass window of a local drapery establishment and fell dead in the shop. That was the chapter of accidents as it was prosaically related in the county court. Now for the sequel.

## The Sequel.

SEVERAL letters were written by Mr. Campbell, who owned the now dilapidated motor-car and by Mr. Mercer, whose interest was that of owner of the horse lately deceased. The former claimed damages as regards his car; the latter wanted compensation for the loss of his horse. Then Mr. Campbell counter-claimed for the amount it had cost him to repair the car; and Sir W. L. Selfe decided between the parties by dismissing Mr. Mercer's action, and similarly disposing of Mr. Campbell's counter-claim. So the former will buy a new horse and the latter pay his bill for repairs, each without assistance from the other. Probably neither is satisfied; but, knowing the prejudice against motor-carists, Mr. Campbell should consider himself fortunate. It is all a matter of education, and greater pains must be taken to see that horses are taught to regard automobiles as friendly contrivances instead of as scarecrows—the only light in which some uncivil brutes see motor-cars at present. On another page we publish a report of this rather interesting case.

**At Your  
"Pleasure"!**

SIR J. WOLFE BARRY is keenly concerned about the enormous traffic that passes through London, and at the Society of Arts has been propounding a scheme for new streets and other works costing about five millions sterling which, he believes, would facilitate progress in getting from one part of the Metropolis to another. At present that is a very hazardous experiment, and Sir John Donnelly confessed in the course of the discussion that followed that he also was greatly impressed by the importance of the subject. "Only the other day," he said, "while trying to cross the road at the top of St. James' Street, I had the pleasure of being knocked down by an auto-motor." This should suggest to these gallant knights now struggling with London's traffic that in this pleasant means of being knocked down lies a partial solution of the problem. On a certain day in October during the course of a single hour 992 vehicles passed Cheapside, 1,228 the Strand, and 1,497 Piccadilly. Now if motor-vehicles had been universal the space they required on the roadway would have been shortened by five or six feet in each case and the dangers of crossing crowded streets correspondingly minimised. When next reflecting on his new found "pleasure" Sir John Donnelly should carry his automobile studies a little further along the line we have indicated.

**The First Parade  
of the  
Automobile Club  
of America.**

THE first public parade of the Automobile Club of America took place in New York on Saturday the 4th inst. A start was made at a quarter after two o'clock with nearly fifty automobiles in line. All styles of horseless vehicles were present, their propelling power being petrol, electricity and steam. The parade was headed by Gen. Andrews, President of the Club, in an electric victoria. The route extended up Fifth Avenue to 126th Street, and thence west by a rather roundabout way to the Riverside Drive, following this to the Clarence Road House, where refreshments were served. The return was made down the Riverside Drive to Seventy-second Street and thence to the Boulevard. No accident occurred to mar the outing.

**Brighton and Back  
in One Day.**

IN order that members of the Automobile Club and their friends who are in town for the cycle shows may have an opportunity of taking part in a club run the committee is organizing a run to Brighton and back on Tuesday next, the 28th inst. The start is to take place at 8.30 a.m., and the return from Brighton, after lunch, is fixed for 2.30 p.m., the day's proceedings being brought to a close by a dinner at the Club House, Whitehall Court, at 7 p.m. It is to be hoped the run will be favoured with good weather.

**Depôts for  
Spirit.**

NOTHING is more annoying to the automobilist than to be in a far country and run short of petrol. Knowing, perhaps, of no local source of supply, irritation invariably sets in, and loss of temper is not the least violent of subsequent complications. Hence the value of the brochure which has been revised and re-issued by the Anglo-American Oil Co., Ltd., giving a list of agents for Pratt's motor-car spirit. This is conveniently arranged in counties, and gives about 350 addresses of firms from whom supplies can be obtained. Around the metropolis the list includes practically every suburb, and the location of some of the agencies in Anglesey, Cumberland, Dumfriesshire, Flintshire, Midlothian, Westmoreland, etc., shows how completely the area of the country is now covered—all, of course, to the advantage of the automobilist, who will find the new list a useful companion when on long tours.

**A New Carriage  
on an  
Old Road.**

ON a French motor-car, driven by a French driver "with an intuitive *flair* for country, something of the instinct of the Red Indian in picking up a trail or remembering a road he has once travelled," Major Arthur Griffiths has lately enjoyed a trip from London to Bath—a nearly straight run of 107 miles accomplished in one day—and in the November issue of *Blackwood's Magazine* he describes the outing in a very readable article full of historical incidents and absolutely devoid of excitement so far as the journey was concerned. That is the experience of most people who mount the motor-car in search of "copy"; instead of writing of hair-breadth escapes and of coming "within an inch of danger" they simply pursue their journey without incident. Thanks, however, to his wide reading, Major Griffiths was able to recall Claude Duval and the highwaymen of Hounslow Heath while the driver was repairing a puncture near Colnbrook, and to see beyond the present commercial importance of Reading into the past when abbots hung on its abbey gates and Parliament met in Biscuitopolis when London was



MR. GRETTON AND PARTY ON "IVEAGH" PHAETON.  
[Photo by] [Argent Archer, Kensington.]

plague-infected. Tales of old Berkshire country seats, of the hamlets nestling in the valley of the Kennet, of the families associated with Savernake, and of the bacon-curing business of Wiltshire occupy a few pages until the article concludes with a general review of Bath—in history and in the present.

**Stage Coach  
v.  
Motor-Car.**

A FEW reflections on the motor-car made by the writer testify to his sympathy with automobilism. The highest pace attained by the York House Coach which started from Bath on the Old Bath Road to London early in the century was eleven miles an hour; the Beaufort Hunt Coach starting from the "White Lion" (the site of the present Pump Room Hotel) was about a mile better. Major Griffith "maintained an easy thirteen miles, and could have doubled the record if allowed." He is convinced that there is nothing disagreeable about the motor-car, and declares the main obstacle to its more general adoption to be the want of skilled drivers, and suggests the establishment in this country of schools of instruction in motor-car driving. As public conveyances, and for commercial or agricultural purposes they will, he is sure, gain ground and be generally used within

the next few years. There is only one point upon which we disagree with the Major, who is apparently unaware of the progress lately made by British manufacturers, and imagines that the French have a monopoly of excellence. Before he next travels by automobile he should make himself acquainted with the English point of view.

### The Automobile in War.

THIS is a subject much to the front just now—on paper. The most satisfactory feature in connection with the recent discussions on the subject is the number of military men who are giving their opinion as to its probable value in warfare. Following the speech of Major Holden at the Automobile Club's dinner comes a courteous word of approval from Brigadier-General Macdonald, who, in delivering the opening lecture of the East of Scotland Tactical Society's session at Edinburgh, said: "Was it one of the war developments of the near future that there should be used mobile armoured vehicles not only on rails but on roads or even on open country, independent of long teams of horses, which were so extremely easily destroyed by shell? Vehicles were now being developed which, with a few gallons of oil fuel, could travel on roads 100 miles a day easily, carrying small calibre quick-firing guns and machine small-arm guns,



A VIEW AT THE RECENT DOVER MEET.

armoured against small-arm fire, eight of them not occupying more space on the road than one gun with its limber." Of course, their employment at the present juncture is, as we have already said, inadvisable, seeing that the men who would be placed in charge have had no experience of automobiles; but our next war will probably see great developments in this direction.

### In the United States Army.

IN the *Automobile Magazine* (New York) for November appears an interesting article on the subject by Mr. E. Emerson, of the U.S. Volunteer Cavalry, with illustrations of Cugnot's steam cannon of 1765, Serpollet's steam artillery and ammunition wagon, Major Davidson's automobile Colt gun, Pennington's autoram and battery, and the "war motor-car" invented by Mr. Simms. It appears that Adjutant-General A. D. Andrews is the foremost military champion of the automobile in America, and that some experiments have been made by the United States Signal Corps, under the personal supervision of General Miles. Some months ago the Signal Corps entered into a contract with the Fischer Equipment Company of Chicago to furnish two heavy delivery wagons and a light carriage, to be propelled by electricity from storage batteries. They were to be used in connection with the balloon service and experiments in wireless telegraphy. The heavy wagons were to be capable of carrying not less than 800 lb. besides the driver, and must run for twelve miles on one charging. They

may be converted into a Signal Corps station, and a switch-board is provided by means of which the entire output of the battery at 55 volts may be available for general service. These vehicles have lately been received in Washington after their efficiency had been tested at Fort Meyer. The equipment of the delivery wagons is sufficient to run them thirty miles without recharging, carrying a load of 1,500 lb. Independent motors are attached to each of the driving-wheels, and are arranged to develop 6 h.p. each on grades, or 12 h.p. for the entire wagon. The average speed is ten miles an hour. All the wagons are fitted with attachments for the use of horses, and that motive power can be used at any time. The batteries in such case are taken out, leaving additional freight room, and can then be used in connection with the field telegraph instruments, utilising every part of the vehicles at all times. The vehicles are to be equipped with searchlights when placed in field service.

### Automobiles for Municipal Work.

ALMOST every week we have the pleasurable task of referring to the increasing attention devoted to motor-vehicles by municipal authorities in various parts of the country. This week we are able to announce that the City of London Corporation, falling into line with other local bodies in the metropolitan district, has decided to give automobiles a trial, and has entrusted Mr. Carl Oppermann, of Clerkenwell, with the construction of two motor dust carts, to be propelled by electricity. Some time ago the City Surveyor of Birmingham recommended his Council to purchase a motor-vehicle for heavy work. This has now been in use for some months, and he reports a saving of fifty per cent. as compared with the cost of performing similar work with horse-drawn vehicles.

### "A Mechanical Horse."

SOMEWHAT of a novelty was shown by the International Motor Wheel Co., of New York, at an exhibition just held in that city in connection with the National Carriage and Harness Dealers' Convention. It is styled "a mechanical horse," and is described as a single powerful wheel supporting a  $3\frac{1}{2}$ -h.p. petrol motor and attachable with little change to any vehicle after the forward carriage has been removed. The two-cylinder motor is hung on one side of the wheel, while on the other side are two small petrol tanks of cylindrical form. No water-jacket is used, longitudinal radial ribs extending more than an inch from the cylinder on all sides. The drive is from a pinion on the motor shaft to a gear on the motor wheel. A friction clutch is provided to throw the "horse" in and out of gear, and a hand wheel governs the steering. The weight of the device, for which we are afraid we cannot predict a great future, is given as 350 lb.

### Livery Stables and Automobiles.

IN New York many of the livery-stable keepers have attempted to "make things awkward" for automobilists when touring by refusing to have anything to do with the care and storage of their cars. Such a policy is shortsighted and silly; for the livery-stable keepers cannot expect to retard the progress of a movement with so much power in it by refusing to find house room when required. Already retribution is near at hand, as the newly-formed American Automobile Club is seeking accommodation with other people, and the livery-stable keepers stand a good chance of losing business which will ultimately develop to large proportions. English livery-stable keepers should consider whether they should not provide for the needs of automobilists, and, in the erection of new premises or alterations to existing stables, whether they should not provide special buildings for the accommodation of motor-cars.



## THE AUTOMOBILE CLUB'S 1,000-MILE TRIAL.



A MEETING of members of the Standing Committee of the Automobile Club and of representatives of firms who intend to take part in this trial was held at the Club on Monday, the 20th inst. The matter of route was first discussed. Possibly the route will be somewhat as follows, but it will not be finally settled until

the secretary has been over the roads and visited the cities and towns concerned; he will probably start on this tour about December 14th. The dates are calculated on the supposition that it is found convenient to start at the end of the Agricultural Hall Exhibition:—

| 1900.   | Miles. |
|---|--------|
| Monday, April 23rd—London (the Club) to Bristol ... | 120    |
| Tuesday, April 24th—Exhibition at Bristol ...       | —      |
| Wednesday, April 25th—Bristol to Birmingham ...     | 85½    |
| Thursday, April 26th—Exhibition at Birmingham ...   | —      |

There were three proposals made as to the date of the trial, and the result of voting was as follows:—(1) Before the Agricultural Hall Exhibition—4 votes. (2) Between May 1st and June 15th—7 votes. (3) In September—1 vote. The trial will therefore be, if possible, between May 1st and June 15th; but it may be found expedient to make it commence on April 23rd.

All the representatives were in favour of there being an exhibition at Manchester. A vote was taken on the question of whether there should be exhibitions at both Liverpool and Manchester. Result:—12 votes in favour of Manchester only; against 1 vote in favour of Liverpool also. The route will be through Liverpool, if possible. In order to further shorten the duration of the tour, it was decided to hold an exhibition at Edinburgh but not at Glasgow, and that the route should be from Carlisle to Edinburgh direct. If the local press are well disposed, and proper arrangements can be made, there will be exhibitions at Bristol, Birmingham, Manchester, Leeds, Edinburgh, Newcastle-on-Tyne, and Sheffield. The majority were in favour of crossing Shap Fell, but the details of the tour were left in the hands of the Club.



Photo by]

THE AUTOMOBILE CLUB'S MEET AT SHEEN HOUSE, RICHMOND.

[Argent Archer, Kensington.

|  |              |
|--|--------------|
| Friday, April 27th—Birmingham to Manchester ...  | 80           |
| Saturday, April 28th—Exhibition at Manchester ...  | —            |
| Monday, April 30th—Manchester <i>via</i> Kendal, Ambleside, and Penrith to Carlisle ...                                      | 130½         |
| Tuesday, May 1st—Carlisle, <i>via</i> Beattock, Moffatt, Gordon Arms, and Peebles to Edinburgh ...                           | 100          |
| Wednesday, May 2nd—Exhibition at Edinburgh ...   | —            |
| Thursday, May 3rd—Edinburgh to Newcastle-on-Tyne ...   | 121½         |
| Friday, May 4th—Exhibition at Newcastle ...  | —            |
| Saturday, May 5th—Newcastle to Leeds ...   | 91½          |
| Monday, May 7th—Exhibition at Leeds ...  | —            |
| Tuesday, May 8th—Leeds, <i>via</i> Bradford, Harrogate and York (one hour's display at York) and Doncaster, to Sheffield ... | 105½         |
| Wednesday, May 9th—Exhibition at Sheffield ...   | —            |
| Thursday, May 10th—Sheffield to Northampton ...  | 98           |
| Friday, May 11th—Northampton to London (exhibn.) ...   | 67½          |
| Saturday, May 12th—Opening of proposed one week's exhibition of trial vehicles in London ...                                 | —            |
| <b>Total ...</b>   | <b>1,000</b> |

THE Hon. John Scott-Montagu, M.P., has been elected a member of the Automobile Club de France, and will act as the Club's delegate in Great Britain and Ireland.

MR. WILLIAM ENGELKO was, on Tuesday last week, summoned at the City Summons Court for leaving a motor-car unattended. Mr. Alderman Smallman imposed a fine of 10s. and costs.

THE motor-car seems to have lived down much of the prejudice of the public in the Eastern Counties at all events. As evidence of this Mr. Frank Morriss, of King's Lynn, informs us that one of his Daimler wagonettes was chartered on Saturday last to convey a wedding party to and from church in the quiet little village of Terrington.

At the annual meeting of shareholders of Messrs. Brampton Bros., Ltd., chain manufacturers, Birmingham, last week, the chairman stated that "although they could not at present make much out of the motor-car chain business, they were fully equipped to supply demands in this direction, and they hoped to see a considerable increase in the motor-car business in the country before long."



## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

**The Banquet to M. Rives.**

A VERY numerous gathering of members was witnessed on the evening of the 16th instant at the French Automobile Club on the occasion of the banquet offered to M. Rives to celebrate his recent nomination as a "Chevalier de la Légion d'Honneur." Speeches of felicitation were made by Baron Zuylen, Count de la Valette, and Count de Dion, after which the company was entertained to a very excellent concert, in which many well-known Parisian artistes took part.

**Fêtes in Belgium.**

THE military automobile fête which was announced to take place at Brussels on Tuesday next has been postponed until next spring, and in its place there will be held a special fête of decorated automobiles, in which some of the best known Belgian owners of motor-vehicles are expected to take part.

**High Prices for Racers.**

IN a recent interview M. Charron is said to have stated that the report that M. René de Knyff had sold the 12-h.p. Panhard car upon which he finished first in "Le Tour de France" for 66,000 francs was not correct, and that it was he himself who had disposed of one of his carriages at that figure. M. Charron has also addressed a letter to the *Vélo* in which he expresses doubt as to the accuracy of the recent statement that M. Albert Lemaître has parted with his well-known Peugeot racer for a sum between 66,000 and 70,000 francs.

**Automobiles for the German Army.**

I LEARN, on excellent authority, that as a result of the recent tests the German military authorities have ordered five large automobiles from the Daimler Motoren Gesellschaft of Cannstatt. Evidently Continental military authorities are prepared to give a thoroughly practical trial to what is regarded in many circles as a most useful military adjunct in the future.

**The 100 Kilometres Motor-Cycle Record.**

ANOTHER record for Béconnais! On the 15th instant at the Parc des Princes, Paris, he relegated to a back seat Gasté's figures for 100 kilometres, which had stood since October 16th last. Travelling at a very uniform pace Béconnais covered 67 kilometres 233 metres in the first sixty minutes, but then was troubled by a couple of slight mishaps which caused a total delay of six minutes. During the remainder of the journey, however, no incident disturbed the even tenor of his way, and upon completion of the 100th kilometre his time was ascertained to be 1 h. 34 m. 27 s., that is 2 m. 58½ s. less than Gasté's record. But for the two delays Béconnais' record would probably have been 88 minutes. As it is, however, 100 kilometres in 94 minutes is not bad travelling. I append a comparison of the times made respectively by the two chauffeurs:—

| Kilometres. | h. m. s. |        | h. m. s. |    |
|-------------|----------|--------|----------|----|
| 10 .. ..    | 0        | 9 5½   | ..       | .. |
| 20 .. ..    | 0        | 17 56  | ..       | .. |
| 30 .. ..    | 0        | 26 45  | ..       | .. |
| 40 .. ..    | 0        | 35 38½ | ..       | .. |
| 50 .. ..    | 0        | 44 25½ | ..       | .. |
| 60 .. ..    | 0        | 53 11½ | ..       | .. |
| 68 .. ..    | 1        | 5 46   | ..       | .. |
| 70 .. ..    | 1        | 7 32½  | ..       | .. |
| 80 .. ..    | 1        | 16 28  | ..       | .. |
| 90 .. ..    | 1        | 25 24½ | ..       | .. |
| 100 .. ..   | 1        | 34 26  | ..       | .. |

**The Marmande-Paris Race.**

ON Wednesday, the 15th inst., Bertin at length succeeded in making the journey from Marmande to Paris without experiencing any mishap of importance, albeit he finished three hours behind his scheduled time. Leaving Marmande at 3 a.m. and travelling by way of Ruffec, Poitiers, Châtellerault, Tours, and Orléans, he arrived in Paris at 6.55 p.m., making a record of 15 h. 55 m. for the distance of 640 kilometres, equalling an average speed of 40 kilometres per hour.

**Proposed Paris-Strasbourg Race.**

IT is announced that at an early date there will be held a meeting of representatives of the Automobile Club of Alsace and Lorraine and the Rhenish Automobile Club for the purpose of discussing the advisability of organizing for July next a grand motor-car race from Paris to Strasbourg and back. The meeting will be held at Mannheim.

**The Chainless Motor-Cycle Race.**

THIS very original race, promoted by *La Vie au Grand Air*, was contested on Sunday last over a route of exactly 100 kilometres in length, and scored a conspicuous success. Entries to the number of forty-five had been received, and of these the creditable proportion of thirty-five put in an appearance at the start. Of this number twenty-four competitors were placed in the class reserved for machines unprovided with a speed change gear, while the remaining eleven contested the race on motor-cycles fitted with two speeds. Each machine was required to carry two persons, the passenger being conveyed either in an "avant train" or trailing car. The chain had been removed from each cycle, so precluding the possibility of pedalling, and as the route included several fair hills the race provided a severe test of the capabilities of the machine, and the scheme also provided the first genuine motor-cycle race of the season, as all competing chauffeurs, whether strong or feeble, were placed on a perfect equality, and were entirely dependent upon their mounts and their skill in managing them. Strength of limb, skilful pedaling and endurance availed a competitor nothing in this race. The signal for departure was given shortly after mid-day at Chambourcy, a small village situated some three kilometres from Saint-Germain, and from the start Osmont quickly took the lead, followed by Béconnais, Baras and Gasté. The three latter very soon met with troubles, and all three were compelled to abandon the race. At the half distance (Vernon) Osmont was third, but on the run home he overhauled and passed the leaders, finishing the course in 2 h. 6 m. 18½ s., some 800 metres ahead of his nearest adversary. The official return was as follows:—First Category.—Without speed-change gear: 1, Osmont (quadricycle), 2 h. 6 m. 18½ s.; 2, Rolland (trailer), 2 h. 7 m. 41 s.; 3, Doree (trailer), 2 h. 10 m. 33½ s.; 4, Bardin (trailer), 2 h. 27 m. 25½ s.; 5, Demestre (quadricycle), 2 h. 29 m. 7½ s.; 6, Vonin (quadricycle), 2 h. 38 m. 47 s.; 7, Villemain (quadricycle), 3 h. 1 m. 46½ s.; 8, Bertin (quadricycle), 3 h. 27 m. 48 s.; 9, Whitechurch (quadricycle), 3 h. 53 m. 7 s.; 10, Mlle. Léa Lemoine (quadricycle), 3 h. 56 m. 55½ s. Second Category.—With speed-change gear: 1, Théodore (quadricycle), 3 h. 0 m. 50½ s.; 2, Millochau (quadricycle), 3 h. 24 m. 30½ s.; 3, Linzeler (quadricycle), 3 h. 37 m. 48 s.; 4, Guyenet (quadricycle), 3 h. 43 m. 16½ s.; 5, Teveste (quadricycle), 4 h. 3 m. 0 s.

**Motor-Cars in Italy.**

THE Italian Ministry of Public Works has appointed a Commission consisting of Comm. De Gregorio, Comm. Manganella and Cav. Paolucci, Rivieri, Vietri, and Ing. Monacelli, to draw up a series of rules and regulations regarding the running of automobiles in Italy.

## SCOTTISH NOTES.

### Wanted, a Cure.

I do not know whether chauffeurs south of the Tweed have been "favoured" with the blustering weather which has been the lot of the canny Scot for the past few weeks, but if so then they may sympathise with their Northern brothers. It is not the weather in particular, however, I wish to declaim against, but the action of the wind, which in its present tempestuous vigour has the unhappy knack of frequently blowing out the lamps of one's motor-car. I refer more particularly to Daimler vehicles with tube ignition. Of course, I can anticipate the reply of some automobilists to use electric ignition. True it is that the man who drives a car with electric ignition is not bothered in this way, but there are a great many cars at present in use fitted with lamps, and their owners are not presently prepared to change this system of ignition for the electric one. They would like, however, to learn of some arrangement by means of which this evil of burners being blown out might be obviated. A Scottish gentleman, who has driven a Daimler for over a year, says the one great drawback in his estimation is the frequency with which the burners go out, especially in windy weather. Only on Friday last I was speaking to another gentleman who had his lamps blown out six times in a journey of something under a mile. Of course it was blowing a regular gale on the occasion, and the car had to weather a storm which could by no means be put down as a typical rough night even in this rude northern clime of ours; but the fact remains that it often takes a very slight puff of wind to blow out one's burners, especially when going at a fair speed, and it has often occurred to me that an unperforated plate of some sort to fix over the one bored with air holes for ventilating purposes at present fitted to all Daimler cars might with advantage be slipped over the latter ones "when the stormy winds do blow." The sooner someone invents a simple but effective lamp protector the better will it be for the characters of a large section of drivers of tube-ignited Daimlers, who are apt to indulge in language of a most lurid description when called upon repeatedly, in wet and stormy weather, to get out of their wraps and come stumbling down from their comfortable perch to light up time after time.

### Educating the Horse.

A VERY sensible letter, regarding the educating of horses up to date—to wit, motor-cars—appeared in a Scottish evening paper the other day, from the pen of Mr. J. A. Todd. I think the plan suggested a good one and worthy the attention of all interested in the subject—and what automobilist is not? The following is Mr. Todd's letter:—

Ere another life be lost by horses taking fright at motors, let me suggest a plan by which the equine race might be educated up to modern times. The horse which for the first time is induced to pass the mighty flying motor may forget the lesson by the time the next has to meet it, especially as there is no time for him to smell the thing, the equine way of scenting danger or its absence. Could not motors be advertised to run between places, taking up passengers at points where it would pay? Horses might be brought to meet them daily, and the safest parts of the road, not slippery-stoned streets, chosen for acquainting them with such startling novelties. A few passengers would be induced to travel by the motors just to see the training. It would be interesting to see which horses need the greatest number of lessons, and whether it is better to approach the cars riding or driving.

### The Edinburgh Show.

MORE than one alteration is proposed in the laying out of the Waverley Market for the Edinburgh Cycle and Motor-Car Show, which is to be held in February next. It has been decided among other things to considerably increase the space devoted to "motor-cars in motion." Edinburgh is well ahead in this line, and the Show Committee have found that "motors" attract and pay.

"BROWN HEATHER."

## MIDLAND MOTOR NOTES.

By "HERCULES."

### Motor-Vehicles at the Cycle Shows.

IT is interesting to note that the motor-cycles and cars exhibited at the National and Stanley Shows this week have attracted a good deal of attention, and that on the second day many of them were ticketed "sold." The Midland firms may fairly claim to have had not the least success. And most of the visitors will acknowledge that these exhibits were of the first order, excellent in design, and finished in the smartest fashion. Most of the critics have compared the motors with those which were exhibited a year ago, and the result of their comparison is very favourable to this year's productions. In the Midlands it is impossible to escape the influence of the shows. No matter where one goes the principals are not to be seen; they are "off to the shows," and if they have returned they have to give a full and complete deliverance of his opinion respecting the shows and the motors exhibited. As far as can be gathered makers here are satisfied with the way in which their productions have been criticised by the public and the press generally, and believe that their expectations as to the success the industry will experience in 1900 will be realised.

### An Unusual Sight.

THE other day in Birmingham not a little amusement was caused by a mishap which occurred to a motor-cyclist. He was riding past the Prince of Wales Theatre when his attention was attracted by the shouting of some youths, and he then discovered that his engine was all ablaze, the petroleum from some cause or other having ignited. The motorist was in no way disconcerted, however, but quickly obtained some water and in a minute the mischief was repaired. In a short time he was able to resume his journey as though nothing had happened. The incident, of course, drew together a crowd of people, including many who "knew all about it" and who gave their advice gratis. They do not often have the opportunity of advising a motorist in trouble in the city—fortunately for the motorist in more ways than one.

### Motor-Cars and the Postal Service.

ONE of the new Royal Mail petroleum-spirit motor-vans was tested in the Midlands last week. I met it in the course of my wanderings, and the immense vehicle was running at a good pace. There was little noise, apparently no vibration, and the van was gliding along easily and well. The vans are large, heavy, and somewhat cumbersome—built, of course, to Government order—and it is a matter for surprise to many that they run so easily.

THERE are now three motor-vehicles in use in Ryde (Isle of Wight.)

MR. J. BURNS, 44 Berners Street, London, W., has, we learn, secured the sole British Agency for the Déchamps voiturette—a car of Belgian construction—illustrated and described in our issue of August 25th last.

MESSRS. MARSHALL & Co., of Clayton, Manchester, are proud of the success of one of their "Marshall" cars in the run to Brighton on Monday last week. They are certainly entitled to congratulation, seeing that it was the second car to reach Preston Park.

IN the present issue we give three illustrations reproduced from photos taken by Mr. Argent Archer, High Street, Kensington, W., at the Automobile Club's meet at Sheen House, Richmond, last week. We understand that he is willing to supply copies of these and other photos taken at the same gathering.

## CORRESPONDENCE.

THE CINEMATOGRAF ON TOUR WITH  
A MOTOR-CAR.TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am writing this week a day earlier than usual because we have a journey to-morrow (Wednesday) from Bellingham to Rothbury, over a very mountainous district, and therefore fear if I delayed I should not be able to catch this week's issue. To-day, I have had the pleasure of inspecting a new car belonging to Mr. Mitchell, a son of one of the partners of Sir W. Armstrong, Mitchell & Co., now known as Armstrong, Whitworth & Co., Ltd. It is a 5½-h.p. Daimler wagonette, very similar to ours, though not quite so large. On being brought here from Newcastle on Saturday, I hear that the car, although travelling light, stuck on a bank between Wark and Bellingham, known as Houstey's Bank. The same bank we safely negotiated with our full load on Monday, although the road was very wet and greasy; and Mr. Mitchell seemed greatly surprised that we had succeeded, where his car failed, without assistance. I begin to think my car is an excellent hill-climber, and I fancy that the new motor section of rubber tires by the Clincher people has a good deal to do with it. The only other journey we have had since I wrote you last was from Brampton to Hexham, about twenty-eight miles over a very good road, and concerning which I have no incident of importance to relate. Two weeks more will conclude the present tour, and at its finish I hope to send you full particulars of the entire route, mileage covered, motor-car spirit consumed, and other items that may be of interest to your readers.

Yours, etc.,

Bellingham, R.S.O.,  
Northumberland,  
November 21st, 1899.

T. J. WEST,  
*Manager of the Modern Marvel  
Co. (Ltd.), of Edinburgh.*

## THE MOTOR-CAR CLUB'S RUN TO BRIGHTON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I am absolutely ignorant—at present—as regards the movement which is to end with the motor-car's victory over the horse, and I must disclaim any knowledge of the difference which exists between one variety of self-propelled vehicle and another. But we are never too young to learn, and so when the other day an enthusiastic friend compelled me to attend at the finish of the great Brighton run I consented, and accompanied him. My friend, I have said, was enthusiastic, very much so—the sort of individual who writes on every opportunity to the magazines that favor the movement with news as to the iniquity of justices of the peace, the stupidity of the common horse, and the ignorance of the man in the street. For myself, I was pale but determined; the day was fine; we had lunched, and all was well. So we made our way up the Preston Road and waited some distance beyond the Park. Of course, the enthusiasm which inspired us had also made us two hours and three quarters too early. Then we sat quietly by the roadside. I smoked silently, and my friend babbled of muddy roads and enormous horse-powers.

A few scattered shouts from a group of loafers hanging round a public-house door, and two tricycles whizzed past bearing with them two faces fixed in the usual "ghastly frown." Hardly had the two riders reined in their snorting steeds when a wild yell was hurried past and a third engine of terror hurled on its ghastly course. All three now rushed in company to the appointed resting-place where certain persons of authority checked their fury, and all was peace. I was fortunate in hearing from one of these heroes that the run (exclusive of lunch, mark this!) was close on two hours. Therefore, as the start was made from Whitehall at 11 a.m. and it was now 3.30 p.m., the ceremony of luncheon at Reigate had occupied—but I forbear!

But now the road was one whirr of wheels, the Pilot Car, gorgeously caparisoned, had arrived—why "Pilot," since others had shown it the way? But of course I dare not ask for information from anyone: it might have been set down as ignorance, and I had begun to know.

All sorts and kinds of cars now began to arrive, puffing and snorting in the most peculiar fashion (this is quite original). The costumes worn were most chaste. Strangely enough, peaked caps were *not* the order of the day, and I only saw two fur coats. Gaiters were *de rigueur*, waterproof breeches were much worn, and anyone who knew had besprinkled himself plentifully with mud. It was an exhilarating spectacle. Now we were all photographed, myself in the front rank vainly endeavouring to look motor-wise, if I may coin the word.

All the time fresh arrivals were joining our happy throng. Policemen, awed at the sight of all this strength and majesty, were actually subservient, and grovelled before the conquering party. What an omen for the future! Soon it will be criminal to drive a horse, dangerous to walk; the tricycle will be supreme, the car will convey fame and reputation.

As for me, the spectacle was interesting but cold, and the crowd seemed benevolently inclined, though dirty. I cannot help thinking that some improvements must be made before the millennium, but I have no doubt that the millennium will come. Only let the victors have mercy, let them refrain from cruelty and oppression, and all will be well. So the layman wishes them good fortune, makes his bow, and leaves them.

Yours faithfully,

London, W., Nov. 18th, 1899.

"A LAYMAN."

## A GOOD PERFORMANCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—So much has been written as to the possibilities of motors for long distance riding that my experiences on the road from Manchester to London, and thence with the Motor-Car Club to Brighton and back again to Manchester, may be interesting.

Last July I purchased a Phébus-Aster motor-quadracycle, 2½ h.p., and have ridden the same almost daily ever since. On Saturday, the 11th instant, I started with Mr. Kenyon, of Manchester, from Alderley Edge, near Manchester, at 8 o'clock a.m., determined to get to London by road.

Lichfield, sixty miles from the start, was reached after exactly four hours' run on wet and heavy roads, and with a strong wind blowing. From Lichfield to Coventry the weather broke up and it rained very heavily, which compelled us to put up at Coventry for the night. We left Coventry at 3 p.m. on Sunday and arrived in London at 10 o'clock the same evening, being delayed by a bearing locking through the nut which locked same and side mudguard coming loose. The next day we started for Brighton at 11 o'clock with the rest of the guests and friends of the Motor-Car Club, and were among the first dozen who arrived in Brighton.

The roads from Manchester to Brighton comprise, as you are no doubt aware, very good and very bad surfaces and all kinds of grades, so that a fair idea may be formed of the ride, and it is a good test for any vehicle. The distance covered by us in three days was little short of 250 miles, and the double journey, of course, about 500 miles; and beyond changing the sparking plug once we had no trouble whatever.

It would be interesting to hear of other rides made by light motor-vehicle with a carrying capacity of two persons.

14 Stockton Road,  
Chorlton-cum-Hardy,

Yours faithfully,

J. A. BENNETT.

Manchester, Nov. 22nd, 1899.

We learn that the directors of the Caledonian Motor-Car and Cycle Company, of Aberdeen, have decided to allow the widow of the motor-car driver who recently met with a fatal accident, the sum of ten shillings per week for one year.

## Motor-Cars at the Cycle Shows.

**I** NTEREST at the November Cycle Shows in London this week—the National at the Crystal Palace, and the Stanley at the Agricultural Hall—has largely been centred on the automobile exhibits. At both shows a fairly large number of motor-cars, many of new design and construction, shown to the public for the first time, are on view, while quite a number of the leading cycle-making firms have now added motor-cycles to their articles of production, and have devoted a portion of their stands to an exhibit of the same. Dealing first with **The National Show** the bulk of the automobile exhibits will be found grouped together at the north end of the Palace.

The largest exhibit of motor-cars is undoubtedly that of the Daimler Motor Co., Ltd., and prominent among the vehicles on view is the new Parisian four-seated phaeton (Fig. 1), which made its appearance at the Automobile Club meet last week. This car, which has been built on the lines of the modern French racing cars, has a body built up of aluminium, this metal being also used wherever possible in the construction of the car to bring down the weight. The frame is built rather lower than usual;

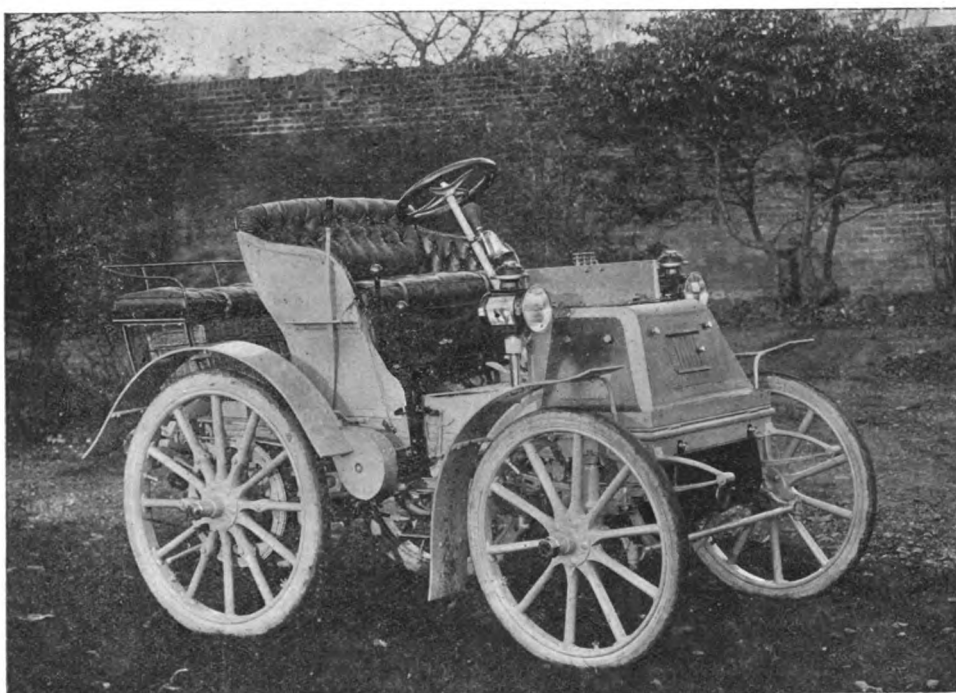


FIG. 1.—THE DAIMLER CO.'S NEW PARISIAN CAR.

Photo by]

[Argent Archer, Kensington.

the motor is of the standard Daimler type of 6 h.p., and is located under a bonnet in front. Four speeds are provided, ranging up to a maximum of 25 miles per hour. The petrol is pressure-fed to the motor, while the car is provided with a special accelerator acting on the engine governor, and manoeuvred by a foot pedal. Steering is controlled by a sloping hand-wheel, while the speed control levers are arranged on the outside of the body at the right-hand side of the driver. Special attention has been paid to the bearings, which are extra long, as also to the suspension of the car. The band brakes provided act on a drum forming part of the rear wheel sprockets. The road wheels are of light but strong construction, and are shod with stout pneumatic tires. The weight of the car is given as 18 cwt. Another car exhibited is the special Parisian phaeton to seat five, three on the front seat, and two at the rear, the latter sitting corner-wise. The car is fitted with the standard 6-h.p. motor, and has four speeds, the maximum being 25 miles per hour. It is fitted with pneumatic tires, and in other respects resembles the Parisian racing car above described, being provided with wheel steering, pressure oil feed, foot-pedal accelerator, wire band brakes on sprocket wheels, etc. The largest vehicle on the stand is a nine-seated omnibus of the type the Company is now supplying for public services in various parts of the country. It is provided with detachable top, with glass sides, the driver being also protected from the weather. The car has a 6-h.p. motor, four speeds (14 miles per hour maximum), lever steering, and solid rubber tires. Two examples of the Wyley phaeton are displayed, one of the standard pattern and one with pneumatic tires. The last named is also provided with special shoe brakes acting on the tires, and controlled by a hand wheel at the side. A new pattern, so far as the body is concerned, of the "Critchley" Car

has also attracted considerable attention. The car, which is adapted for two persons, has a 4 h.p. motor, the transmission being effected by belts. Three forward speeds, five, ten, and twenty miles per hour, are provided, as also a reverse motion. Steering is controlled by a sloping hand wheel, the belt control lever being mounted on a separate vertical standard. Band brakes are provided, as also a special shoe brake acting on the rear wheel pneumatic tires. The motor is provided with a pressure feed, and is fitted with an improved type of automatic lubricator, the "Drake." We may add that all the Daimler cars are now being fitted with water-cooling coils.

It has been known for some time past that, in addition to their motor-tricycles and quadricycles, the Beeston Motor Co., Ltd., Coventry, were engaged on the construction of a light two-seated motor-car. This has now been completed, and forms, owing to its neat and attractive appearance, the *pièce de résistance* at their stand. The car is provided with a 3½ h.p. air-cooled vertical motor of their own construction. It is located at the rear of the car and is fitted with electrical ignition. Two speeds—

the maximum being sixteen to seventeen miles per hour—are provided, the power of the motor being transmitted to the rear axle by spur gearing. A friction clutch is provided, by means of which the motor can be instantly cut out from the transmission. Steering is controlled by a hand-wheel on a vertical standard, the latter also carrying a second wheel by means of which the variable speed gear is manoeuvred. The frame is built up of channel steel, to which the body is bolted. The road wheels are of the cycle type with pneumatic tires. Two independent band brakes are provided, while the petrol tank is of a capacity sufficient for a run of about sixty-five miles. The weight of the car, of which we hope to give an illustration in a later issue, is about 4½ cwt. Turning now to the Beeston tricycles and quadricycles, quite a number of each are displayed, including the identical tricycle which recently went so successfully through the Automobile Club's 100 miles test. Several improvements and modifications have recently been incorporated in these machines. For example, in the contact breaker no platinum is now employed, while the sparking plug is provided with a plated steel shield. The exhaust box or silencer is not located on the rear axle as usual but is placed under the carburettor. Another new feature is to be found in the bearings, which can be now adjusted to a great degree of nicety. Most of the machines are fitted with electric ignition; one is, however, fitted with the Simms-Bosch magneto-electric device, while one of the motor-quadricycles is provided with a two-speed gear. The Beeston Company make a point of the fact that the whole of the parts of their machines are manufactured in their own works, and are showing specimens of the same in the rough.

A firm which makes its *debut* as an exhibitor of automobiles is Messrs. Dennis Brothers, of High Street, Guildford, who in addition to two "Star" vehicles are showing one car and several cycles of their own construction. The "Speed King" light doctor's car—as it is called—exhibited is not quite in a completed condition, but it is to be fitted with a 3-h.p. air-cooled De Dion motor located in the rear part of the vehicle (Fig. 2). Three speeds, 4, 10 and 20 miles per hour, are provided, the transmission being effected to the rear axle direct by spur gearing. The frame is of tubular construction, the body being adapted to accommodate two persons. Steering is effected by a lever at the right of the driver; the road wheels are of the cycle type, shod with pneumatic tires. Messrs. Dennis are also showing motor-tricycles and convertible motor-quadricycle; these are fitted with 2½-h.p. De Dion motors. The tricycle has a double bridge at back, while the ratchet is in the chain wheel on the back axle, so that the chain is not always running. The gearing is all enclosed in a light aluminium gear case filled with oil and grease. Two band brakes are fitted, which renders the machine completely under control. Other exhibits comprise a two-seated trailer, a new motor-tricycle saddle, and a collection of motor-car and cycle fittings and parts.

The Phébus-Aster motor-tricycles and quadricycles are being kept well to the front by Mr. Frank F. Wellington, 36 St. George's Square, Regent's Park, N.W., who has a number of these well-known machines on view, as also several front seat attachments for motor-tricycles. A neat pattern of a two-seated voiturette, constructed by the Phébus Co. in Paris and known as the "Automobilette," is also to be seen. This is a four-wheel car, with cycle-type wheels shod with pneumatic tires. The motor—a 2½-h.p. Aster—is geared to the rear axle through the medium of a two-speed gear. The frame is of tubular construction, the body being well suspended thereon by C springs, while the steering is controlled by a



sloping hand wheel. Ample brake power is provided, the weight of the car being about  $3\frac{1}{2}$  cwt. Mr. Wellington is also showing his new sparking plugs, which have already been referred to in these columns.

Two novel motor-vehicles—one a two-seated tricycle and one a motor parcels carrier—are to be found at the stand of the New Courier Cycle Co., Alexandra Street, Wolverhampton. As the two machines are identical, except that in one the front seat is substituted by a light parcels carrier, one description will suffice. The frame is of rectangular tubular construction; the motor—a  $2\frac{1}{2}$ -h.p. De Dion—which is located about the centre, drives, by spur wheels, a small counter-shaft, which is connected to the rear axle by chain gearing. A feature of the machine is that no pedals are provided; at the rear hub a special band brake free-wheel device is provided. This is operated by the left-hand foot rest, which is also connected with a hand lever. By means of this device the engine can be instantly put out of gear with the single rear road wheel, thus enabling hills to be "coasted." To start the motor, the band brake of the drum is applied, the electrical current switched on, and the machine pushed a short distance; immediately the motor is in operation, the band brake is released, thus allowing the engine to run free until the driver is ready to start. After mounting, the left foot pedal is pressed down, applying the band brake device at the rear, and completing the connection between the motor and the rear wheel. A second band brake is provided on the opposite side of the rear hub. Steering is controlled by a bar with vertical grips, on the top of the right one of which the contact breaker is mounted in such a way that it can be moved by the thumb, thus affording a rigid grip in place of the one usually employed on tricycles. The machine is purposely only speeded up to about fifteen miles per hour, but the makers claim that it will maintain this speed even up ordinary hills. The weight of the machine is stated to be a little under 2 cwt. We hope to illustrate the new Courier "Motoret," as it is called, in a subsequent issue.

A new firm to the automobile world is the Alldays & Onion's Pneumatic Engineering Co., Ltd., of Great Western Works, Birmingham,

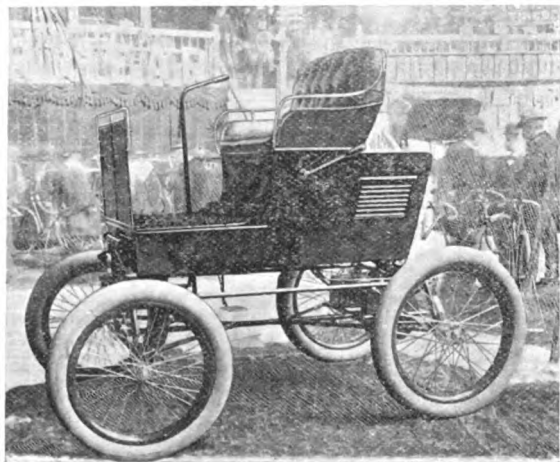


FIG. 2.—THE DENNIS LIGHT DOCTOR'S CAR.

who are showing a four-seated petroleum-spirit motor-car of novel construction (Fig. 3). The motor and mechanism is all mounted on a stand and frame to which the "body" is bolted. The latter is very roomy, giving plenty of leg room and also ample accommodation for luggage, rendering it useful for touring purposes. The motor is of the horizontal type of 7 h.p.; it has two cylinders arranged in such a way that the piston rods actuate a central crank shaft. The cylinders are fitted with water-jackets, while the ignition—electrical—is of a special kind, both the secondary and primary currents being connected up to the sparking plug so as to ensure a certain spark. The carburettor is of the spray type. The engine is located transversely at the rear of the car and actuates through the medium of a friction clutch a longitudinal shaft extending to the front end of the vehicle; the latter carries the variable speed gear—three speeds and one reverse motion being provided. It consists of a series of spur wheels, any one of which may be brought into gear by a single handle with corresponding spur wheels on a small parallel shaft. In examining the variable gear we noted that one of the pinions—that giving the low gear—is also employed in the reverse motion; by moving it further along the shaft it disengages from its corresponding low gear wheel and comes into mesh with the reverse motion wheels. The long central shaft terminates under the fore-part of the car in a bevel wheel which gears with a corresponding wheel on an intermediary shaft. The latter carries a belt pulley and is connected by a long crossed belt to a second intermediary shaft located above the rear differential axle, the connection with the latter being effected by spur gearing, the use of chains being in this way avoided. The road wheels, which are mounted on roller bearings, are of the cycle type, with solid rubber tires, while the steering wheel is mounted on the standard at the right of the driver. Two foot pedals are provided, by means of one of which the clutch can be instantly thrown out, while the other controls a band brake on the counter-shaft. Band brakes

actuated by a hand lever acting on the rear axle are also provided. The water tank has a capacity of ten gallons, the circulation being maintained by a small pump driven by friction off the motor fly-wheel. A water-cooling coil is provided in the fore part of the frame. The weight of the car is given as 15 cwt., and a useful feature of the vehicle is the accessibility of all the working parts for inspection. The Alldays and Onions Co. are also showing a motor-quadracycle fitted with De Dion motor and two-speed gear.

Messrs. Roots & Venables, of 100 Westminster Bridge Road, S.E., have on view the only heavy oil motor-car (Fig. 4) in the exhibition.

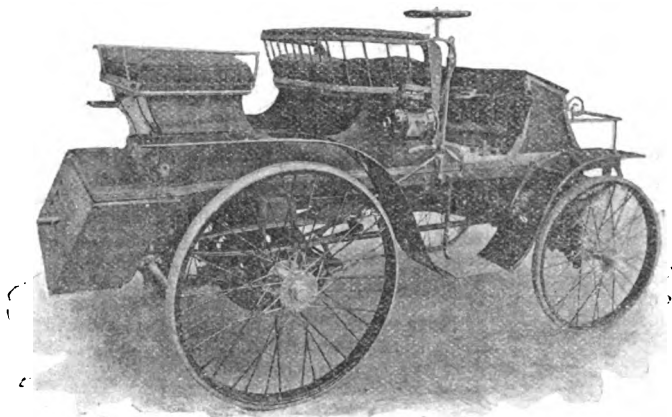


FIG. 3.—THE ALLDAY AND ONIONS' MOTOR-CAR.

This is a neat two-seated vehicle, fitted with a 3-h.p. horizontal motor using ordinary petroleum oil. Two speeds are provided, three and twelve miles per hour, the motor being chain-gear to a counter-shaft, from which to the rear axle the power is again transmitted by chains. A novel feature in this car is the water-cooler, which consists of a long spiral of copper tubing, inside which rotates the fly-wheel of the engine. The car weighs, complete, about 6 cwt., and measures 7 ft. 4 in. by 4 ft. 11 in. It is fitted with cycle-type wheels and solid rubber tires.

Since the "Star" motor-car of the Star Motor Co., of Wolverhampton, was first brought to the notice of the public in July last it has been considerably improved, both as regards construction and design, as will be seen from an examination of the two vehicles on view. One is finished in varnished light birch wood, while the other is painted in olive green and black, and yellow lines, with upholsterings to match (Fig 5). The cars, although really only intended for two persons, are provided with an additional seat in front for one or two persons. They are fitted with a  $3\frac{1}{2}$ -h.p. single-cylinder horizontal motor, two speeds, by belts, and are claimed to be capable of mounting all ordinary gradients with a full load. One of the novel features is the employment of a new form of spray-type carburettor, the claim for which is its regularity of working, obviating the employment of a mixing valve. The new carburettor is so arranged

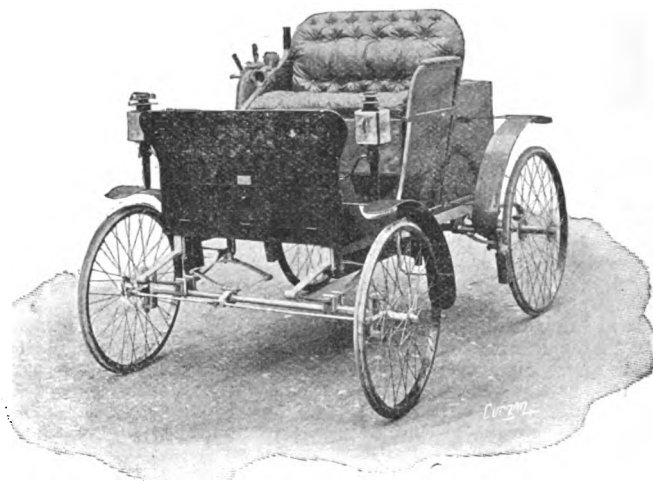


FIG 4.—THE ROOTS AND VENABLES' HEAVY OIL CAR.

that it can be quickly detached if necessary, and its location renders the sparking plug more accessible than usual. A new device has also been adopted for the adjustment of the chains. Altogether the "Star" car has been considerably improved, and, in view of the recent successful trials with one of this type, it should meet with a full share of popularity.

On account of the novelty of design, the vehicles exhibited by the "P. T. S." Motor Co., of 1 Chiswell Street, Finsbury, E.C., have attracted considerable attention. The "P. T. S." auto-cycle has a motor of from  $1\frac{1}{2}$  to 2 h.p., and it is so arranged as to form the lower cross member of the frame of the tricycle; the petrol tank and carburettor forming the top member. It is adapted for two persons. With this load



its speed can be regulated from two up to thirty miles per hour on fair roads, and it can, it is claimed, average fifteen miles per hour on bad roads, and mount a gradient of 1 in 5. A novelty at the stand is a light trailing lorry with pneumatic tired wheels attached to one of these machines. The "P. T. S." Co. are also showing the neat two-seated voiturette referred to in our last issue. It is of German construction, being constructed under Heine-Wegelin patents, and is provided with a two-cylinder motor of  $3\frac{1}{2}$  h.p., partially air and partially water-cooled; it is fixed under the seat and started by means of a lever and a ratchet quadrant from the seat. The ignition is electric, the spark being obtained from an electro-magnet arrangement. Two brakes are available: a band brake on the driving shaft and shoe brakes operating on the rear wheels, which are 32 in. diameter. The car measures over all 6 ft. by 3 ft. 6 in. by 4 ft., and weighs 6 cwt. Three speeds are provided, the maximum speed being twenty-five miles per hour. The car, which has been named the "Liliput," is provided with a cooling coil in front. An illustration of the vehicle will be given in a later issue.

A neat pattern of two-seated voiturette of French construction is that shown by the Automobile Union, of 39 Avenue des Champs Elysées, Paris. It is known as the "Esculape," and is propelled by a  $2\frac{1}{2}$ -h.p. De Dion motor; a feature of the latter is, however, that in addition to the radial discs to the cylinder the explosion chamber is furnished with a water-jacket. The car is provided with a two-speed gear, cycle-type wheels with pneumatic tires, and weighs only about 400 lb. We hope to illustrate the car in a subsequent issue.

The International Motor-Car Co., of High Road, Kilburn, N.W., is another concern making a very large display. In addition to a light delivery van and about six of their well-known International cars on Benz lines to seat two and three persons, the Company are showing several frames fitted with motors and transmission gear complete, which comprise several special features. It has often been complained of by exhibition visitors that

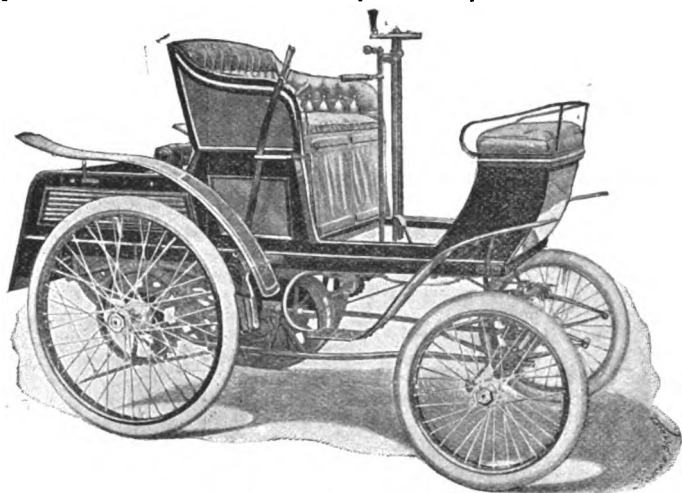


FIG. 5.—THE "STAR" MOTOR-CAR.

the working parts of automobiles are not exposed to view, but nothing can be said against the International Company on this score. The cars are now too well known to need a lengthy description at this time, so we devote the space at our disposal to the brief mention of the new frames and motors that are now being adopted, and which bear the legend "Made in England." The first we inspected was one intended for a heavy car or van; it is fitted with a 6-h.p. single-cylinder motor mounted on a channel steel and wood frame. The combustion chamber and the cylinder of the engine are cast in one piece, the sparking plug being located on the top, so rendering it readily accessible. The exhaust valve rod carries a roller at its end, and is directly actuated by the cam. Three speeds, by means of belts working on fast and loose pulleys, are provided, as also a Crypto hill-climbing gear. A new feature is the arrangement of the pedal controlling the band brakes, the belts being all shipped on to the loose pulleys on the application of the brakes. This under-frame is fitted with wooden artillery wheels and solid rubber tires, and weighs without body about 9 cwt. An underframe for a light two-seated racing-car next attracted our attention. This is built low, and is provided with a  $5\frac{1}{2}$ -h.p. single-cylinder horizontal motor, two speeds, wheel steering, cycle-type wheels, and pneumatic tires. Two band brakes are provided, while a special device, permitting the chain to be rapidly adjusted, is fitted. The motor and mechanism is mounted on a channel steel frame, the weight, exclusive of the body, totalling a little over 4 cwt. Passing now to what may be considered the principal exhibit on the stand we come to what the Company term the "Vibrationless" car (Fig. 8). The vehicle is shown minus the body in order that the motor may be closely inspected. This is a two-cylinder one of 9 h.p., the cylinders being so arranged that the piston rods actuate a central crank shaft. The cylinders are water-jacketed, special attention having been paid to the question of preventing leakage of water into the cylinder. The ignition is electrical, the explosions taking place alternately in the cylinders. The speed of the motor is 1,100 revolutions per minute, the cranks working in an oil-containing case. No asbestos is used in the ignition plugs metallic joints only being employed. The vehicle, which can be fitted with a body to accommodate either two, four or six persons, is

provided with three forward speeds, a hill-climbing gear, and a reverse motion. A new departure is the method adopted to warm the petrol in the carburettor, this being effected by a steam pipe from the water condenser. Wheel steering is provided, while all the belt control levers are mounted on the steering standard. The wheels are of the cycle type with strong axles working on  $\frac{1}{2}$ -in. balls, the tires being of solid rubber. A band brake is fitted, this not acting on the rear axle as usual but on a drum on the counter-shaft. Altogether the International Company have an interesting and instructive exhibit.

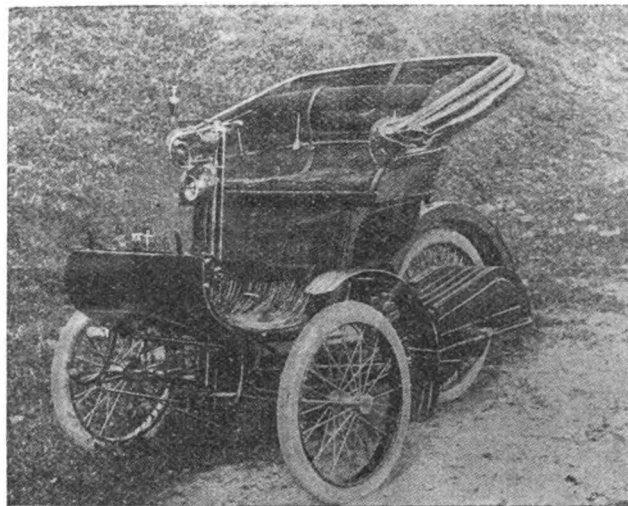


FIG. 6.—THE "SWISS MOUNTAINEER" CAR.

An attractive looking, light, four-seated car, of new design, is exhibited by the Delecroix Motor Syndicate, Ltd., of 15 Angel Court, Throgmorton Street, London, E.C. It is fitted with a single-cylinder vertical motor of  $3\frac{1}{2}$  h.p. located under a "bonnet" in the fore-part of the frame. Great attention has been devoted to the cylinder-cooling arrangements, there being radial discs and a fan, and also a special device by means of which cool air is claimed to be introduced into the inside of the cylinder. The ignition is electrical, while three forward speeds as also reverse motions are provided. The longitudinal shaft, which carries the variable speed gear, terminates in a bevel wheel meshing with a corresponding wheel on the counter-shaft, from which the power is transmitted to the rear axle by a single chain. A friction clutch is provided by means of which the motor can be instantly cut out from the transmission, the hand lever controlling the clutch also being connected up to the band brake on the differential gear. A foot pedal actuating band brakes on the rear axle is also fitted. The car is suspended by easy springs on the frame; the steering is by means of a bar, while the wheels are of the cycle type with pneumatic tires. It will, it is claimed, climb 18 per cent. gradients, and weighs complete 480 lb.

The "Swiss Mountaineer" car exhibited by Messrs. Hupfeld and Company, of 7 Whittington Avenue, Leadenhall Street, London, E.C., although new to this country, has been on the market for some time on the Continent. As the name implies, it is of Swiss construction, being built by the Patent Motor-Wagenfabrik "Rapid," of Zurich. As will be seen from the illustrations (Figs. 6 and 7) the car has only three wheels, and is adapted for two persons. The frame is of tubular construction; the engine is of the horizontal type with water-jacket and electrical ignition. At a speed of 800 revolutions it develops 4 h.p. Two speeds are provided, the power being transmitted by a single belt working on the fast and loose pulleys A B C. It will be noticed that the latter are of

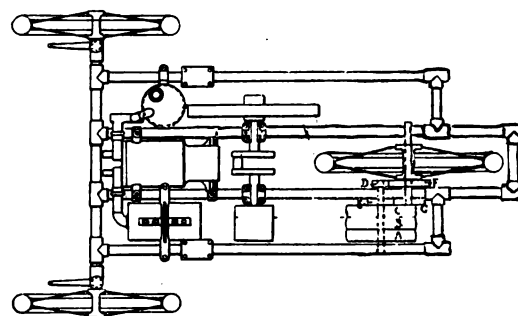


FIG. 7.—PLAN OF "SWISS MOUNTAINEER" CAR.

equal size; each are, however, mounted on distinct sleeves provided with pinions gearing with corresponding pinions on the axle of the rear wheel, the power being transmitted through that pair of pinions connected with the pulley, on to which the belt is shipped, either A or C; when the belt is on the pulley B the motor is entirely disconnected from the rear road wheel. The car is mounted on easy springs, cycle type wheels and pneumatic tires being also adopted. The water tank is located over the

rear wheel, it being also made to serve as a mud guard; the belt and variable speed gear is enclosed in a dust proof case, which can be quickly removed for inspection purposes. The car measures 6 ft. by 3 ft. 8 in., and weighs about 5 cwt. It can, it is claimed, attain a speed of twenty-five miles per hour.

Ever since the appearance of the Whitney steam car in July last, considerable interest has been centred on the light steam vehicles hailing from America. The Stanley steam car, which is exhibited by the "Locomobile" Company of America, who have now established themselves in this country at 52 Sussex Place, South Kensington, S.W., has this week been the centre of an interested throng of inquiring visitors. We have already published some details and a general view of the Stanley

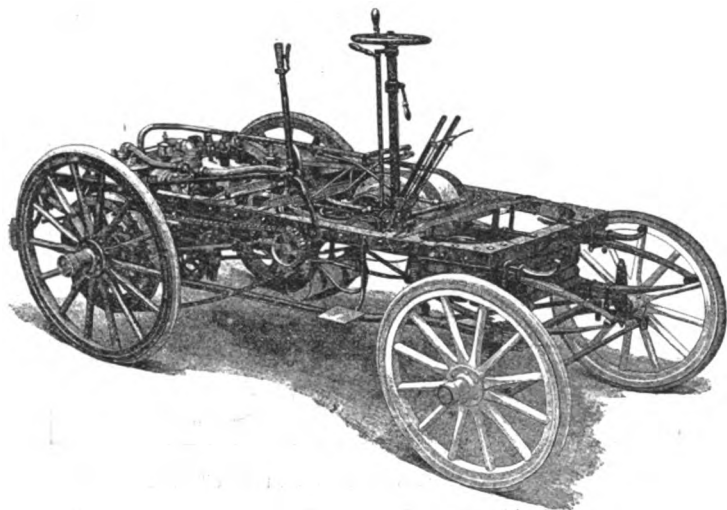


FIG. 8.—THE INTERNATIONAL MOTOR CO.'S NEW UNDER-CARRIAGE AND MOTOR.

car (see *Motor-Car Journal*, May 19th last). There are many points of interest in the Stanley car, a complete description of which pressure on our space this week compels to hold over until a subsequent issue.

Considerable interest has been displayed during the week in the Wearwell two-seated car shown by the Wearwell Cycle Co., Ltd., Pountney Street, Wolverhampton. The frame is of tubular construction, well staged; the motors, two in number, being arranged in the centre under the seats. The engines are of the autotype on De Dion lines, and together indicate  $4\frac{1}{2}$  h.p. They are fitted with radial discs for cooling purposes and electrical ignition. Three speeds are provided, the motors driving by spur-gearing on to a counter-shaft, from which to the rear axle the power is transmitted to the rear axle by a single central chain. Steering is controlled by a hand wheel on a vertical standard, a useful feature being that the height of the hand wheel from the floor of the car can be adjusted. A foot pedal controls a band brake on the rear axle; the wheels are of the suspension type with pneumatic tires. The weight of the car is given as 5 cwt.

Messrs. Allard & Co., of Earlsdon Works, Coventry, are apparently devoting considerable attention to the construction of motor-tricycles and cars. The tricycle is fitted with a  $2\frac{1}{2}$ -h.p. motor of their own construction. It has large radial discs for cooling and electric ignition. The cylinder has a 3 in. bore and 3 in. stroke, and exceptionally large fly-wheels. The cylinder head is screwed on to the top of cylinder, thus doing away with the old form of joint entirely. A new departure, too, is the adoption of the Longuemare carburettor. A new car on Benz lines—the "Allard Express" is also to be seen. The engine is of the horizontal single-cylinder type, of  $4\frac{1}{2}$  h.p., with water-jacket and electric ignition. It is located in the rear portion of the car, and transmits its power by belts to a counter-shaft, the latter being connected by chain gearing to the rear axle. Two speeds, eight and twenty miles per hour, are provided. The wheels are of the cycle type, with pneumatic tires, while the steering is controlled by a bar. Two band brakes are provided, as also two shoe brakes acting on the rear wheel tires. The weight of the car is between 10 and 12 cwt. Another new car is the "Allard Rapid." This is arranged to carry two persons, the "body" being mounted by strong springs on a tubular frame. The motor, a single-cylinder vertical one of 3 h.p., is fitted with radial discs around the cylinder and a water-jacketed explosion chamber for cooling, and electric ignition. It is located at the front part of the frame, and is connected by spur gearing to a counter-shaft, from which the power is transmitted by belts working on fast and loose pulleys direct to the rear axle. Two speeds are provided, the maximum being twenty miles per hour on good level roads. The car, which is fitted with cycle-type wheels and pneumatic tires, weighs about 5 cwt. A noticeable feature is that the steering bar and belt-control gear are mounted on vertical standards fixed just outside the footboard at the right of the driver.

It was announced some time ago that the Riley Cycle Co., Ltd., of Coventry, had taken up the construction of motor-tricycles and quadricycles, and the sample of each exhibited appear to be very creditable productions. The Company have adopted the De Dion  $2\frac{1}{2}$ -h.p. motor and are fitting the free-pedal clutch in the back axle, so that the chain is only in motion when the rider is pedalling.

Another Coventry concern to take up the construction of motor-tricycles and quadricycles is the Progress Cycle Co., Ltd. The machines exhibited by this firm are well worthy of inspection. The company are employing an English-made De Dion motor of  $2\frac{1}{2}$  h.p. A feature in the quadricycle is the special brake with which it is fitted. This is a rim brake acting on both the rear wheels and controlled by a foot pedal within convenient reach of the rear rider's heel. The device, which so far as we remember is new to us, appears very effective.

The Cycle Components Manufacturing Co., Ltd., of Birmingham, are showing a couple each of well-made motor-tricycles and quadricycles, in which the motor is located behind the rear axle. Two specimens of the motor are also shown, one fitted with tube and one with electric ignition.

Motor-tricycles and quadricycles are also shown by the Coventry Eagle Co., Ltd., Coventry (English-made De Dion motor); the Dorman Engineering Co., Ltd., Northampton; the Chinnock-Davis Manufacturing Co., Penge, S.E.; and Messrs. Perry & Co., Ltd., Birmingham.

Messrs. Brampton Bros., Ltd., of Oliver Street Works, Birmingham, have on view specimens of their block and roller chains for motor-cars. These are now so largely used by motor-car builders in this country and on the Continent as to render any lengthy description unnecessary. Specimens of the "Multispiral" saddle for motor-tricycles are also displayed. Motor-car chains are also shown by the Birmingham Small Arms Co., Ltd., Small Heath, Birmingham; Hans Renold, Manchester; and the Coventry Chain Co., Coventry.

A very large display of accessories for motor-cars and cycles is made by the Southern Motor-Car Co., of 59 Brixton Road, S.W. We have not space to mention all the articles shown, but attention may be drawn to a new combined plug and current interrupter for the handle-bar of motor-tricycles, the Didier two-speed gear, a new motor-car hub—fixed in position without necessitating the use of a cottar pin and a new wire for the sparking plug, with unbreakable ends. The stand is full of interest to chauffeurs.

The Schweinfurter Präzisions Kugel-Lager Werke (Fichtel & Sachs), of Schweinfurt, Bavaria, display a large range of their productions in the way of wheels, hubs, and axles for motor-cars and cycles. The Company are making automobile wheels suitable for vehicles capable of carrying loads up to 8 tons. Ball-bearing hubs and vertical ball-bearing pivots for steering wheels are another speciality of this Company, whose exhibit is one of considerable interest to motor-car builders.

The Presto Gear Case and Components Co., Ltd., Frederick Street, Wolverhampton, are making a speciality of the manufacture of water and petrol tanks, silencers, carburettors, wheels, springs, etc., for motor-cars and cycles, and are displaying a collection of their productions in this direction.

Another firm to enter the lists of concerns making a speciality of motor-car and cycle accessories of every kind, is Mr. H. Waterson, of Albert Road, Aston, Birmingham, at whose stand everything from a sparking plug to a car-body may be inspected.

Motor parts and accessories, such as saddles, lamps, bells, horns, tire pumps, spanners, balls, lubricators, etc., are also shown by a number of

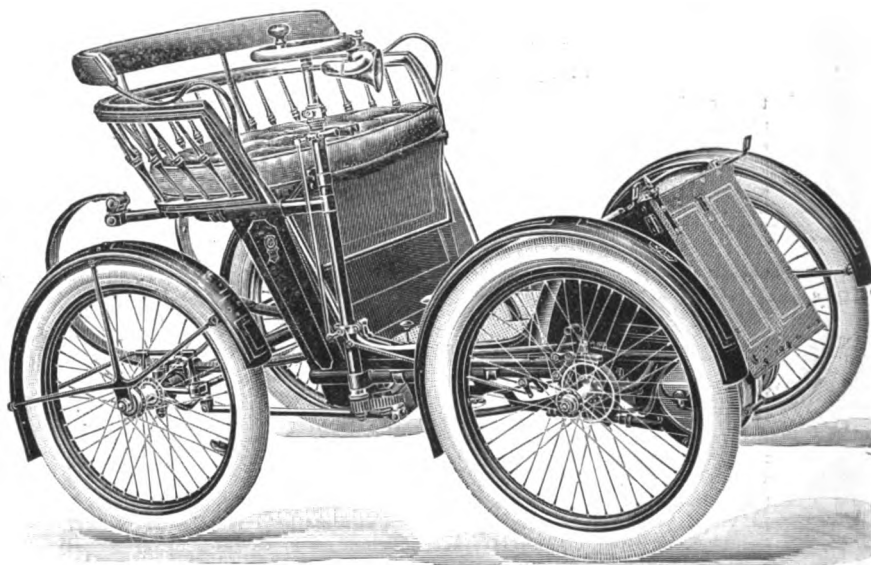


FIG. 9.—THE HUMBER "SOCIABLE QUAD." CAR.

firms, including Messrs. Levison & Steiner, Ltd., 43 Tabernacle Street, London, E.C.; Mr. Ernest H. Hill, Beta Works, Sheffield; the Angular Hole Machine Co., Ltd., Dashwood House, London, E.C.; the Auto Machinery Co., Ltd., Read Street, Coventry; Messrs. Rotherham and Son, Coventry; the Raglan Cycle and Anti-Friction Ball Co., Ltd., Coventry; Messrs. Perry & Co., Ltd., Birmingham; Messrs. J. Harrison and Sons, Kensington Works, Birmingham; and Messrs. Edward Lycett, Ltd., High Street, Deritend, Birmingham. A very neat and powerful light-giving oil lamp for automobiles is shown by Messrs. Coomb Bros., Ltd., of Toledo Works, Birmingham. The lamp is fitted with a double-compound lense, and will burn for sixteen hours with one charge of oil.

Pneumatic tires for motor-cars and cycles are exhibited by quite a number of firms, including the Dunlop Tyre Co., Ltd., Coventry; the Amalgamated Pneumatic Tyre Co., Ltd., of Parkside, Coventry; the Clipper Pneumatic Tyre Co., Ltd., Aston Cross, Birmingham; the North British Rubber Co., Ltd., Edinburgh; and the Cycle Components Manufacturing Co., Ltd., Birmingham. Solid rubber tires for motor-vehicles are shown by the London and Provincial Rubber Co., of 46 Bishopsgate Street Without, London; the North British Rubber Co., Ltd., Edinburgh.

### THE STANLEY SHOW.

As at the National Show, the motor-exhibits at the Agricultural Hall are for the most part grouped together, although motor-cycles, etc., will be found at many of the stands in the body of the hall.

A large display is made by the Motor Manufacturing Company, Ltd., of 47 Holborn Viaduct, E.C. One of the most attractive vehicles on the stand is the "Princess" two-seated car, which, fitted with a hood and solid rubber tired cycle wheels, forms a very elegant turn out. An example of the "Lynton" nine-seated motor-waggonette and one of the "Hampton" nine-seated char-a-bancs, both fitted with the standard 5½-h.p. Daimler motor, have come in for a large amount of attention during the present week. We also learned that a very large char-a-banc capable of carrying no less than sixteen passengers and fitted with a 10-h.p. motor constructed at the Company's works in Coventry, was expected to put in an appearance before the Show closes. Other exhibits of the Motor Manufacturing Company comprise specimens of their English-made 2½-h.p. De Dion motors, and of tricycles and quadricycles fitted with the same, the Werner motor-bicycle illustrated in our last issue, and one of the motor-tandem bicycles on which many cycle records have been broken during the past year or two.

A very interesting display of motor-cars and cycles is that made by Messrs. Humber & Co., Ltd., Coventry. To deal first with the cars, Fig. 9 shows the "Humber M.D. Sociable Quad. Motor." This is a light two-seated car, weighing complete only 3½ cwt. The motive power is supplied by a 2½-h.p. De Dion motor, located in a perforated metal case in the front of the car in such a position that the air has free access to the cylinder and combustion chamber. The ignition is electrical, while two speeds are provided, the variable speed gear wheels being always in mesh, but only in operation when the low gear is thrown in. The motor transmits its power by spur wheels to the front axle, steering being effected by a hand wheel mounted on a standard at the right-hand side of the car and acting on the rear wheels. A novel device is provided to start the motor from the driver's seat; this is effected by raising the steering hand wheel several inches in the standard. This disengages the hand wheel from the steering gear, and by giving it a few turns the engine is quickly started. The variable speed gear is controlled by a foot pedal. Ample brake power is provided, while the "body" is comfortably sprung on C springs. The car, which measures 6 ft. 3 in. by 2 ft. 10½ in., can, it is claimed, attain a speed of twenty-five miles per hour.

One of the neatest cars in the exhibition is the "Humber" two-seated phaeton, of which we regret we are unable to give an illustration. The engine is of the horizontal type of 3 h.p.; it is fitted with electric ignition and radial discs for cooling purposes, the location of the engine, with the combustion chamber to the front, in the fore part of the frame, enabling air to have free access to the cylinder. Three speeds are provided, the power of the motor being transmitted by belts to a counter-shaft at the rear, and from the latter to the rear road axle by spur gearing. The wheels are of the cycle type, fitted with pneumatic tires, while the steering is controlled by a hand wheel acting on the front wheels. The car measures 7 ft. 4 in. by 4 ft., and weighs 5 cwt.; it can attain any desired speed up to a maximum of twenty miles per hour.

The "Humber" four-seated car is a strange-looking vehicle; it, however, possesses several novel features, as the following brief description will show. The motor is of the single-cylinder horizontal type of 8 h.p. It is located under the centre of the car, and is fitted with electric ignition and a water-jacket to the cylinder, a circulating pump and cooling coil being also provided. The car is furnished with three speeds and a reverse motion, the power of the motor being transmitted by belts to a counter-shaft at the rear and from the latter to the rear axle by spur gearing. The engine and transmission mechanism are mounted on their own under-frame, which is provided with special springs, while the "body" is independent and is carried by carriage springs on the axles. By this means vibration is claimed to be reduced to a minimum. A maximum speed of nineteen miles per hour is provided for, while ample brake-power is available, there being a band brake on the rear axle actuated by a foot pedal and tire brakes controlled, by a hand wheel at the side, by the driver or by foot pedals by the rear passengers. The car is furnished with wheel steering and pneumatic tires, and weighs complete 17 cwt. Other exhibits at this stand comprise three motor-tricycles and three quadricycles of high-class finish.

Two examples of the Rouxel voiturette—one to seat two and one to accommodate three persons—are shown by Robertson's Autocar Agency, Kelvingrove, Woodstone, Peterborough. An illustration and description of this neat little car was given in our issue of September 29th last, to which our readers are referred for further particulars. We may mention, however, that these cars are propelled by a 2½-h.p. Aster motor, and that they can attain a speed of twenty-five miles per hour. An example of a new vertical petrol motor—the "Abeille" is also shown by this concern, who have obtained the English agency for the new engine, which we hope to illustrate in an early issue.

Another light two-seated car which has been greatly admired during the past week is that shown by the Accles-Turrell Co., of Hclford Works,

Perry Bar, Birmingham. As, however, it was described by our Midland Correspondent in the issue of Sept. 15th last, it is only necessary for us to mention that it is fitted with a 3-h.p. water-cooled motor, three forward speeds and reverse motion and belt transmission. The car is capable of attaining a speed of twenty miles per hour, and with wheel steering, pneumatic-tired wheels, and a well suspended body, it should soon become a popular vehicle. Messrs. Accles-Turrell are also showing examples of their 1½-h.p. vertical air-cooled motor, 3-b.h.p. horizontal water-jacketed engine, special sponge carburettor, etc.

The Automobile Association, Holland Park Avenue, Notting Hill, W., make as usual a very large display of motor-cycles, trailers, motor-cars, and accessories of every kind. As all the vehicles on view are already fairly well-known to our readers, they having already been described in this Journal, we will content ourselves by briefly mentioning their names. The cars include the well-known Orient Express, Lynx, Mors, Hercules, and the Waverley electric "run-about." The framework of the running gear of the latter car is of tubular construction, with brazed joints. All wheels have ball bearings, wire spokes, and pneumatic tires. All gears are carefully covered, amply protecting them from dust and water. The motor shaft is geared directly to the two rear wheels; each rear wheel is made to revolve independently of the other by compensating gears placed in line with the motor shaft. The electric motor is of 1½ h.p. A band brake, operated by a pressure of the foot upon a stem projecting through the floor of the vehicle, is provided, which will, it is claimed, stop the vehicle in about its own length at full speed. The car is speeded to a maximum

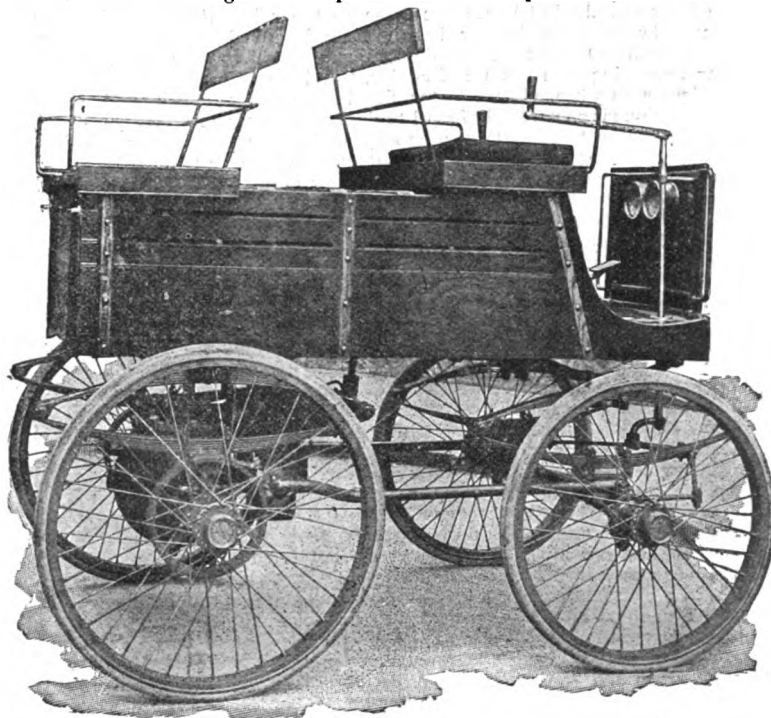


FIG. 10.—THE OPPERMANN ELECTRICAL DOG-CART.

of fourteen miles per hour, while the accumulators have a capacity sufficient for a run of about thirty-five miles on one charge.

The popular Benz cars are of course exhibited by Messrs. Hewetsons, Limited, Dean Street, Soho, W., their exhibit comprising, at the time of our visit, four vehicles: three Ideals No. 1 and an example of the Ideal No. 2. One of the vehicles shown is the identical one which recently successfully went through the Automobile Club's 100-miles trial without a stop. These vehicles are too well-known and too largely used to need any lengthy reference at this time.

A very neat type of two-seated motor-voiturette is shown by Les Etablissements Pieper, of Liège, Belgium. The motor—a single-cylinder vertical one of 3 h.p.—is located in a bonnet at the front of the car. It is fitted with radial ribs to the cylinder for cooling purposes and electrical ignition. Two speeds are provided, the power being transmitted by a single belt working on fast and loose pulleys on a counter-shaft at the rear. The pulleys are of equal diameter, the variation in speed being obtained by different-sized spur wheels connected with the pulleys, which mesh with corresponding spur wheels on the rear axle. The wheels are of the cycle type with pneumatic tires; ample brake power is provided, while the steering is controlled by a hand wheel. The weight of the little car is 5 cwt.

A new Cannstatt-Daimler car, which we hope to illustrate in our next issue, is to be found on the stand of the Motor-Carriage Supply Co., Ltd., Donnington House, Norfolk Street, Strand, W.C. It is a Victoria, to seat four or five persons, and is noticeable on account of its long wheel base. It is fitted with a 5½-h.p. Daimler motor in front, with a special water-cooling arrangement and Simms-Bosch magneto-electric ignition. Four forward speeds and reverse motions are fitted, controlled by one lever. The steering gear is mounted on ball bearings, while the tires are of solid rubber. The car is fitted



with a hood and can be quickly converted into a closed carriage. A couple of Simms' "Motor-Wheels" and a model of the Simms-Bosch ignition device are also to be seen at this stand.

A large show of motor-cars and cycles is made by Messrs. Friswell, Ltd., Holborn Viaduct, E.C., two separate stands being occupied—one for cycles and one for cars. The latter comprises a couple of examples of the Renault voiturette, a four-seated 8-h.p. Peugeot car, a Mors "Petit Duc" two-seated car, a Mors dog-cart, and a "Star" car. A third stand in the arcade is devoted to a collection of motor-car and cycle accessories of every kind.

The first stand to attract one's attention in the minor hall is that of the London Autocar Co., Ltd., 182 Gray's Inn Road. This concern, in addition to handling "Marshall" cars, bicycles and quadricycles, are now making a speciality of motor-car and cycle fittings and accessories of every kind, not only to supply the miscellaneous wants of automobilists but to meet the requirements of those firms who have entered or are about to enter the automobile industry. In addition to the parts and accessories a Beeston motor-tricycle and a De Dion motor-quadricycle are also on view. At the time of our call at the stand the "Marshall" car which did so well in the run to Brighton last week—it being the second to reach Preston Park—was not *exhibitor*, but we were given to understand that a vehicle of this type would be on view towards the end of the week.

We generally expect to find something interesting at the exhibit of Mr. Carl Oppermann, of Wynyard Street, Clerkenwell, and his stand at the Agricultural Hall is no exception to the rule. First, we find the electrical victoria which figured at the Exhibition in July last. Since then, however, Mr. Oppermann has devised and adopted a new direct driving gear dispensing with the use of chains, and is showing a complete under-carriage with 3-h.p. electro-motor fitted with the new gear. The new frame (which is constructed of steel-tubing) and gear is quite self-contained, and is arranged to suit a large number of different types of carriage bodies, and can be fitted up with very little labour. It is made to drive by either the front or rear axle, although the latter is preferred as being most convenient. In the new gear the electro-motor is so arranged that instead of its shaft being parallel to the axle it is at right angles thereto. The motor shaft terminates in a worm, which gears with a worm wheel centrally placed on the axle, the gear being entirely enclosed and working in an oil bath. The illustration (Fig. 10) shows an electric dog-cart, with a frame and driving gear of the type above referred to, recently constructed by Mr. Oppermann for Mr. Dyson Perrins, of Ardross Castle, N.B. It is fitted with a battery of forty accumulators weighing 11½ cwt. and having a capacity of 150 ampere-hours. The road wheels are built on the tangent principle, with butt-ended spokes and steel hubs fitted with roller bearings. Solid rubber tires 2 in. wide are used, and the rear axle is fitted with a differential gear and runs on roller bearings. Steering is controlled by a bar acting on the front wheels. Band brakes are fitted to the rear wheels, operated by a foot lever. An electric brake, actuated by the controller, is also provided. The controller is arranged to give three speeds forwards, corresponding to 4, 8, and 12 miles per hour, and one speed backwards, all of these results being attained by means of one lever. The car illustrated was recently subjected to an exhaustive trial. With four passengers it weighed complete 25 cwt., a distance of forty-five on one charge of the accumulators being successfully covered. Mr. Oppermann is now making a speciality of supplying under-frames complete with gear and road wheels, to which coachbuilders may fit their own "bodies." He is also, we learn, about to bring out a new type of accumulator much lighter than usual. A battery of 40 will only weigh 8 cwt., while the capacity will be 150 ampere-hours.

A new accumulator or second battery for electric motor-vehicles is the principal exhibit of the Leecoll Electric Battery Co., Ltd., of 14 Devonshire Square, E.C. It is described as being made on an entirely new principle, neither plates of lead nor free sulphuric acid being used. The electrolyte consists of a neutral solution of metallic salts, and in charging the battery these salts are transformed into a metallic coating, which is deposited on a negative consisting of a cylinder of metal gauze after the manner of electroplating. The positive plate is encased in a porous tube, and is surrounded by the negative cylinder. The Leecoll battery is claimed to give a higher E.M.F. than a lead cell—i.e., 2.5 volts, instead of only 2 volts. Owing to this high E.M.F. 32 of these cells will, it is stated, give the same voltage as 40 cells of the ordinary type. The traction-type cells weigh 15 lb. each, and have a capacity of 90 ampere-hours.

Messrs. Brown Bros., Ltd., of Great Eastern Street, London, E.C., have, as usual, a very large exhibit of motor-tricycles, quadricycles, trailers, front seat attachments, small petrol motors, parts and accessories of every kind, such as frames, carburettors, batteries, tanks, etc. Messrs. Brown had hoped to have on view a specimen of the latest type of the Whitney steam car, which attracted so much attention in the same building in July last, but they were unable to get one over in time for the show.

One of the most attractive looking motor-quadricycles in the show is that exhibited by Osmonds, Ltd., Birmingham. There are several special features in the vehicle, notably in the arrangement of the control levers, which are so arranged as not to interfere with the leg action of the rear rider. The motor is a 2½-h.p. English De Dion, a special carburettor of the "Oury" Raymond type being fitted. The machine is 7 ft. 6 in. long by 3 ft. 6 in. wide and weighs about 2½ cwt. The Osmond Company had also intended showing a new design of two-seated voiturette, but this had not arrived at the time of our call at the stand.

Messrs. Marriott & Cooper, Holborn Viaduct, E.C., include an example of their motor-quadricycle on their stand. The motor is of the De Dion type. The front seat is suspended in a special manner with the view of preventing vibration. The steering of the machine is the same

principle as on the "Olympia" tandem tricycle. A ample brake power is provided, a foot plate being added to the brake lever so that the driver can hold the brake on with his foot as well as apply it with the hand.

A new firm in the motor-vehicle trade is Messrs. Wm. H. M. Burgess, Ltd., of 9 Farringdon Road, E.C., who have secured an agency for the motor-tricycles and quadricycles of Messrs. Marot, Gardon & Co., of Paris. Several machines of this concern's manufacture fitted with De Dion motors are on view, as also several fitted with a motor named the "Auto."

The Enfield Cycle Co., Ltd., Redditch, show an example each of the "Enfield" motor-tricycle and quadricycle. These are highly-finished machines, but having been already described in these columns need no lengthy description at this time. Similar machines are also displayed by the Eadie Manufacturing Co., Ltd., Redditch.

The motor-tricycle shown by the Swift Cycle Co., Ltd., Coventry, closely resembles the "Ariel," having the same carburettor, with battery enclosed in a case completely filling the fore frame; the motor is, however carried behind the axle.

A novel two-seated motor-tricycle is shown by the Century Engineering and Motor Co., Ltd., of Altrincham, Cheshire. The frame is of tubular construction; the motor is of the "Sphinx" type, which has already been illustrated in this Journal; it is of 2½ h.p., and is located underneath and in front of the rear rider. It is provided with electric ignition, and a Longuemare carburettor. The engine drives, by means of a Renold "silent" chain, a counter-shaft from which the power is transmitted to the rear axle by two chains. Two speeds are provided, while the motor can be instantly disconnected from the transmission mechanism. The steering is controlled by means of a lever at the right of the driver. The steering wheels are so arranged that they incline at varying angles according to the circumference of the radius of the turn. The steering by this means is, it is claimed, rendered so safe and sure that it is possible to negotiate right angle turns at top speed with safety. A special device is provided to start the motor, while ample brake power is provided. The riders are seated tandem-fashion, the front seat, which is comfortably upholstered, being suspended upon C springs and detachable at will. The wheels are of the cycle type, 28 in. diameter, and fitted with pneumatic tires. Reservoirs are provided to contain a quantity of motor-car spirit sufficient for 300 miles or more, and are so disposed that they are concealed from view. An average speed of twenty-five miles per hour can, it is claimed, be easily maintained on a whole day's journey over give-and-take roads. A novel feature is the provision of a pipe by means of which the exhaust can be carried at will into the foot plate of the front seat, which is double cased, so furnishing a comfortable footwarmer for use in cold weather.

The Butler motor and motor-tricycles are shown in the gallery by Mr. P. Butler, of 22 Passage de l'Opera, Paris. The motor, of 2½ h.p., is in general appearance very similar to the De Dion, but comprises several variations from the latter. The valves are arranged one above the other in such a way that they can be readily removed. The engine runs at a speed of 1,500 revolutions per minute, and weighs just over 60 lb. A special feature is that, to facilitate the starting, the lever is not connected to the compression tap as usual, but to the exhaust valve. The tricycle appears to be a strongly-built machine, well adapted for its purpose. A front seat attachment whereby a tricycle may be converted into a two-seated quadricycle is also shown.

The European Cycles Consolidated Company, of 149 Albany Road, London, S.E., are exhibiting a new motor tandem bicycle, the motor, a single cylinder vertical one of 2½ h.p., being mounted on a platform just behind the rear rider. The machine exhibited is incomplete, so we defer a detailed description until a later date. In the meantime we may state that the cylinder is constructed of cast iron, and is fitted, not with cast ribs, but with thin sheet steel radiators, laminated on, these being claimed to increase the radiating efficiency of the cylinders 20 per cent. The motor is geared to the rear wheel hub by a stout driving chain.

Motor-tricycles and quadricycles are also shown by the Ariel Cycle Co., Ltd., Birmingham; Gormully and Jeffery Manufacturing Co., 147 Farringdon Road, E.C.; Messrs. Benetfink & Co., 89 Cheapside, E.C. (Eadie); the Nimrod Cycle Co., Ltd., Bristol; Mr. John Piggott, 117 Cheapside, E.C. (Beeston); the Gordon Cycle and Motor Co., Ltd., 140 Seven Sisters Road, Holloway; Messrs. Gamage, Ltd., Holborn, E.C.; Clark Bros. Cycle Co., Ltd., Dames Road, Forest Gate, E.; the Bard Manufacturing Co., Ltd., Bard Cycle Works, Birmingham; The Regent Engineering and Cycle Co., Regent Parade, Birmingham (Accles-Turrell).

We have already mentioned in these columns that in addition to motor-cars Mr. John Burns, of 44 Berners Street, Oxford Street, W., was making a speciality of motor-car and cycle accessories of every kind, and an examination of his stand elicits the fact that he is now able to supply anything from a bolt to a complete vehicle. Pressure on our space prevents any lengthy mention of the exhibits among which we may, however, mention an example of a new vertical petrol motor—the Déchamps. This is of Belgian construction, of the type employed in the Déchamps voiturette, which took part in the run to Brighton last week.

A very interesting stand to the automobilist is that of M. P. Dupressoir, of Maubeuge (Nord), France. Prominent amongst the exhibits is the Dupressoir two-speed gear for motor-tricycles and quadricycles illustrated in our issue of June 2nd last. An example of a new three-speed gear for light cars is likewise shown, as also frames for motor-tricycles, front seat attachments, etc. The latter are worthy of special notice, particular attention having been devoted to the suspension, in order to give a comfortable and easy seat.

A varied collection of motor parts and fittings is to be found at the stand of Mr. W. H. Dorey, 14 Rue Torricelli, Paris, including sparking plugs, carburettors, dry batteries, cooling coils, lubricators, etc. A

specimen of the "Dorey" vertical petroleum motor, illustrated and described in *The Motor-Car Journal* (see issue of April 21st last) is also to be seen on this exhibit.

A good lamp is one of the prime necessities in connection with motor-cars, so that automobile visitors to the Show should not omit to inspect the exhibit of Messrs. Salsbury & Son, of Long Acre, W.C., who make a special feature of light-giving articles. The firm are the British agents for the Dietz paraffin lamps, and are showing samples of the improved patterns for 1900. For those who prefer an acetylene lamp Messrs. Salsbury are introducing a novelty in an acetylene candle, which will fit into an ordinary carriage candle lamp.

Messrs. Zimmermann, Knauth & Co., of Kappel, Chemnitz, Saxony, and the Patents Trading Syndicate, 1 Chiswell Street, E.C., show acetylene lamps for motor-cars. The Ailsa Craig Machine Co., of Putney, S.W., have on view a number of the useful motor-tricycle stands, recently illustrated in these columns.

Some very useful motor-car accessories are to be found at the stand of Mr. Alfred Dunhill, of 145 Euston Road, N.W., in the way of rubber mats, rugs, and gloves, all very necessary articles, especially now that the winter season is coming upon us. Mr. Dunhill's products in this direction are now too well known in the automobile world to need any lengthy mention at this time, but we may add that he is also making a speciality of outfits for the repair of punctured pneumatic tires of motor-cycles and cars. The repair of a tire on the roadside is anything but a pleasant task, but it is better to be equipped for emergencies than to be stranded on the roadside, miles from a railway station.

The New Grappler Pneumatic Tyre Co., Ltd., Birmingham, are showing an entirely new pattern motor-tire to fit Michelin rims. This will enable motorists who use French tires, and who wish to change to tires of English manufacture, to do so without having their wheels rebuilt.

Pneumatic tires for motor-cars and cycles are shown by Messrs. Simms & Co., Amberley House, Norfolk Street, Strand, W.C.; the Continental Caoutchouc and Gutta Percha Co., 64 Holborn Viaduct, E.C.; Tyres, Ltd., Hill Cross House, Coventry; the Midland Rubber Co., Ltd., Ryland Street, Birmingham. Chains for motor-cycles and cars, ranging from  $\frac{1}{2}$  in. to 1 $\frac{1}{2}$  in. pitch, are exhibited by Messrs. Joseph Appleby, Ltd., Castle Chain Works, Birmingham; the Albert Eadie Chain Co., Ltd., Redditch; and the Manchester Cycle Components Co., Ltd., Manchester. Motor-cycle parts and accessories are shown by Messrs. Philipp & Co., Ltd., 49 Farringdon Street, E.C.; Mr. C. Lohmann, 36 Aldersgate Street, E.C. (lamps); Messrs. Casswell & Co., Ltd., 29 Great Eastern Street, E.C.; Messrs. William Bown, Ltd., Summer Lane, Birmingham; Messrs. Benton & Stone, Bracebridge Street, Birmingham (tire inflators). Saddles suitable for use on motor-cycles are to be seen at the stand of Messrs. Lamplugh & Co., 67 Aldersgate Street, E.C., while Messrs. Gamage, of Holborn, E.C., make a large display of clothing, etc., suitable for automobilists.

#### AN INFRINGEMENT CASE.

THE action, British Motor Company, Limited, v. Burgess Cycle Company, was mentioned before Mr. Justice Cozens-Hardy, on Wednesday last week. The plaintiffs in the action ask for an injunction to restrain an alleged infringement of their patents. Mr. A. J. Walter said the case was in process of settlement, but the settlement was not absolutely completed, and would take a few days longer. He asked that the action should stand over generally, with liberty to apply to restore it in a few days. His Lordship acceded to the application.

#### MOTOR-CAR ACCIDENT AT SWANSEA.

THE motor-cars have been running at Swansea with singular immunity from accidents, but on Monday evening, about seven o'clock, one of them ran over its own conductor. The latter, a youth named Hopkins, was on the front distributing tickets, when he fell under the wheels. He was immediately taken in the car to the hospital, close by. The lad was detained, but was not regarded as seriously injured.

A BRIGHTON resident writing to a local paper regarding the excessive speed of motor-tricycles refers to them as "noisome pestilences."

It is estimated that at least 2,000 automobiles will be circulating in Paris next year. On the first day of the present month 1,795 had been officially declared at the Prefecture.

IN the province of Feniland in Sweden a regular daily motor-car service over a distance of 150 miles is being arranged for. There will be two cars, one for passengers and one for goods.

COMTESSE CORSINI SFORZA recently travelled from Paris to Rome on an 8-h.p. Peugeot car. The route was through Morvan, Lyons, Nimes, and Marseilles, over the Corniche, thence to Genoa, through Florence and Perugia to Rome.

A MR. R. T. MAUNSELL, of Masterton, is the proud owner of a motor-tricycle, said to be the first to arrive in New Zealand.

MESSRS. DELAHAYE & Co., of Paris and Tours, the makers of the Delahaye motor-vehicles, are bringing out a new 14-h.p. motor-car.

MESSRS. KHORN & L'HERMAND, 207 Boulevard Voltaire, Paris, is the style of a new firm which has been formed to deal in motor-cars, etc.

EFFORTS are being made to establish a motor-car service for the transport of both passengers and goods between Gerona and Palamos, Spain.

THE Hull and District Cycle Association have arranged to hold a cycle and motor show at the Assembly Rooms, Hull, from February 5th to 10th of next year.

ONE of the many signs of the rapid increase of interest in the motor-car movement which is being shown by the general public is to be found in the growing list of members of the Motor-Car Club.

THE Union Autocar Co. has been organised at Lowell, Mass., to run public motor-vehicles through the suburbs. The capital is £20,000, and electric omnibuses to seat twenty passengers will, it is stated, be used.

THE Buckingham and Adams Cycle and Motor Company, Limited, has been registered with a capital of £20,000 to carry on the business of manufacturers of and dealers in bicycles, tricycles, velocipedes, motor-cars, etc.

A FEW days ago a meeting of motor-car drivers was held in the offices of the National Amalgamated Union of Labour, Newcastle. It was unanimously resolved to form a motor-car drivers' branch, a large number of members being enrolled.

THE Century Engineering and Motor Company, Limited, has just been registered, with a capital of £15,000, to adopt an agreement with Arthur Firth and Ralph Jackson, and to carry on the business of engineers, cycle, carriage, and motor manufacturers.

AT the Bridgwater carnival Messrs. John Roberts and Sons, of the West of England Carriage Works, Bridgwater, had effective representation with a Daimler motor-car, at the rear of which was a platform on which stood a large model of a horse. The car bore the inscription, "The Horses' Friend."

THE Southbourne, Boscombe, and Bournemouth Omnibus Co., Ltd. has been registered with a capital of £8,000, to acquire the business of omnibus proprietors carried on by the Boscombe Park, Pokesdown, and Southbourne Omnibus Syndicate, Ltd., and to carry on the business of conveying passengers and goods in vehicles drawn by horses, or propelled by electricity, gas, oil, or other power. The registered office is at Metropole Chambers, Bournemouth.

THE development of the automobile movement is bringing forward a new class of consulting engineer, or at least a new sphere of operations for the profession, for quite a number of engineers are now laying themselves out to inspect and test automobiles during construction and before acceptance. Among these is Mr. George Becks, of 3 Broadway, Westminster, who in addition is open to advise intending purchasers as to the most suitable car for their use.

AT the last meeting of the City of London Corporation, a letter was read from the clerk to the Surrey Standing Joint Committee, forwarding a copy of a communication recently addressed by that body to the Local Government Board on the subject of the desirability of the registration of motor-cars, and asking that the City would place the same before their police authorities, with a view to taking such measures as seem most desirable. The letter was referred to the County Purposes Committee for consideration and report.



## ACTION AGAINST AN AUTOMOBILIST.

THE Automobile Club sends the following notes on the recent Sittingbourne case furnished by Mr. Staple Firth:—

Mr. Hugh Campbell, of the Stock Exchange, and a member of the Automobile Club, set out from his house at Margate, accompanied by members of his family, in his motor-car in the early hours of the morning of July 18th, but a very pleasant run was marred by subsequent events, for on nearing Sittingbourne he encountered three shire horses harnessed tandem fashion to a large wagon carrying a three-ton load of grain. The leading horse turned round and ran alongside the motor-car for a short distance, and the other two horses followed suit. Mr. Campbell's mechanic, who was driving, endeavoured to stop the car, but the wagon and horses were too close and came into collision with the car. The animals soon got clear, and, dragging the wagon with them, dashed down the road into the town. The two leading horses got disengaged from the traces, but the wheeler dashed into a draper's shop through the plate-glass windows, and fell dead.

Mr. Mercer, the owner of the horses, commenced proceedings in the County-Court at Sittingbourne for the loss of the horse, and Mr. Campbell counter-claimed for the car. The case was tried before his honour Judge Sir W. L. Selfe and a jury. Mr. Craig appeared for the plaintiff, Mr. Mercer, and Mr. Staple Firth appeared for the defendant, Mr. Hugh Campbell. The case was commenced in the morning and was not concluded until nearly seven p.m.

It was urged by the plaintiff that the motor-car was a nuisance and was being negligently driven, in consequence of which the horse bolted; and it was sworn to by numerous witnesses for the plaintiff that there were two men in charge of the horses, which were standing at the roadside, and that one of these men had hold of the leader's head.

It was as confidently sworn to by a number of witnesses for Mr. Campbell that the leading horse was not held or attended, and that therefore Mr. Mercer was to blame, as the horses were not under proper control and surveillance.

The witnesses in their evidence as to the speed of the car varied in their estimates of its speed from five miles to fourteen miles an hour. The wagoner put it down as ten miles an hour, and on being cross-examined by Mr. Firth as to his knowledge in calculating speeds stated he knew how to calculate speeds and measure distances, and he could tell the difference between railway trains running at twenty and twenty-five miles an hour, whereupon he was asked the length of the court room. He said three rods (49½ ft.), upon which he was asked if it would surprise him to know the length of it was 35 ft., and that even in reckoning that small space he was thus 14½ ft. out. The witnesses evidently did not know that somebody had been in court in the early morning with a tape measure!

The Judge did not seem disposed to view motor-cars with favour, and observed that so far as he had seen them they appeared to be very uncomfortable things. He also made various observations suggestive of the idea that any motor-car might very easily be a nuisance; and although even witnesses for the plaintiff admitted that horses were "broken in" to traction engines and railway engines, and could easily be so "broken in," yet the Judge stated he did not conceive it to be the duty of the Kent farmers to "break in" their horses to motor-cars; that traction engines had been known for nearly forty years, but that motor-cars were still comparatively rare. He ultimately, when summing up the evidence, left it to the jury to decide who they would believe—the witnesses for the plaintiff or those of the defendant, between whom the chief conflict of testimony existed as to whether the horses were properly attended or not.

The jury decided ultimately in favour of Mr. Campbell's version, and dismissed Mr. Mercer's action. They also dismissed Mr. Campbell's counter-claim for the damages to his car.

While Mr. Mercer is to be sympathised with in the loss of a valuable horse, it is to be hoped that such accidents will teach horse owners a lesson, and let them know that the highways were not made exclusively for them, and that in using the highways they must use them properly, and keep their horses under control.

## FURIOUS DRIVING CASES.

At Marylebone last week, Mr. Henry Leitner was charged, before Mr. Curtis-Bennett, with furiously driving an electric motor-car at Regent's Park, the rate being nineteen miles an hour. Mr. Leitner had been cautioned a few days before, and he promised not to offend again. Mr. Curtis-Bennett fined him 20s. (and costs).

At Grantham on Monday, Horace Luff Smith and Cyril Owen, of the Humber Cycle Works, Beeston, Notts, were fined £1 each, including costs, for riding motor-tricycles at a furious rate at Grantham, on November 7th. Police-constable Marriott said the defendants were travelling at the rate of eighteen miles per hour.

At the Newcastle Police Court on Tuesday, Mr. Percy Morse, twenty, of 10, Trafalgar Street, Newcastle, was prosecuted for furiously driving a motor-car at Claremont Road and North Terrace on the 25th October last. P.C. Redhead said that he was on mounted duty on the Town Moor on the occasion of the Cow Hill fair, when he saw the defendant, who was plying for hire between the fair and the Central Station. He was driving at a furious pace—about 15 to 20 miles an hour. Witness had to go full gallop and did not get level with him until they reached Hunter's Road. On looking to see why he slackened pace witness saw a constable standing in a by-street. A number of horses became so restive that they had to be taken on to the footpath. Several people complained of the way the motor was driven along the road. Witness considered eight miles an hour too fast a pace under the circumstances. The Bench imposed a fine of 40s. and costs.

## THE RECENT MOTOR-CAR FATALITY AT NIGG.

In the Stonehaven Courthouse on the 15th inst., before Sheriff Robertson, an inquiry was conducted into the circumstances attending the death of Frederick James Lyall, motor-car driver, Aberdeen, on the 2nd inst. Mr. Falconer, Procurator-Fiscal, appeared for the Crown; Mr. J. Y. Collie, advocate, represented the Caledonian Motor-Car Company.

J. H. Paterson, managing director of the Caledonian Motor-Car Company, stated that Lyall had been engaged in the service of the Company, and had received instructions to return with the motor-car, which had been on hire at Fetteresso Castle, on the 2nd inst. He stated that when the car did not return that evening he despatched a telegram to Fetteresso Castle, but it was returned marked "gone." Later in the evening he learned that Lyall had been killed through the upsetting of the machine. He drove out to the scene that evening. From the appearance of the car and the wheel marks on the road, which were visible that night and next morning, he was of opinion that the car had been proceeding too fast down the brae. The speed had been so great that Lyall had driven the car off the road to the footpath, and then, finding his position dangerous, had attempted to turn too quickly. The result was that the car was overturned. There were four speeds on the car—four, eight, twelve, and sixteen miles an hour—and the speed could be regulated to these rates. It was possible when there was a high speed that the car could be put out of gear, and allowed to run with the speed of its own momentum. He had seen that done, but experienced men seldom did this owing to the danger which attached to it. Lyall was a steady, sober man, who was highly thought of, being an expert mechanic and driver.

W. R. Strachan, barman, Newtonhill, was called to give evidence of the fact that he had met Lyall on 2nd inst., and had a drink with him. The machine had gone wrong somehow, a lynch pin had gone out of place, and it was speedily righted. He had met Lyall at Stonehaven about four o'clock, and entered the car. They drove to Newtonhill, and Lyall left about a quarter to seven o'clock. He was quite capable of knowing what he was doing. It had been a rainy night but it cleared up when he left Newtonhill.

Constable Charles Gauld, Kirkhill, described how he was called to the scene of the accident about eight o'clock on 2nd inst. The front portion of the car was on fire when he reached the scene, and immediately he proceeded to discover what had become of the driver. With the help of another he managed to raise the car from the ground, and beneath the seat he found the body there. He at once ordered the body to be removed to the house and Dr. Ogilvie called in. The oil of the car continued burning, but they managed to extinguish the flames. The constable described the marks of the car wheels on the road, showing that the machine had been driven on the footpath. Then, hurriedly, he had attempted to turn the car, but his effort had caused the machine to over-balance. It was evident that Lyall had continued to retain his grasp on the steering gear, with the result that when the car overturned Lyall was thrown under it and crushed with the weight of the machine.

Dr. Ogilvie explained that Lyall had received a severe wound above one of his eyes, and on probing he found that he had sustained fracture of the skull. Life was extinct when he examined the body in the constable's house.

The Sheriff recalled Mr. Paterson, and asked if he could give the Court any idea what was probably necessary when Lyall said the car required repair at Newtonhill.

Mr. Paterson replied that when he previously saw Lyall he had been told that the starting lever of the engine was split. That meant that the engine could not be started with one turn, but there was of course absolutely no danger of any kind about this. The only way he could account for the statement that the car was swaying from side to side was that Lyall was not steering straight. As evidencing the excellent condition of the car, Mr. Paterson explained that when on the day after the accident he went with two mechanics to bring the car home, all that was necessary to put the car in order was to straighten the steering lever, which had been bent by the upsetting of the machine. The car was driven home all right.

After deliberation the jury returned a formal verdict of accidental death.

## MOTOR-CYCLE RACING AT THE CRYSTAL PALACE.

A LARGE crowd gathered round the Crystal Palace track on Saturday afternoon last to witness a couple of motor-cycle races—a five miles and a ten miles handicap. The former resulted in a win for Mr. C. Jarrott, with Mr. C. Sangster second, and Mr. A. McCormack third, all three riders being on the scratch mark. Jarrott won by three lengths, ten lengths separating second and third. Time, 8 m. 59 s. The ten miles handicap resulted in favour of Mr. C. Sangster, 1 lap start; Mr. J. Stocks, with the same start, second; and Mr. C. G. Wridgway, scratch, third. Wridgway at one time looked like winning, but in the last mile or so he slackened down considerably. Sangster won by a length in 18 m. 1½ s.

Another meeting, under the auspices of the Motor-Car Club, was held at the Palace track on Wednesday afternoon, when two races were decided with the following results:—Five Miles Roadster Handicap: Mr. C. G. Wridgway (scratch), 1; Mr. Harvey du Cros, jun. (half lap start), 2; and Mr. F. F. Wellington (two laps), 3. Also rode: Mr. E. Buck (scratch), Mr. C. Jarrott (scratch), Mr. J. McCormack (half lap), Mr. F. Leonard, motor-bicycle (two laps), Mr. R. H. Marks (two laps), and Mr. M. Moyle (three laps). Wridgway, mounted upon a very lightly constructed machine, made good progress and won by twenty lengths, half a lap dividing second and third. Ten Miles Scratch Race: Mr. C. G. Wridgway, 1; Mr. C. Jarrott, 2; and Mr. C. Sangster, 3. Also rode: Mr. E. Buck, Mr. F. F. Wellington, Mr. Harvey du Cros, jun., and Mr. J. McCormack. The winner made good headway soon after the start, and reached five miles in 8 m. 15 s., and won easily in 16 m. 28½ s.

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## COMMENTS.

NOVEMBER, which so far as London is concerned departed in fog, is usually associated with pleasant memories to all who enjoy outdoor sport and exercise. The dryness of the air, the general absence of rain, the openness of the country from the lack of leaves, and the usually good state of the roads are features of November which redeem it from the evil reputation which townfolk are inclined to give the eleventh month of the year. The month just ended has confirmed November in our good opinion, and in common with many other automobilists we believe we

have used our motor-car more during the past month than in any similar period of 1899. And in organising a run to Brighton and back in one day, among a few members of the Automobile Club, Mr. C. Johnson, the popular secretary, has enabled automobilists to demonstrate that our cars are as suitable when the leaves have fallen as when they are thick upon the trees. The idea of holding the run was a happy one; and the way in which it was carried out was equally enjoyable.

### The Start for Brighton.

ABOUT fifteen cars and motor cycles were assembled in front of the Automobile Club, Whitehall, S.W., on Tuesday morning, and a general start was made at 8.40 a.m. We had gone on our way a quarter of an hour earlier, only to discover

that the water-cart had been busy, and the tram-lines were absolutely dangerous from their greasy state. It was difficult to steer the car, the rear wheels seemingly slipping all over the road, giving a most unpleasant sensation—or, rather, series of sensations—to those on the car. At length the almost inevitable incident under such circumstances occurred, and we were not surprised when, proceeding up Brixton Hill, the car turned right about. The wheels struck the tram-line, and about three-fourths of the tire came off the rim. Having tried all our tools, we called for aid at a cycle shop near by. But unexpected assistance came from another quarter; a steam roller appeared on the scene, and the engineers—good fellows that they were—lent willing and cheerful help. With their hammers they worked for nearly an hour, and, at length, drove the tire back in position. While thus engaged we were able to see our friends pass on their various cars, all taking the hill in fine style, the procession being brought up by the new Daimler “Parisian,” Mr. Pedley driving, with Mr. C. Johnson as passenger. This car, too, had an attack of side slip and turned completely round, to the astonishment of the passenger and driver, and the amusement of the drivers of horse-drawn vehicles. Fortunately no damage was done and the journey was continued. The Hon. C. S. Rolls drove his Peugeot, as illustrated on following page. On restarting we travelled well, and at Thornton Heath saw Mr. Gregson and his man searching in the muddy road for the top of the carburettor. At Croydon Mr. Lanchester on his car, with Mr. Swindley as companion, was passed, and at the twelfth milestone we came across Messrs. Owers and Pearce with their car disabled through

the breaking of the counter-shaft. They were able to use the second gear, however, and so drove the car back to town with the broken axle carried on its body. Mr. Lanchester was seen again at the sixteenth milestone, and, a few minutes later, Mr. Gregson and party, on their twin Daimler, gave us the “go by.” A mile further on Messrs. Jarrott and Napier were standing by their car. Between Reigate and Crawley we again passed Mr. Lanchester, and at the thirtieth milestone came across Mr. Barnes on his Renault car. This little car had evidently been travelling very well, but was then going rather badly. Once more Mr. Lanchester flew past us—at Pyecombe, six miles from Brighton—and shortly after the Napier dashed to the front.

### Lunch at Brighton.

No further incidents occurred, save that we had yet another opportunity of speaking to Mr. Lanchester and his passenger, Mr. Swindley, and then at 12.45 reached the Hotel Metropole, after a magnificent run, which was most enjoyable—save, of course, for the tire incident, and who could have enjoyed that? At the hotel about thirty, including several ladies, sat down to a well-deserved and much-enjoyed luncheon. During its progress Mr. W. Bersey came in, having made the trip on the London Motor Van and Wagon Co.’s mail phaeton, which has covered more than 3,000 miles. His backward arrival was owing to the fact that he started late. Mr. T. B. Browne’s 6 h.p. Panhard was the first arrival at Brighton, the English Daimler Parisian car of 6 h.p. being only two minutes later. Messrs. Frank Butler, Stocks, and Egerton, on their motor-cycles, also made most successful runs.

### The Return to Town.

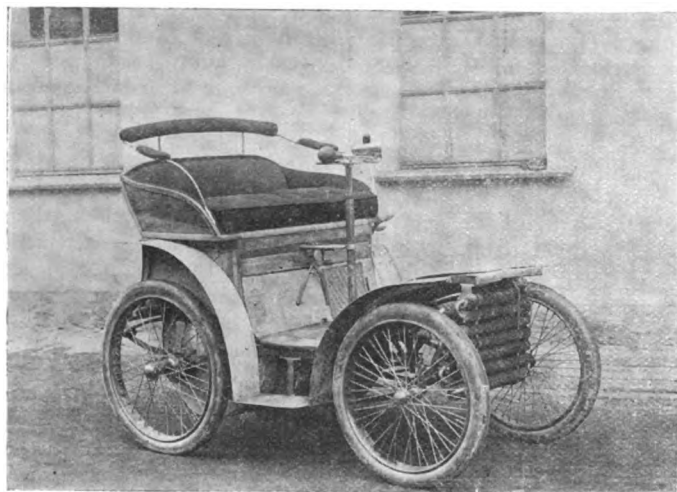
THE menu at luncheon was a long one, and at half-past two coffee had not been served. Dispensing with such a luxury we prepared to return to town, whither Mr. F. Butler was the first to go. At 2.40 p.m. we set off to return by the same route as we had gone in the morning. But some of the other enthusiasts made their way by Shoreham, Worthing, and Horsham. About six miles from the sea we came across Mr. Goodall and a party of ladies on an Iveagh phaeton. They had had no incident and their appearance at that time was due to a very late start from London. A mile or two further we met an Allard car, with three passengers, which seemed to be going strong and well. The Renault came along, but we quickly overtook it, and although it sputtered several times we ultimately “dropped” it, and Mr. Barnes reached the club-house about ten o’clock. We stayed at Reigate for tea, arriving in Whitehall at 7 p.m., where Mr. Butler had already appeared. The Lanchester car was also there, having come through without a stop. Of those that returned via Horsham, the first in was the Daimler Parisian, Mr. Estcourt’s Daimler being second, with Mr. Browne’s car third, the latter reaching the club-house about ten o’clock, Mr. Estcourt appearing an hour earlier. Then came Mr. Goodall and his party. Altogether about thirty sat down to dinner at the club, and a pleasant hour was subsequently passed in recounting the incidents of the day.

### A Motor-Manufacturers' Association.

ON Friday last an important and representative gathering of British manufacturers of motor-cars, and essential parts thereof, was held at the Hotel Metropole, London, thirty gentlemen being present, to discuss the advisability of forming a Motor Manufacturers' Association for the protection of the trade, and other matters. After an interesting discussion, which left no doubt as to the feelings of the meeting, it was unanimously decided that such an association was urgently needed, and should be formed, and an organising committee of twelve was elected from the gentlemen present to draw up a working scheme to be presented at another meeting to be called at an early date. The members of this organising committee are Mr. E. H. Bayley, of the Daimler Motor Company; Mr. Walter Phillips, of the Humber Company; Mr. S. Gorton, of the Beeston Motor Company; Mr. Eadie, of the Eadie Manufacturing Company; Mr. Gretton, of the Motor Manufacturing Company; Mr. S. F. Edge, of the Dunlop, De Dion and Motor Vehicle Companies; Mr. C. Sangster, of the Cycle Components Company; and Messrs. Accles, Berscy, Prestwich, and Rothwell. Mr. G. H. Smith, of the United Motor Industries, was elected secretary *pro tem*.

### Preparing for Next Year's Racing Season.

NEXT year is likely to see some interesting automobile races, for it is rumoured that Messrs. Edge, Jarrott, and Wridgway intend to take part in most of the principal long-distance motor events in France, and for this purpose have placed orders for three very fast cars. Messrs. Edge and Jarrott have 20-h.p. Napier vehicles on hand. Mr. Pearce has also ordered a Napier car, while Mr. Wridgway is having a special 20-h.p. Pennington car built. The Daimler Motor Company, Limited, are, it is said, building a 23-h.p. car, while the British Motor Company are having built a 23-h.p. vehicle of the type illustrated in another part of the present issue. Altogether there can be no doubt that a serious attempt is to be made during the coming season to bring some of the honours in respect of French automobile races to this country. It may here be mentioned that the medal for the second place and the medal



THE P. T. S. CO.'S "LILIPUT" CAR.

for the third place in the Tourists' Class of the recent Paris-Ostend races have just been forwarded through the Automobile Club to the Hon. C. S. Rolls and the Hon. John Scott Montagu, M.P., respectively.

### Motor Cars for Postal Work in Ceylon.

IN a recent issue we illustrated a Leyland steam van which has lately been sent out to Ceylon for regular postal work in Colombo. It is now reported that the postal authorities intend ordering another motor-car for the conveyance of mails between Matara and Tangalla, and Tangalla and

Hambantola. The *Ceylon Observer*, however, considers it to be very doubtful whether the car could run satisfactorily on this line of road, which is very uneven and hilly, especially after leaving Tangalla.

### Licences for Motor Cars.

MOTOR-CAR agents all over the country, whose numbers are increasing at a rapid rate, will be interested in the case heard at the Marlborough Street Police Court on Wednesday, and dealt with on another page of this issue. The Commissioners of Inland Revenue summoned Mr. Moffat Ford for keeping a carriage without a licence. It seems that the car in respect to which he was summoned was one received by the company from Paris to sell, and he had merely taken a short journey with it to see if it was in working order. The magistrate held that defendant was not bound to take out a licence, and dismissed the summons.

### The Recent Dover Automobile Exhibition.

BASED upon the report of the Judging Committee, the Local Automobile Exhibition Committee of the British Association Dover Meeting have, we learn, made the following monetary awards:—Best motor vehicle under 1½ tons: Mr. Gretton, "Iveagh" phaeton, first and second prizes, £11 18s.; Hon. C. S. Rolls, Panhard and Levassor car, first and second prizes, £11 18s.; Mrs. Kennard, Benz car, third prize, 17s. 6d. Best motor vehicle under 3 tons: Steam Carriage and Wagon Company, lorry, first prize, £17 15s.; Liquid Fuel and Engineering Company, lorry, second prize, £5 7s. Utility of vans, etc.: Dover and East Kent Motor Bus Company, convertible bus and lorry, first prize, £5 13s. 6d. Elegance of design: Automobile Association, Waverley Electric Stanhope, first prize, £5 13s. 6d.; Mr. Gretton, "Iveagh" phaeton, second prize, £2 9s. Excellence of parts: Clarkson and Capel Steam Car Syndicate, burner, condenser and automatic boiler feed, first prize, £5 13s. 6d. Cheques for the amounts will, we understand, be forwarded at an early date to those who duly qualified.

### "Engineering" and Motor-Cars.

IT is satisfactory to find that at least one of the weekly engineering journals is taking a rational view of the automobile industry. In commenting on the automobiles at the Stanley and National Shows last week our contemporary *Engineering* remarks:—"Although we do not look to the cycle shows for a big display of motor machines, yet there is sufficient to indicate that this method of locomotion is growing in popularity. We find a fair selection in various types, which says much for the enterprise of the firms who manufacture them. Four or five years ago, when firms like the Daimler Company laid out their shops with the newest English and American tools, to embark in the motor-car industry, many people shook their heads. Even now banter and adverse criticism do not appear to have had their last fling. Of course, accidents will happen, just as they do in horse vehicles, but the advantages of the motor-car are often overlooked, affording in this respect an interesting parallel to the objections which were made to railway travelling in the thirties and early forties. To the hundreds of people who cannot afford a horse and its keep, the car affords a substitute for pleasure or for business, while for continuous work the horse is not in it."

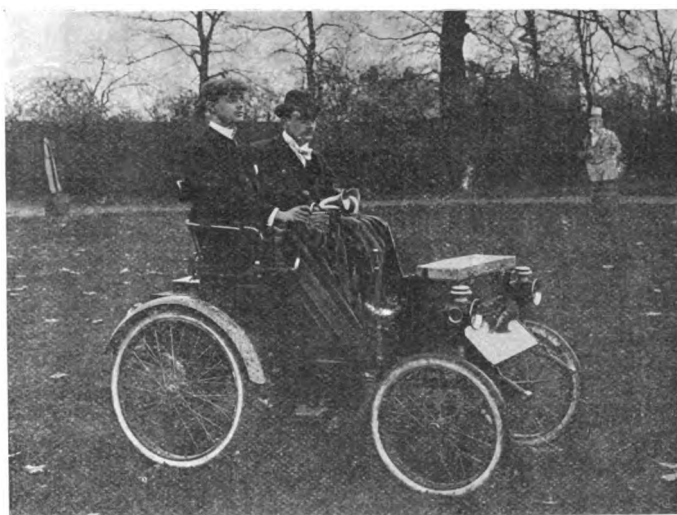
### Automobiles for Municipal Work.

SOME weeks ago it was announced in these pages that the Chelsea Vestry were inviting tenders for the supply of three motor-vans for the collection of refuse. At a meeting of the vestry last week it was stated that four tenders had been received, and that the prices quoted were £475, £490, £650, and £700 each. The surveyor was instructed to examine the various specifications and to report at the next meeting of the vestry. At Glasgow, too, something is being done in this direction, for

the *Glasgow Evening News* expects to see the Corporation motor dust-cart on the streets of Glasgow on an early date, the builders having the vehicle well in hand.

#### An Automobilist Councillor.

CONGRATULATIONS to Mr. Mark Mayhew who has wooed and won the constituency of Wandsworth on a motor-car. While his opponent drove round the district behind a couple of orthodox greys, Mr. Mayhew brought up voters in his automobile—with the result that he had 4,472 votes as compared with 4,240 recorded for Major Darwin. On the declaration of the result, Mr. Mayhew was “enthusiastically cheered and carried on the shoulders of some of the crowd to his motor-car.” Thus was the victory chronicled in Monday’s morning papers. Mr. Mayhew goes to the London County Council at a very opportune moment, for Mr. Benn, the chairman of the Highways Committee, is now considering whether the Council can, or cannot, concern itself with motor-vehicles. For



THE HON. C. S. ROLLS ON HIS PEUGEOT VOITURETTE.

[Photo by]

[Argyll Archer, Kensington.]

such points the new councillor for Wandsworth will be able to draw upon his practical experience for the benefit of his colleagues who are more used to cabs and broughams.

#### London's Roads.

MR. MAYHEW believes that the motor-car will play an important part in the elections of the future, especially in wide-spread constituencies, and has told an interviewer that he is “glad to go to the Council, because my experience has taught me that the roads in London are in a shocking state, and that they need looking to in the interests not only of automobilists, but of cyclists and other travellers as well.” If Mr. Mayhew—who by the way travelled to Brighton and back on his car on Sunday—will devote attention to that important department of municipal work he will earn the thanks of travellers of every description.

#### Horses at School.

MUCH has been said, and something has been done of late with regard to accustoming horses to stand quietly by automobiles and to look with calmness upon the motor-car. In an American magazine Mr. Sylvester Baxter raises the question, “Why not send the horse to school?” Not only should the animal be taught good manners when approached by an automobile, but “the course of training should comprise all possible things in the way of startling sights and sounds; the flapping of awnings; the flaunting of banners; the explosion of fireworks; German bands, and the like.” Why not? The idea could be extended by the granting of certificates, degrees or diplomas, to

the horses that attained a certain standard of indifference to motor-cars and other inevitable features of our roads in the future.

#### Our Drivers.

ARE the drivers for motor-cars as highly esteemed as their courteous bearing and steady conduct deserve? We see, from some of the newspapers published in the eastern counties, that attention is being drawn to the treatment received by motor-car drivers from those in charge of wagonettes on the route between Norwich and Catton. Apparently “it is the delight of the wagonette men to keep in the middle of the road so as to prevent the motor cars from passing,” and in other ways annoyance is given both at Norwich and elsewhere. Expostulation with the drivers of horse-drawn vehicles is useless. But seeing that both classes of vehicles are licensed by a public authority, a hint to their employers from the authorities should do good. Hence the necessity for automobilists combining in various localities to make their influence fully and influentially felt.

#### A Scotch Branch of the Automobile Club.

As already mentioned in this journal, a meeting of Scotch automobilists to form a Scotch branch of the Automobile Club is to take place at the Royal Hotel, Edinburgh, to-day, the 1st December. Members are invited to attend, and to introduce Scotsmen who are interested in automobilism.

#### A Case Dismissed.

MOTOR-CARISTS are so frequently convicted when they appear in court for alleged driving beyond the regulation limit, that when a case of such a kind is dismissed it is a matter of interest. A rider of a motor-tricycle has been before the Steyning Bench because a policeman fancied he had gone beyond twelve miles an hour. There was no further evidence other than the constable’s estimate, and, as the defendant asserted to the contrary, the Bench gave him the credit of the doubt. The Steyning bench of magistrates deserve our hearty congratulations on the possession of a fund of common-sense and fairness, not always to be found in such exalted associations.

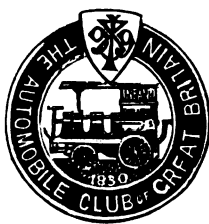
#### Motor-Cars at the Cycle Shows.

OWING to the great pressure on our space last week, we were compelled to hold over a number of illustrations of new cars shown at the National and Stanley Shows. The illustrations given on other pages this week include the Automobile Association’s “Waverley” electrical car, the Motor Carriage Supply Company’s Cannstatt-Daimler convertible victoria, Messrs. Allard and Co.’s “Express” car, the P. T. S. Company’s “Liliput” car, and the Wearwell Cycle Company’s car. Particulars of all these vehicles will be found in the report of the cycle shows which appeared in our last issue.

#### Motor-Cars in Canada.

IN a recent issue *Canadian Hardware*, in the course of an article on motor-cars, remarks that “the automobile industry promises to become ere long as active and extensive as the bicycle industry has been during the last four or five years. In Great Britain it has for some time been what may be termed a staple industry, and in the United States it is developing in a manner which promises to make the industry a gigantic one. In Canada the automobile industry appears also to have passed beyond the initiatory stage. Factories are springing up here and there. Toronto, which became the head centre of the bicycle industry, promises to become the centre of the automobile industry as well. Several large business firms have adopted automobile delivery waggons, and even ladies can occasionally be seen doing their shopping in automobiles.”

## AN AUTOMOBILE CLUB FOR MANCHESTER.



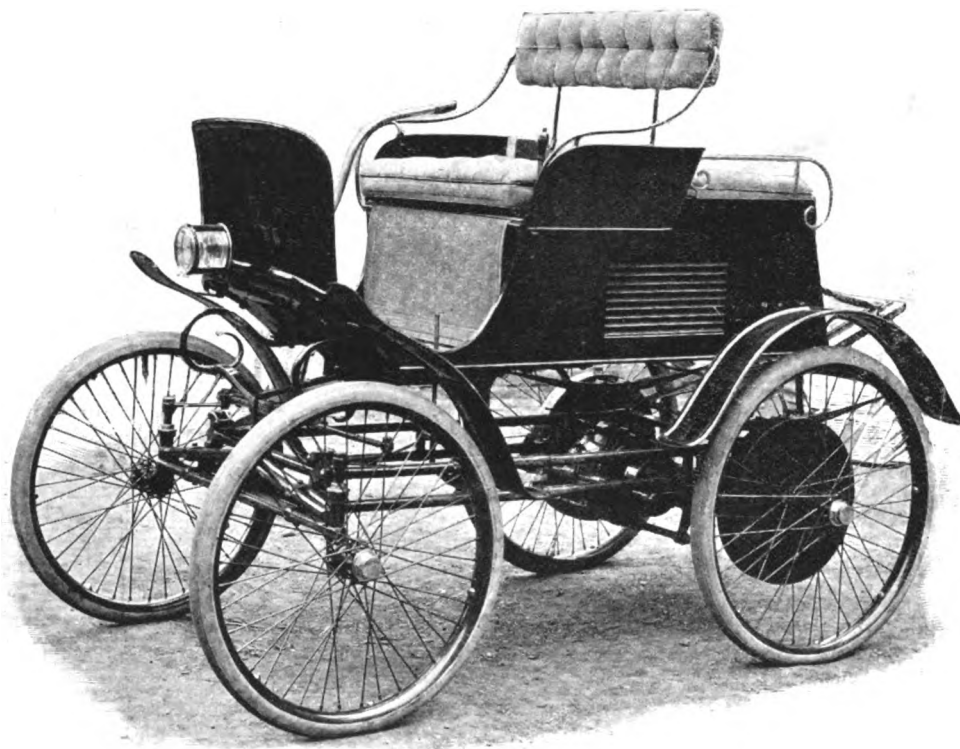
A MEETING was held at the Queen's Hotel, Manchester, on Thursday, the 23rd ult., to form a Manchester branch of the Automobile Club. Mr. Samuel Okell was voted to and took the chair, and among those present were Messrs. F. E. Baron, W. Bodman, C. T. Brown, John Cooke, W. Featherstone, F. Gresham, J. Harvey, A. J. King, Adam Laidlaw, James Lowe, J. J. Mann, J.

Marsden, R. Marsden, Thomas Myers, V. O'Neill, Sydney Norris, R. E. Platt, D. H. Simpson, J. T. Simpson, W. H. Taylor, W. le P. Webb.

Mr. C. Johnson, the secretary, travelled specially from London to attend the meeting, and explained the desire of the

objects generally shall be—(1) To provide a social centre in Manchester for automobilists; (2) To encourage automobilism in Manchester and the neighbourhood."

It was proposed by Mr. Samuel Okell, seconded by Mr. James Lowe, and unanimously resolved:—"That the Club shall be called 'The Manchester Automobile Club, being the Manchester branch of the Automobile Club of Great Britain and Ireland.' The Provisional Committee shall complete terms of affiliation with the London Automobile Club on some such terms as the following: (a) A small percentage of each members' subscription shall be paid to the London body in recognition of affiliation, and in support of the efforts of that body to prevent restrictive legislation, etc. (b) The subscription to the Manchester Branch shall not give the right of membership of the London body, but a member of the Manchester branch, if elected to the London body, shall have the rights of town or country membership of the London body, on payment of the town or country subscription for the time being, less one guinea, plus entrance fee, so long as he remains a member of the Manchester body, and resides



THE AUTOMOBILE ASSOCIATION'S "WAVERLEY" ELECTRIC CAR.

Committee, that automobilists in the provinces might form branches of the London Club, in order that all Automobile Clubs might be united in one organisation, and thus be enabled to bring the combined weight of automobile opinion to bear on the Government to prevent the introduction of further restrictions on the use of motor vehicles, and to secure the removal of some of the restrictions at present in force. He also explained the position of the A.C.G.B., that it was recognised as the authority in this kingdom on automobilism, not only by the Continental clubs, but by the Government Departments.

Mr. J. J. Mann, who was called on to move the first resolution, pointed out that had motors been the only form of locomotion known in this country, and had someone introduced horses for the first time, the same people who now object to motors would have objected to horses—to the noise of their hoofs, etc. He proposed the following resolution, which was seconded by Mr. F. Gresham and carried unanimously:—"That a club composed of automobilists and those interested in automobilism, residing in and around Manchester, be formed forthwith. The club shall not be used for the advancement of any particular person, firm, or company, but shall be independent, and its

within the Manchester district, the limits of which shall be here after decided.

It was proposed by Mr. Simpson (ex-Mayor of Halifax), seconded by Mr. O'Neill, and unanimously resolved: "That the following gentlemen be asked to serve as a provisional committee—Mr. Samuel Okell, Mr. J. H. Smith, Mr. F. Gresham, Mr. O'Neill, Mr. James Lowe, Mr. Marsden, Mr. D. H. Simpson, Mr. Harvey, Mr. Featherstone, with authority (1) To form a guarantee fund to cover initial expenditure. (2) To frame rules for subsequent submission to and approval by members. (3) To take the necessary steps to obtain members. (4) To take temporary premises, and arrange for a temporary secretary."

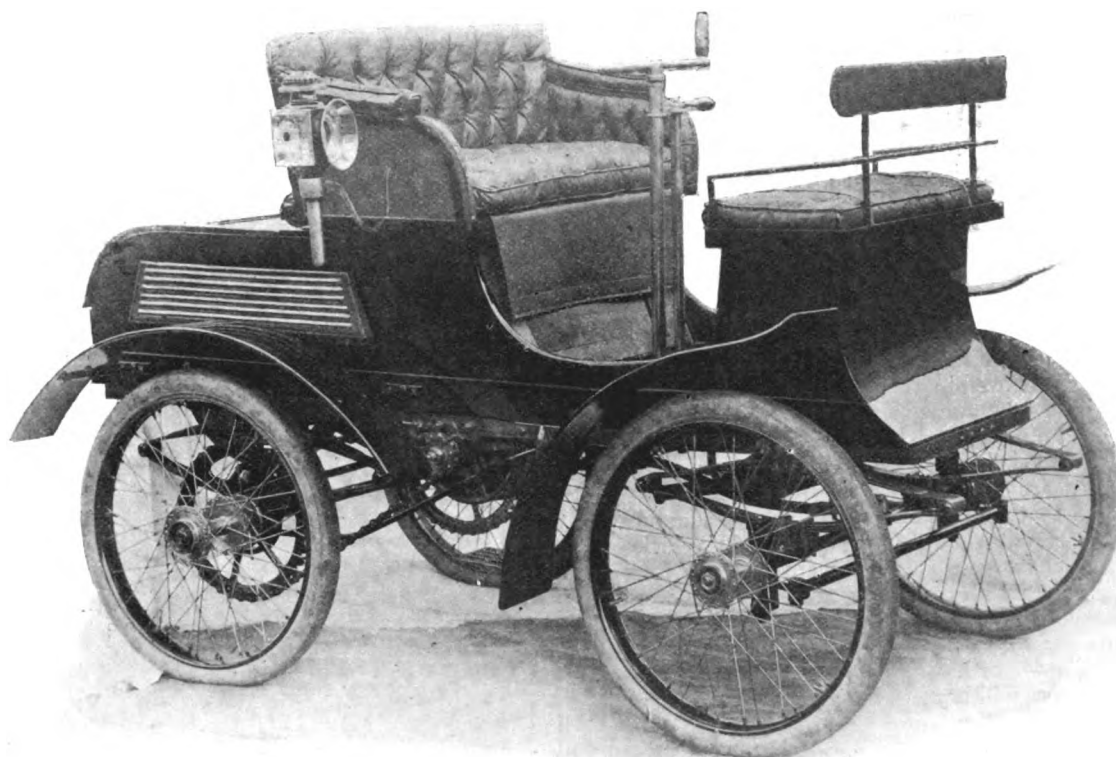
A vote of thanks to the chairman was proposed by Mr. Harvey, seconded by Mr. Laidlaw, and unanimously carried.

Mr. J. J. Mann is to be thanked and congratulated in respect of the initiative he took in calling the meeting.

THE Kondor Fahrradwerke Gesellschaft of Brandenburg, Germany, is increasing its capital from £20,000 to £50,000, with the view of taking up the construction of automobiles.



# The Allard "Express" Car.



MESSRS. ALLARD AND CO.'S NEW FOUR-SEATED CAR.

## MIDLAND MOTOR NOTES.



BY "HERCULES."

### The Future of the Industry.

I READ with interest the reference at the recent Motor Car Club banquet to the Mayor of Coventry's remarks as to the future of the motor industry. With the speaker, I am quite of the opinion that the motor industry is "well grounded," and that there is no fear as to its future. Still, I know there are a good many who doubt whether motor vehicles have come to stay, and whether the industry will ever reach the dimensions which many of us believe it will. To those who are not intimately connected with the trade, and who are not in a position to know what is really being done by manufacturers, the doubt is perhaps only natural. During next season these doubts will be dispelled, and the "infant" will be found to be running strongly for a front-rank place in our national industries. It is, however, very pleasing to find that the Mayor of Coventry is favourably disposed towards motor vehicles, and that he has no sympathy with the antagonism which is shown in many parts. A magistrate without bias towards motorists is an acquisition to any bench; his influence is sure to be felt in securing justice for motorists, and I could wish that there were a few more magistrates in the Midlands with as broad-minded views as Coventry's new mayor. His influence may be useful, too, in persuading his council to purchase motor vehicles for various purposes in connection with the corporation work. Other corporations are adopting the heavier type of automobiles for scavenging and other work, and Coventry, which is regarded as the centre of the industry, certainly ought not to be behind-hand in this matter.

### A New Concern.

THE Automobile Supply Company is the style of a new firm which has just been established at 56, Broad Street, Birmingham. The management is in the hands of Mr. F. Scarborough, who has had a lengthy experience with the Daimler Motor Company, and also in other ways in the trade. The new concern intends to carry a stock of motor-tricycle fittings of every kind; they are also laying themselves out to undertake all kinds of repairs to motor-cycles and cars. They have secured the agency for the Gaillardet petroleum spirit motor, which has already been illustrated in this journal. The engine, it may be remembered, is of 2½ h.p., and is provided with specially large cooling ribs.

### Motor Vehicles for Tradesmen.

MAKERS in Coventry are obviously devoting a good deal of attention to the construction of motor vehicles, which will prove of the greatest utility commercially. For some time manufacturers themselves have been conveying light goods to and from the railway station on automobiles, and they have been found to answer the purpose for which they were designed so thoroughly, and to have made so satisfactory an impression on the public, that they have been encouraged to anticipate excellent results in the near future. The other day, a motor-vehicle somewhat similar to a lorry or dray, but less weighty, was being used by one of the companies, and one could not help coming to the conclusion that such a vehicle would prove extremely useful to tradesmen. They have only to be convinced that motor-cars can be depended on, that they are easily managed, and are less expensive than horses, and no doubt manufacturers will have their most sanguine

hopes realised. It is not to be expected that tradesmen will be easily convinced of the superiority of mechanically-propelled vehicles over those drawn by that useful and long-suffering animal, the horse, but proof is not wanting that the day is rapidly approaching when "carriages without horses" will be in common use for trade purposes.

#### The New "Osmond" Car.

THIS week I have had an opportunity of inspecting the "Osmond Victoria," which was not at the stand of Osmond's, Limited, when I visited the Stanley Show. It is a very open car, with plenty of room for the two passengers it is designed to carry. The steering is controlled by means of worm gear; the car is fitted with "C" springs back and front, is provided with two speeds, and an air-cooled two-cylinder motor. I was pleased with the construction of the vehicle, and am anticipating a spin in the same in a week's time.

#### The Recent Cycle Shows.

I BELIEVE that everyone connected with the motor industry in the Midlands is relieved by the fact that the cycle shows for 1899 are a thing of the past. From the inquiries which I have made, my impressions of the show have been confirmed. Manufacturers generally are pleased with the results, and have good reason to believe that the industry will be considerably stimulated. At every stand where motor cycles and vehicles were exhibited the inquiries were very numerous. Nor were these inquiries unproductive, for in many cases orders were booked, and most of the vehicles exhibited found purchasers. As a consequence, manufacturers are preparing for the construction of motors and cars on a more or less extensive scale, and there is every probability that firms will be kept busily employed during the winter.

#### Local Authorities and Motor Cars.

DISTRICT COUNCILS in this part of the country are constantly receiving communications from authorities in the southern counties with respect to the speed at which light locomotives travel over their roads. A short time ago the Surrey County Council stirred up the interest of similar bodies in the Midlands, and the outcome of the deliberations of these august bodies was a resolution in favour of motor-cars being registered. The discussions also very plainly revealed the fact that some county councils are horrified at the quiet of the country being disturbed by motor cycles and cars, and, as has been well said, seem to have made up their minds that "the new industry should be strangled during its infancy in this country by the imposition of further restrictions" on users of motor vehicles. The voices raised in favour of motor vehicles not being unduly interfered with were few, but in one or two instances staunch supporters of the industry boldly declared that councillors desired to cripple the new movement.

#### Conform to Speed Regulations.

THE moral to this is obvious. Motorists must stand up in defence of their liberties, and must combine to resist restrictions which are not applied to carriages generally. The Automobile Club has already taken up the question, and should receive the support of all classes of automobilists. I have frequently pointed out that it is incumbent upon motorists to resist the temptation to dash along at top speed, and to proceed only at a reasonable pace, with full regard to the rights of all other users of highways, and the requests of owners of restive horses.

IN reference to the paragraph in our last issue regarding the Hon. J. Scott-Montagu, M.P., we have received a letter from Mr. P. Souvestre, of Liverpool, in which he states that he is, and has been for the last fourteen months, the official delegate of the Automobile Club of France in Great Britain and Ireland.

## THE "IVEL" MOTOR-CAR.



SOME time ago it was duly chronicled in these columns that a new motor-car was in course of construction at the works of Mr. Dan Albone, Biggleswade, Beds. We were afforded an opportunity of inspecting the new car ere it was completed, but in view of the many special features it comprises we postponed a description of the vehicle until it had been finished and put through its paces on the road. As will be seen from the accompanying illustration,

the car is arranged to carry four persons. One of the special features is the under-frame, which is constructed of steel tubing after the same style of that of the ordinary cycle, the arrangement of the tubes being such that the various strains to which the frame is exposed, both from the road vibration and that caused by the motor itself, are scientifically taken up, a double cantilever system being adopted. The frame is carried upon four spiral springs, those from the rear axle being contained in steel cylinders, which are raked



GENERAL VIEW OF "IVEL" CAR.

slightly forwards, so that the action of the springs may coincide with the lines of vibration from the wheels.

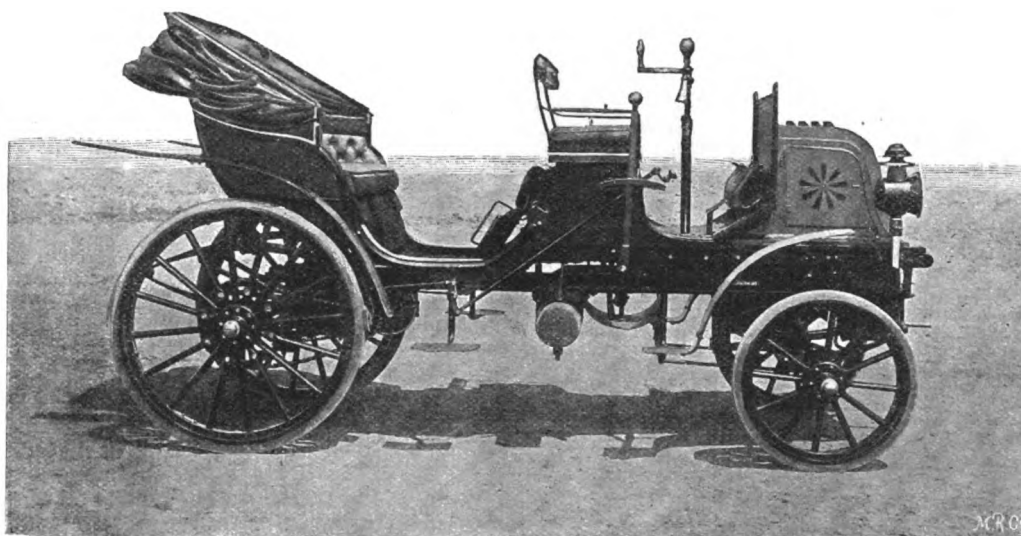
These cylinders serve another very important purpose. The sliding pistons upon which the springs act are sufficiently long to obtain an ample bearing surface in the cylinders, and thus prevent any movement of one spring taking place without a corresponding motion on the part of the other. The object of this arrangement is to secure that the chain-wheels are always in positive alignment, so that the wear upon the chains and the friction set up are greatly reduced. The front axle springs are vertical, and are designed to allow the wheels to rise or fall to accommodate themselves to the inequalities of the roads traversed.

The motor, which is of the Benz horizontal type of 3 h.p., with water jacket and electrical ignition, is located about the centre of the frame; its position is exactly reverse to that adopted in the Benz cars, that is to say, the combustion chamber, not the fly-wheel, is located at the rear of the frame, the motor thus running in the same direction as the car. Two speeds forward and one reverse motion are provided, the power being transmitted by straight belts from the motor shaft to an intermediary shaft behind the rear axle, and from the intermediary to the hind road wheels by duplicate Renold "silent" chains.

The "body" of the car, is mounted upon four C springs, and is entirely separate from the frame and working

parts. The occupants are thus completely insulated from the vibration, not only of the road, but from that due to the motor. Through the floor of the car, in the centre, rises a tripod of three tubes, which carry a round fibre flat plate, upon the face of which are three small levers for the mixture, throttle-valve, and electric ignition. Upon one of the uprights are the two levers for controlling the variable speed gear. The plate is slotted, and through it pass two long levers, one being that of the reversing gear, and the other for applying the tyre brakes. This lever, when pushed forward, automatically opens a switch, thus breaking the electric circuit and so stopping the motor. The steering is controlled by means of a handle and a disc, after the manner adopted in the Benz cars, but the standard is located well on the right-hand side, the connection to the front wheel steering lever being made underneath the frame by means of a chain.

Provision is made that the motor-car can be started from the driver's seat, it being possible to stop the car and start again at any time without having to get out of the car. Both water and petrol gauges are fixed in front of the driver, and everything is so placed that all the working parts can be easily got at without undue trouble, and any adjustments which may have to be made can be done in a few minutes. The bearings of the wheels are very large, ball bearings being employed wherever possible.



THE MOTOR-CARRIAGE SUPPLY CO.'S CANNSTATT-DAIMLER CONVERTIBLE VICTORIA.

The main brakes are applied by the foot of the driver, and expand inside the drums formed by the chain-wheels. These brakes, which take the form of double friction blocks, act both ways, so that, when on, the car cannot run backwards downhill. Both these brakes and those acting upon the tyres are provided with a compensating device, so that one side cannot be applied harder than the other. The petrol tank is carried under the front seat, and contains about nine gallons, while the water tank is also large, enabling the car to run a hundred miles without a fresh supply of water being required. Four cooling tubes with large mouths pass through the tank, and as the tank is well above the motor, no pumps are required to maintain the circulation. The chains and the motor are entirely enclosed—although in the illustration the casing is removed—so that the amount of cleaning required is reduced to a minimum.

The accumulators and induction coil are carried on the car in a box placed at the rear, and all the necessary tools are also provided for in this arrangement. The car is fitted with cycle-type wheels and pneumatic tyres; it weighs complete about 9 cwt., and is speeded up to a maximum of from 16 to 17 miles per hour, Mr. Albion's object having been the production, not of a racing car, but of a comfortable, easy-running vehicle, capable of maintaining a fair speed. In the course of a conversation with Mr. Albion at the Stanley Show last week, he informed us that the car had been subjected to a number of trials, the results of which have exceeded his expectations, both as to the hill-climbing capabilities and to the absence of vibration.

## CORRESPONDENCE.

### PATRIOTISM.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR, -In your last issue (November 24th) you have a reference to a run from London to Bath by Major Griffiths, and you remark, " . . . the Major . . . is apparently unaware of the progress lately made by British manufacturers, and imagines that the French have a monopoly of excellence."

Motorists who buy foreign cars surely display either ignorance of or unpatriotic prejudice against the British-made car, and neither is to their credit. They can know but little of British engineers if they imagine that cars cannot be turned out at home of quality at least equal to any produced abroad. To put it on the lowest ground, those people who have ventured their cash to start a new industry in England deserve, I think, that Englishmen should support *them* rather than throw money across the channel. Surely even if our British cars were inferior (which I have no reason to suppose for a moment) any patriot would prefer to keep his money in England. I am sure that they would not lose by their patriotism, and they will have the satisfaction of feeling that they have done a good work for

England in helping on what will become—all the quicker for their assistance—an enormously important industry. Yours, etc.  
Old Hill, Staffs.,  
November 28th, 1899.

MOCYCLE.

### THE CINEMATOGRAH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR, -At length we have crossed the border, and our first tour is gradually nearing its end. We have been favoured with splendid weather during the past week, and the daily rides have been most enjoyable. From Bellingham to Rothbury, about twenty five miles, was a very hilly journey, and the road in some places really bad. A portion of it was covered here and there with clinkers, and in riding over some of these one of our tyres got a nasty L-shaped cut, which it is quite impossible to repair with solution. The next day's journey was from Rothbury to Morpeth, fifteen miles, a good road, but a very windy day; and although Mr. Sinclair took every precaution with his burners, we could not prevent our lamps being blown out twice during the run. Morpeth to Coldstream, forty-six miles, was a capital run—done in six hours—the road being in splendid condition all the way. At Wooler the whole town turned out to see us, for I believe only one car had been through the place before. At Coldstream, too, considerable interest was evinced at our visit, and at first I had some difficulty in procuring a stable for the

car, but the keeper of the local fire-engine shed at last allowed us to put it alongside his engine, and together they made a very interesting pair. At Kelso, fearing we should be short of motor-car spirit for our run home, I made inquiries if anyone near had a motor-car, and I learned that Mr. Elliott, of Marlfield, has one, and he has kindly supplied me with some spirit, so we shall start off again to-morrow for St. Boswell's, then to Melrose, and on Friday conclude the tour by our journey to Edinburgh.

Yours, etc.,

Kelso, N.B.,  
November 29th, 1899.

T. J. WEST,  
Manager of the Modern Murrel  
Co. (Ltd.), of Edinburgh.

[Mr. West would do well to read Mr. Bruce-Porter's letter on the subject of lamps in the present issue.—Ed. *Motor-Car Journal*.]

## THE STARTING AND STEERING OF MOTOR CARS.

To the Editor of *The Motor-Car Journal*.

SIR,—I am sending you three negatives, two of motor-cars in Bedford, and one of one of these cars in Kempston. The cars I rode in at Pedford were, in my opinion, very carefully driven, and very punctual at starting.



With respect to accidents, can motor-cars be fitted with automatic steering like the old Cripper tricycles, so that the front wheels would recover themselves if suddenly deflected by any obstacle large enough to cause the driver to lose control of the steering?

May I also suggest the fitting of some labour-saving device for starting motor cycles, especially quadricycles.

Windermere,  
Harpenden, Herts,  
November 27, 1899.

Yours, etc.

CECIL JACKSON.

## WANTED A CURE.

To the Editor of *The Motor-Car Journal*.

SIR,—May I suggest to "Brown Heather" that the reasons the lamps on a Daimler car blow out are: first, the wicks as a rule are too tight; second, the door of lamp box at times closes and the lamps go out because they have not enough air. When I began driving my Daimler car the lamps used to go out fairly often. The late Mr. Sewell told me to see that the wicks were not too big, and Mr. Van Toll advised me to bend the door of lamp box across the front of the cylinder to prevent it closing. Since then I have driven thousands of miles and in gales and have never had a lamp blow out.

Langholm, Windsor,  
November 25, 1899.

Yours faithfully,

H. E. BRUCE-PORTER.

## MOTOR-CARS ON THE CONTINENT.

(From our own Correspondent.)

### French Automobile Club Notes.

At the request of numerous members the authorities of the French Automobile Club have decided to institute a fencing saloon, and accordingly one of the many spacious apartments in the club-house will be set aside for the purpose. Here, at a modest annual subscription, members will be able to take lessons from the well-known fencing master Ayat, and there is every indication that this privilege will be greatly appreciated and will tend to increase the number of members visiting the club. The Wednesday musical dinners continue to attract goodly attendances, and the performances of the capital orchestra, conducted by M. Bosc, are listened to with delight. The dullness, which at one time seemed to threaten the club, is rapidly disappearing, and usually the evening witnesses quite a gay and festive scene. The sports committee of the club has reminded organisers and other parties interested in automobile races, that on and after January 1st, 1900, all races, whether on the track or on the road, and all attempts at records, which are not organised under the club's rules will be prohibited, and that competitors taking part will be disqualified.

### Automobile Service in Russia.

SOME time ago there was despatched to Tiflis a 12 h.p. Panhard omnibus, purchased by a Mr. Kochariantz, whose idea was to institute a public service with the vehicle between Choucha and Khan-Bagin. Upon arrival of the car Mr. Kochariantz was compelled to apply to the governor of Tiflis for permission to commence the service, and thereupon a special commission was appointed to test and report as to the practicability of the vehicle. The result of the commission's examination having proved thoroughly satisfactory, the required permission has been accorded to Mr. Kochariantz, and the omnibus will shortly commence operations. May the experiment be perfectly successful and this first vehicle the forerunner of many others.

### The Gordon-Bennett Cup.

FROM Brussels it is announced that the Belgian Automobile Club intend to compete for the Gordon-Bennett cup next year, but that they will ask the "A.C.F." to modify the clause which stipulates that the car which first passes the finishing post will be declared the winner, and will gain the cup for the club which it represents, even if all the other cars competing for that club fail to finish. It is stated that the "A.C.B." will request that the times of each car representing the competing club shall be added together, and that the club showing the smallest total shall be declared the winner. It is not probable that this request will be acceded to, as the difficulties arising from the adoption of such a plan would undoubtedly be great and tend to complicate matters considerably.

### A New Fuel for Petrol Motors.

ADVANTAGE has been taken of the motor competition now proceeding at the works of MM. Malicet-Blin to subject a new product for use in motors at present employing petrol as fuel to a series of tests in a engine which recorded the exact amount of essence consumed. These tests have given excellent results, the consumption of the new fuel not exceeding that of the essence at present used, while the power developed was the same. The price is barely half that charged for petrol, being only twenty-five to thirty centimes per litre, as compared with sixty-five centimes per litre for the essence. The maker, who is director of a large firm of oil refiners, states that the product is a hydrocarburet that is not prepared from petroleum. As a result of the satisfactory tests it will be placed upon the market at an early date, and should have the effect of considerably strengthening the position of automobilism when compared

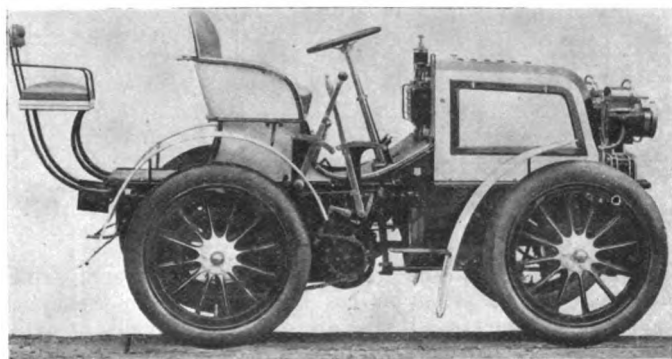
to animal traction, as the cost of running will be practically reduced by one half.

#### Automobile Club of Nice.

It is announced that the Duke of Leuchtenberg has consented to accept the presidency of the Automobile Club of Nice, and the club is to be congratulated on having been so signally honoured. The automobile movement in the South of France is developing at a rapid rate, due largely to the influence of this club.

#### The German Daimler Racing Car.

I MENTIONED some time ago that the Daimler Motoren Gesellschaft, of Cannstatt, Wurtemberg, had decided to take up the construction of racing cars. I am now able to send you a photograph of the first car turned out. It is fitted with a 4-cylinder Daimler motor, capable of developing no less than 23 h.p. Four speed and reverse motion are provided, the power from the intermediary shaft to the rear road axle being transmitted by chain gearing. The variable speed gear is so arranged that the friction clutch is automatically thrown out before a change is made in the gear. The ignition is on the magneto-electrical system of the company's own design. Special



attention has been devoted to the water-cooling arrangements, while no less than six brakes are available, two on the rear axle, two on the extension of the motor shaft, and two on the intermediary shaft. The car, which is fitted with stout pneumatic tyres, and inclined wheel steering, is stated to be capable of attaining a speed of no less than fifty miles per hour. I understand that the Daimler Motoren Gesellschaft is constructing a vehicle of this type to the order of the British Motor Company. No doubt the vehicle will be the centre of attraction when it reaches England.

#### The Automobile Industry in France.

ACCORDING to the "Annuaire Générale de l'Automobile" of France there are 619 manufacturers of automobiles in France, 998 dealers in them, and 1,095 repair shops. Of course, very few of those manufacturers, dealers, or repairers are exclusively devoted to the automobile trade.

A COMPANY has just been formed in Paris (231, Boulevard Pereire) to be known as Messrs. Peltier and Coquillard, to introduce a new motor-voiturette.

THE Société Royale Union Veloce Club Bruxellois has decided to hold a cycle and automobile exhibition in Brussels. It will be open for a week, and probably take place in March next.

A BELIEVER in the future of automobilism writes to an American paper that "it is a safe prediction that before the next century is in its teens the horse will be a curiosity in New York." We hope not.

TOWARDS the end of last week an addition was made to the stand of Messrs. Hewetsons', Ltd., at the Stanley Cycle Show, by the appearance of Messrs. Benz's 1900 model—the Duke car, illustrated in our issue of November 3 last. The new vehicle attracted considerable attention.

## THE AUTOMOBILE SECTION AT THE 1900 PARIS EXHIBITION.



ON Wednesday, the 15th November, M. Jeantaud laid before number seven committee of the Paris Exhibition of 1900 his elaborated programme for a series of competitions, races, and *fêtes* to be organised next year in connection with the automobile section of the exhibition, which section will be held at Vincennes, as the space available at the Champ de Mars would be quite inadequate for the requirements of the new industry. This programme, including a budget of estimated expenditure and receipts, was unani-

mously adopted by the committee, whose official report it thus became. It was then read to the members of the Committee of the Automobile Club, who decided to accept the organisation of the programme as provided for in the report, but only on condition that the directorate of the exhibition do not modify in any way the figures set out in the budget, and that the credit of £5,000, as required by M. Jeantaud, is duly made. The programme, as will be seen, comprises competitions for all classes of automobiles, and should prove one of the most attractive features of next year's exhibition. Briefly summarised, it provides for the following events:—In the month of May.—A competition for touring cars, consisting of daily trials of 150 kilometres during five days. The speed will not be permitted to exceed twenty kilometres per hour in towns and villages, and thirty kilometres per hour in the open country. The points governing the trials will be:—(1) Consumption of fuel; (2) Action of motor; (3) Comfort of vehicle; (4) Facility of steering. The competitors will be divided into four categories:—(1) Cars of two seats, weighing more than 400 kilos; (2) Cars of four seats; (3) Cars of six seats; (4) Cars of more than six seats.

In the month of June.—A competition for cabs and delivery vehicles carrying loads up to 1,200 kilos. Five daily trials during one week, the distance per day being 60 kilometres in Paris.

In the month of July.—A race for all these vehicles, divided into three categories, which are defined in the Automobile Club's racing rules of 1899. During one week, Thursday excepted, five races of from 300 to 400 kilometres each will be run. Starting from the enclosure at Vincennes the vehicles will promenade to Joinville, from which place they will commence to race. On the return they will be timed at Joinville, and will then proceed to Vincennes and promenade twice round the Daumesnil track. Particulars of their movements during the races will be exhibited at the track by means of semaphores, etc.

In the month of August.—A competition for voiturettes not weighing more than 400 kilos, and carrying two persons either side by side or tandem. The same programme as that for the touring cars.

In the month of September.—A competition for light delivery vehicles carrying a maximum load of 100 kilos. The same programme as that for the cabs.

In the month of October.—A competition for heavy vehicles coming under the following categories:—(1) Vehicles for the transport of passengers; (2) vehicles carrying merchandise weighing more than one ton; (3) vehicles carrying a minimum load of 1,250 kilos. The trials will consist of five daily runs of fifty kilometres each, starting from and returning to Vincennes.

In addition to these competitions there will take place on the track surrounding the lake Daumesnil, in the Bois de Vincennes, a series of sixteen automobile *fêtes*, comprising races and gymkhana events. Competitions for decorated cars will also be held, and towards the end of October all the competitors in the various events will process from the Exhibition to the Automobile Club's Villa in the Bois de Boulogne, returning to Vincennes the same day. This should prove to be a most imposing sight, as



every type of touring and racing cars, cabs, voiturettes, cycles, and transport automobiles will be represented.

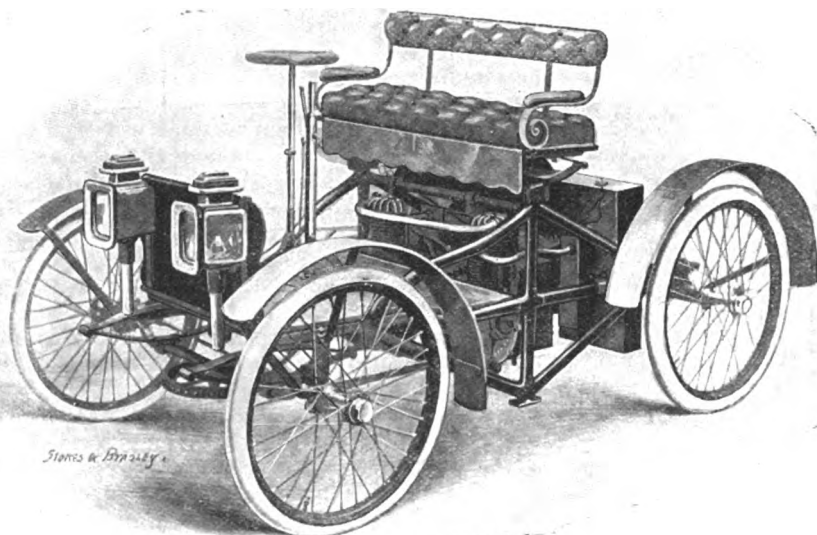
Every provision will be made to enable exhibitors to demonstrate their vehicles, and a special track will be constructed for the running of those cars unprovided with pneumatic or rubber tyres.

The estimate of expenditure as provided for in Monsieur Jeantaud's budget is £7,860, while the receipts are calculated at £2,880, showing a deficit in round figures of £5,000. These figures, of course, only relate to the programme of *fêtes* and races, and do not refer to the exhibition itself.

The opinion generally expressed is that the report is a truly excellent one, and should tend to make the automobile section of the Exhibition one of the most interesting features of next year's show. The attractiveness of the programme has gone far to dispel any fear which may have been entertained by some automobile manufacturers that the distance of Vincennes from the site of the Exhibition proper would be detrimental to the attendance of visitors. The opportunity afforded of almost daily witnessing the speed of the fleetest vehicles in their respective classes will assuredly be welcomed by next year's visitors to Paris, and once at Vincennes they will give plenty of attention to the manufacturers' latest productions.

MESSRS. POLLAND AND CO., 5, St. Nicholas-buildings, Newcastle-on-Tyne, have sent us a copy of their new price-list of the "Beez" Pocket Volt and Ampère Meters. These instruments have been on the market for only four or five months and are already largely in use. The last page of the list contains some useful information for automobilists as to the application of these instruments in connection with motor-cars, motor-tricycles, and in view of the increasing uses of dry cells for ignition purposes, Messrs. Polland and Co. do well to urge the importance of testing the cells frequently in order to ascertain when the current is falling below the relatively high ampérage necessary for ignition work.

MESSRS. WM. H. M. BURGESS, LIMITED, is the style of a company which has been registered with a capital of £2,000, to acquire any patents, and to carry on the business of manufacturers of and dealers in, and agents for the sale of cycles, and

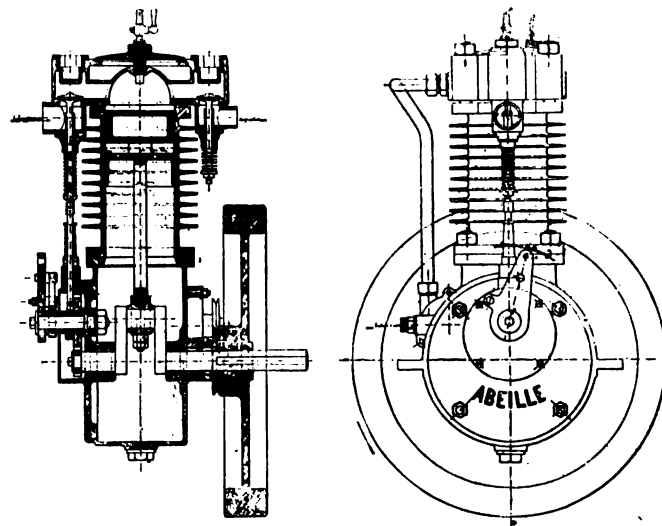


THE WEARWELL CYCLE CO.'S CAR.

vehicles, propelled by steam, compressed or liquid air, petroleum, gasoline, or other motive agent. The number of directors is not to be less than two, or more than five. The first are:—M. W. Bartleet, B. C. Wootton, and W. H. M. Burgess. The registered office is at 9, Farrington-road, E.C.

## THE "ABEILLE" PETROLEUM-SPIRIT MOTOR.

THE "Abeille" is the name given to a new petroleum-spirit motor devised by M. A. de Mesmay, and recently put upon the market by Messrs. Dalifol and Thomas, of 183 bis Faubourg Poissonnière, Paris. It is of the single-cylinder, vertical type, and is capable of developing 3 h.p. As will be seen from the sectional view, the valves are arranged on opposite sides in such a way that they can be quickly removed. The sparking plug is located close to the admission valve, so that



the spark is made in the centre of a fresh charge of explosive mixture. Special attention has been devoted to the cylinder-cooling arrangements. Radial discs are fitted round the cylinder proper, while the explosion chamber is provided with a water-jacket, the circulation being maintained by a small pump attached to the oil-containing crank cover and driven off the motor-shaft.

The exhaust valve is operated in the usual way by a cam on a small secondary shaft. One of the sides of the oil-containing chamber, that carrying the electrical contact breaker and the exhaust valve control gear, can be readily removed to give access to the crank and piston rod. The weight of the motor, including the pump, fly-wheel, and carburettor, is only 105 lb. The "Abeille" motor is being introduced into this country by Robertson's Autocar Agency, Woodstone, Peterborough.

It is rumoured that a motor-car company is about to be started in Dublin for the purpose of running motor vehicles on the streets.

THE Derby and District Motor-Car Company, Limited, has been registered with a capital of £5,000 to carry on the business of motor-car manufacturers and merchants, etc. The registered office is at 18, Wardwick, Derby.

A COMPANY has been incorporated in Delaware under the name of the Anglo-American Rapid Vehicle Company, with a capital of £15,000,000. The officers are Mr. W. W. Gibbs, formerly president of the Electric Storage Battery Company, of Philadelphia, president; Mr. F. D. Carley, vice-president, and Mr. Clayton E. Platt, secretary. According to one of our American contemporaries, "the English end of the scheme is no doubt the Pennington-Lawson combine."

## THE TOWARD HEAVY STEAM MOTOR WAGON.

IN a recent issue reference was made to a new steam motor-wagon, built for a firm of mine owners in Yorkshire by Messrs. T. Toward and Co., of St. Lawrence Works, Newcastle-on-Tyne. We are now able to give an illustration of the vehicle (Fig. 1) from which it will be seen that the wagon is mounted on a strong steel frame with horn plates (locomotive style); this in turn is, in the case of the hind end, suspended by spiral springs on axle-boxes, and a steel shaft, on which the steel road driving



FIG. 1.—THE TOWARD STEAM-WAGON.

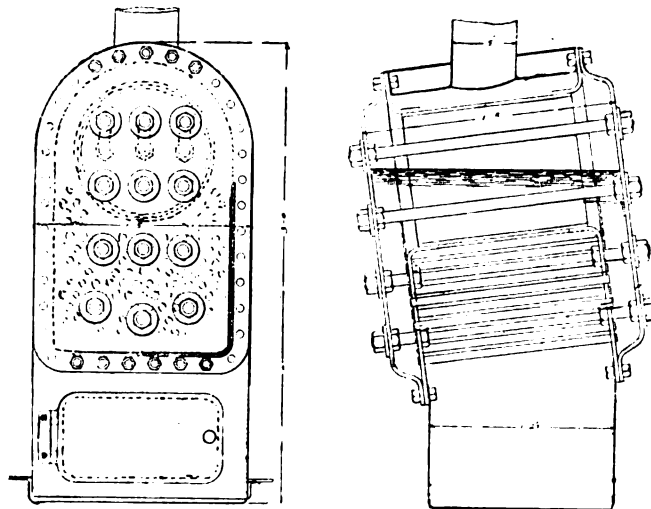
wheels are mounted. The front end is supported on a fore carriage with laminated springs and turn-plate on a steel shaft, and steel front wheels with special auxiliary iron tyres. The steering is controlled by a hand wheel, worm wheel, and chains on the traction engine principle. The coup is built of steel throughout with a swinging door behind, and, after being hinged to the underframe, is fitted with mechanical tipping gear for discharging its load. The vehicle is fitted with two independent brakes—a band brake on the intermediate shaft actuated by a pedal and one pair of hand brakes on the driving wheels worked by a lever. The propelling machinery consists of a pair of compound reversing horizontal engines, capable of developing 25 i.h.p., placed directly below the underframe and geared with two speeds (eight and four miles per hour) and differential gear to an intermediate shaft, which in its turn is geared direct with pinions into an intermediate spur-wheel on each driving wheel and entirely cased in, this dispensing with the usual chains and sprocket wheels.

Steam is supplied, at 200 lbs per square inch, by a Toward high pressure watertube boiler described below. It is placed right in front of the driver, as also are the manipulating levers and steering gear. The feed tank, which carries enough water for a twelve mile journey, is fitted below the underframe, and the feed pump is arranged so that the water can be pumped into the boiler by the main engine while the vehicle is standing. The exhaust steam passes through a filter tank, and then exhausts into the chimney, there being no visible steam while running.

An end view and longitudinal sectional elevation of the Toward light high-pressure boiler, the claims for which are high generative efficiency, lightness and compactness, and a high factor of safety, are shown in Figs. 2 and 3. As will be observed, the boiler is of simple construction, and consists essentially of two tube plates inclined sufficiently to promote a rapid circulation in a definite direction. These are connected at their upper portion by a single large tube, which acts as a steam drum, and at their lower portion by water tubes and by the requisite stay tubes, the water level extending up into the drum. Embossed steel plate covers or end doors

suitably stayed form the water pockets, into which the tubes open. By the removal of the end covers and the cleaning doors, on the side of the boiler casing, easy access is gained to all the tubes and drum, inside and out, for cleaning when necessary, or for repairs. The top and sides of the boiler are enclosed by a casing of light steel, which extends below the tube plates, and serves to form the furnace, and to support the grate. The boiler is generally lined with fire-brick, though where the greatest lightness attainable is not aimed at, water spaces may be used all round the furnace. That the boiler is a quick steamer is shown by the following particulars of a test made with a boiler of this type, measuring only 2ft. 2in. by 1ft. 10in., by 4ft. high, including ashpit, and fitted with 1in. steel tubes:—Lighted up coke fire, 1.18; water boiling from all cold, 1.32; 10 lb. of steam, 1.36; 20 lb. of steam, 1.38; 50 lb. of steam, 1.40; 100 lb. of steam, 1.41; 150 lb. of steam, 1.41½; 180 lb. of steam, safety valve lifted, 1.42; trial began with strong blast in chimney, 1.46; finished, 2.46. An "evaporation test" to determine the capacity of the boiler followed. Cold water to the amount of 615 lb. was evaporated in an hour, at a pressure of 190 lb. per square inch above atmospheric pressure, the steam being perfectly dry.

In a modified form of the boiler the back-water pocket is dispensed with, and in its place the back furnace casing-plate is perforated to receive and support the back ends of the tubes (which are closed and fitted with screw plugs), which project through it sufficiently to allow for any collection of deposit. In this way the boiler can be worked for long periods without fear of the tube ends being burnt. The front water-pocket is somewhat enlarged, the steam drum being retained, while in certain circumstances circulating tubes are fitted from the front of the reservoir. It is also possible to dispense with the steam drum, and somewhat further enlarge the front pocket, thus giving a further reduction in weight. Under all circumstances, however,



FIGS. 2 AND 3.—END ELEVATION AND LONGITUDINAL SECTIONAL ELEVATION OF TOWARD WATER-TUBE BOILER.

the boilers are substantially designed to work continuously under heavy work without giving trouble.

THE *Idéo* announces that the French Minister of Posts and Telegraphs will shortly supply motor-cycles to the postmen whose duty it is to take the evening mails to the railway stations.

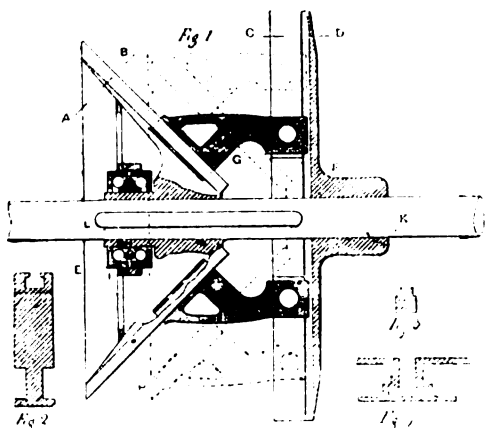
A COMPANY has just been formed in Paris (6, Rue Rochambeau), with a capital of £40,000, to be known as La Compagnie Industrielle d'Automobiles.

VVE. CH. JAEGER ET FILS is the style of a new concern which has just been formed in Paris (97, Avenue Choisy), with a capital of £16,800, to manufacture motor-cars.

ARRANGEMENTS have been completed at the Sheen House Club, Richmond, whereby petrol may now be obtained by its members.

## THE BUCHET VARIABLE SPEED GEAR.

ONE of the novelties at the recent French Motor-Car Exhibition was the variable speed gear for motor vehicles displayed by M. E. Buchet, of 170, Avenue Daumesnil, Paris, illustrations of which are given herewith. Fig. 5 gives a general view of the apparatus, which comprises two pulleys of variable diameter, one driven by the motor and the other actuating either the rear road axle or an intermediary shaft, the two



FIGS. 1 TO 4.—DETAIL VIEWS OF BUCHET VARIABLE SPEED GEAR.

pulleys being connected by a belt. Fig. 1 shows a section through one of the expanding pulleys which comprises the disc *F*, the inner face of which is provided with a series of slots or grooves radiating from the centre and extending almost to the periphery. The slots, which are visible in the left hand pulley (Fig. 5), are of the form shown in Fig. 4, which is a section on line *C'D* (Fig. 1). The disc *F* is keyed on the shaft *K*; the latter also carries a cone *E* in such a way that while the cone rotates with the shaft it is free to be displaced laterally along it. The displacement of the cone is affected by a fork or rack

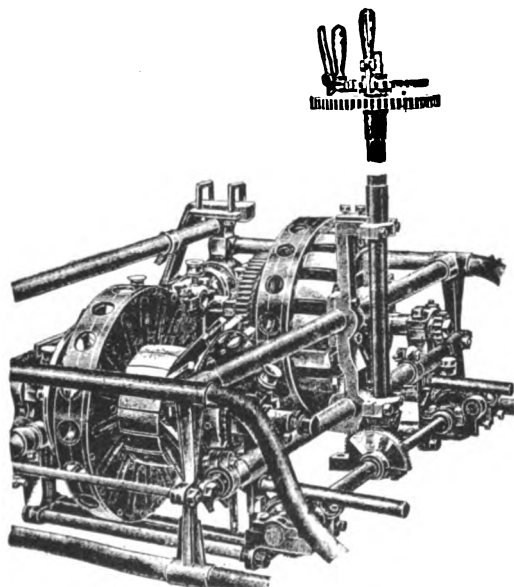


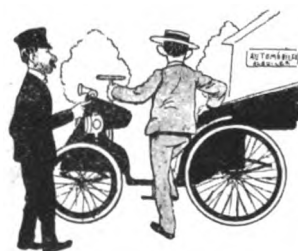
FIG. 5.—GENERAL VIEW OF BUCHET VARIABLE SPEED GEAR.

arrangement acting on the ball-bearing case *I*, rotating on a sleeve solid with the cone. A series of ribs, visible in Fig. 5, are formed on the outer face of the cone *E*, a section of the ribs through *A'B* (Fig. 1) being given in Fig. 3. The rim of the pulley proper is formed of a series of

sectors or "dogs," shown at *G* in Fig. 1 and in section in Fig. 2. It will be seen from the latter that the dogs are formed at one end with a groove corresponding to the ribs on the cone, and at the other end with a shoe which fits in the slots in the disc *F*. If, therefore, the cone *E* is brought nearer to the disc the dogs, being of an invariable length, will move away from the centre, as shown in dotted lines in Fig. 1, while as the cone *E* is drawn away from the disc *F* the dogs will return to their normal position. The general view (Fig. 5) shows the left-hand pulley to be at its smallest diameter—the dogs are in contact with one another. The right-hand pulley is at its largest diameter, the dogs having reached the periphery of the disc. For motor-vehicles the Buchet device is so arranged that as one pulley is contracted, by a suitable arrangement of the levers, etc., from the driver's seat the other expands, so that while obtaining variable speeds the belt is continually kept taut. By this arrangement, with a pair of pulleys in the ratio of  $2\frac{1}{2}$  to 1, a variation of speed of from 1 to 5 is available; thus, without varying the speed of the motor, rates of travel ranging from 8 to 40 kilometres per hour are obtainable by means of the apparatus.

As will be seen from Fig. 5, the manoeuvring of the gear is controlled by a small handle working on a sector, which controls, by means of bevel gearing, the forks connected with the two movable cones. On the sector is arranged a second handle. Ordinarily the latter is fixed; it is, however, connected with only one of the cones by separate gear, and is only brought into use when it is desired to put the motor out of gear with the transmission mechanism. This is effected by moving the second handle, the result of which is that only one of the pulleys is altered in diameter, causing the driving belt to immediately run slack.

## A PUNCTUAL GUEST.



Never mind about instructions



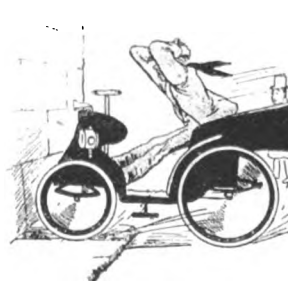
I can run the thing myself.



Whoa! Hold on there!



Will she never stop?



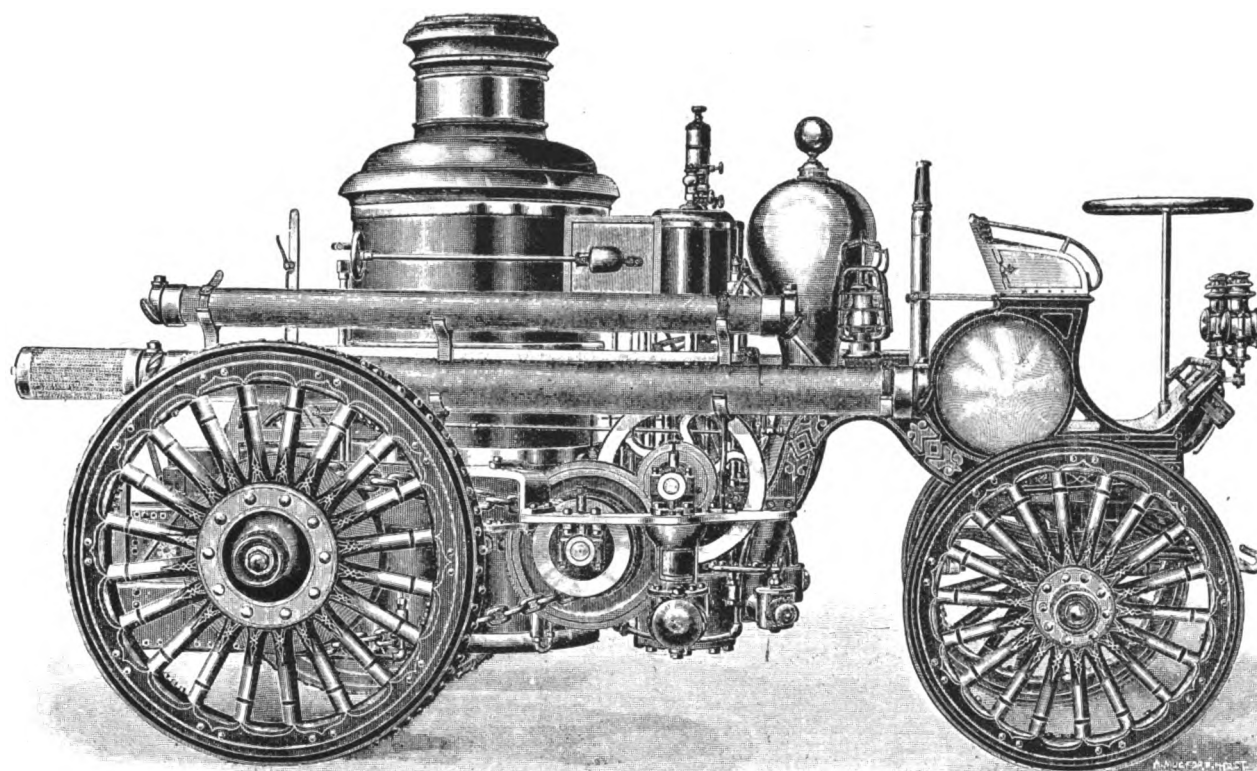
I can see my finish.



Am I in time?

(Laurels to Blaney Negro.)

# An American Self-Propelled Fire Engine.



IN a recent issue we published an illustrated description of a motor fire engine constructed by Messrs. Merryweather and Sons, Greenwich, for service in India, while now we are able to give an illustration of a self-propelled fire engine lately introduced by the Manchester Locomotive Works, Manchester, New Hampshire, U.S.A.

The boiler, as in ordinary fire engines, is of the upright tubular type, the shell being steel plate and the tubes of seamless copper. The power is transmitted from one end of the main crank-shaft of the engine, through an equalising compound and two endless chains, running over sprocket wheels on each of the rear road wheels, permitting the wheels to be driven at varying speeds when turning corners. The driving power is made reversible, so that the engine may be driven either forward or backward on the road at will. The steering of the engine is effected by means of a hand wheel at the front moving the fore axle through a system of bevel and worm gearing, so arranged that the constant exertion of the driver is not required to keep the vehicle in line on the road. By the removal of a key the driving power may be disconnected from the road-driving gearing when it is desired to work the pumps with the vehicle standing still.

The connecting mechanism between the steam cylinders and the pumps is of the familiar crosshead and connecting-rod type, and the pumps and other parts are of the kind generally utilised by this firm in the construction of ordinary horse-drawn fire engines.

WE have received from the Presto Gear Case and Components Company, Limited, of Frederick-street, Wolverhampton, a list of their productions in the way of carburettors, water, and petrol tanks, gear cases, condensers, differential gears, etc., for motor-cars and cycles, of which they are making a speciality.

AT the last meeting of the Spalding District Council a resolution was adopted that motor-cars should not proceed more than ten miles an hour, or six miles when rounding a curve, and should ring a continuous bell as they approached other traffic.

THE latest emanation from the fertile brain of Dr. R. J. Gatling, of Gatling gun fame, is an automobile plough. The machine will be built on the principle of the automobile, with disc ploughs so arranged as to do the work of the implements now in use with, it is claimed, greater facility and rapidity, and at a greater saving. He proposes to build the machine so that it can be operated by a single man. It will, it is stated, do the work of eight men and twelve horses. The propulsive power will be either petroleum or heavy oil.

"F. P." asks for the name of the very best motor-quadracycle on the English market. In view of the many exhibitors of such machines at the National and Stanley Cycle Shows last week, the question is rather a difficult one to answer. Most builders are employing a 2½ De Dion type motor, with slight variations in the construction and finish of the frame and "body," so that it is very much a matter of individual taste. The names of the leading makers of motor-quadracycles will be found in the report of the shows in our last issue.

MESSRS. BROWN BROS., LIMITED, Great Eastern Street, London, E.C., have just got out a fourth edition of their motor list. It contains particulars of the Whitney steam car, which attracted so much attention at the exhibition in July last, and of which Messrs. Brown have secured the English patents. Particulars and illustrations are also given of the Brown motor tricycles and quadracycles, the De Dion motor, as also of a large range of accessories, including lamps, horns, saddles, sparking plugs, etc. The catalogue concludes with a useful list, extending over six pages, of firms holding a stock of motor-car spirit in all parts of the country.

## CLAIM FOR WORK DONE.

At the Cambridge County Court the case Duck v. the Cambridge and Eastern Counties' Automobile Co., Ltd., was heard. The plaintiff, Mr. Wm. L. Duck, of 68, Regent-street, claimed £16 17s. 1d. for work done and money paid, and the defendant company made a counter claim for £31 5s. as being due from Mr. Duck as a member of the company in respect of 50 shares of £1 each held by him in the capital of the company.—Mr. O. Papworth appeared for the plaintiff; Mr. Bernard Lailey represented the defendant company.—Mr. Lailey said the defence was that there were no orders for the work at all, and, secondly, that the charges were excessive. As regarded some of the money paid, it was not paid for the company at all.—After hearing evidence and arguments as to costs, his Honour ordered the balance between the counter claim, £31 5s., and the claim, £16 17s. 1d.—£14 7s. 11d.—to be awarded the company, either side waiving the right to appeal.

## RAASCHOW v. THE LIQUID FUEL ENGINEERING COMPANY.

In the Queen's Bench Division on Saturday last, the plaintiff Theodor Raaschow, of 40, Great Smith Street, S.W., sued the defendant company, of East Cowes, Isle of Wight, to recover damages for breach of contract. The plaintiff was starting a new business in London, viz., the delivery of goods by means of steam motor-vans, and he ordered from the defendants two vans in order to carry on his undertaking. The price of the vans was fixed at £650 each net, and one-third of the purchase price (£433 6s. 8d.) was paid on the signing of the contract. The plaintiff's case was that the vans were not completed by the contract time, and when they were delivered were not properly constructed. One of them frequently broke down and stopped owing to the wheels "skidding" and the fire going out, and on three occasions it was said the police intervened and took the names of the builders. It could only be started again when it was pushed by the crowd of people who assembled upon a breakdown. On one occasion it was taken, it was said, down to Hammersmith, and then it ran down the High Street, half of it in the road and half on the footpath. In the course of its progress it knocked down two lamps, took away the awning in front of the music-hall, and finally came to a standstill before a public-house. The defence was that the motor vans were according to specification, and were properly constructed in every way, but that the plaintiff had not managed them rightly. The "skidding" of the wheels was said to be caused by the want of sand, which the plaintiff ought to have provided. The fires went out, moreover, the defendants said, because the van in question had been kept out in the open, and the rain had got down the funnel and rusted the boiler and igniter. The delay was caused by unavoidable difficulty in getting materials.

The learned judge reserved judgment.

## MOTOR CARS AND TRIAL TRIPS.

At Marlborough Street Police Court, on Wednesday, Mr. Moffat Ford, manager of the Motor-Car Company (Limited), 169, Shaftesbury Avenue, W.C., was summoned, before Mr. Denman, for keeping a carriage without a licence.

Mr. Logan, an officer of Inland Revenue, said that on the 21st September he saw the defendant in charge of a four-wheeled motor-car. He asked him to whom it belonged, and Mr. Ford refused to tell him. Subsequently the witness called upon Mr. Ford, and informed him that he would be summoned for keeping a carriage without a licence. The defendant replied that he would fight the case, as it would be a good advertisement.

Mr. Ford, in defence, said the wrong person had been summoned, as neither he nor the company were the owners of the car in question. The company, of which he was the manager, were in the habit of having motor-cars sent to them from Paris and various parts of England to sell on commission. He was in the habit of going short journeys on these cars to see if they were in proper working order, and the car in respect of which he was summoned was one that had been received by the company from Paris to sell. He was glad the case had come into court, because he was anxious to obtain the opinion of a magistrate upon it. The company were anxious to obey the regulations, and had corresponded with the Inland Revenue authorities on the subject. Having read some correspondence which he had received from Somerset House on the subject, Mr. Ford contended that the company could not be made to take out licences for cars that were sent to them to sell, and which were merely taken short journeys in the streets to ascertain whether they were, or were not, in working order.

Mr. Denman, in giving his decision, said that in the circumstances he did not think the defendant was bound to take out a licence. A carriage builder might have in his shop window ten or a dozen carriages for sale, and the mere use of one of them for a trial trip would not, he thought, render the man liable to be summoned in respect to such vehicle. The summons against the defendant would therefore be dismissed.

## FURIOUS DRIVING CASES.

At Kingston last week Mr. F. W. Moore, of Inglenook, Ditton-hill, Surbiton, was summoned for furiously driving a motor-car on the Portsmouth-road at Esher on November 12th.—Police-constable Pike said the defendant was going at the rate of about fifteen or sixteen miles an hour.—The defendant alleged he was only travelling at the rate of ten miles an hour.—Superintendent Boon, of the Surrey constabulary, said the attention of the police had been directed by the Surrey County Council to the furious rate at which motors were driven in Surrey, especially on the Portsmouth-road, which was fraught with great danger to the public, and in consequence of the great speed at which they travelled the police had great difficulty in stopping them.—The chairman (Mr. W. Y. Cockburn) said motoring was undoubtedly becoming dangerous to pedestrians, and as great a nuisance as cycling used to be.—The defendant was fined 20s.—Mr. Edward Wells, of Oxshott, was fined in a like amount for driving a motor-car after dark and not carrying a light.

At the Liverpool Police Court on Monday, Mr. A. C. Steen Neilson was summoned on two informations for having on the 18th and 19th ult. driven a motor-car at a dangerous rate of speed along Prince's-road. He was fined 40s and costs in each case.

## MOTOR-CYCLE RACING AT THE CRYSTAL PALACE.

ANOTHER meeting of the Motor-car Club took place at the Crystal Palace on Saturday last, and the attendance of visitors was much larger than on either of the two previous occasions. Two events were decided—a five-mile handicap and a ten miles scratch race. The former was won easily by Mr. C. G. Davis, who was conceded a start of four laps. Mr. F. F. Wellington (two and an half laps) was second, and Mr. H. du Cros, junr. (three-quarters of a lap) third. Eleven started, and Mr. C. G. Wridgway and Mr. C. Jarrott were on the scratch mark. Time, 7 min. 17 sec. Owing to some error in the lap scoring of the ten miles scratch race the two last-named riders, who were originally placed first and second respectively, agreed to run off a mile match as a decider. This was won by Jarrott, Wridgway being second, and H. du Cros, junr., third. The time for the 10-mile race was 16 min. 37 1/5 sec.

## TIMBER WAGGON v. MOTOR CAR.

BEFORE his Honour Judge Emden, at the Maidstone County Court on Wednesday last week, Mr. Robert Batchelor, timber merchant, of Maidstone, claimed £5 11s. 6d., representing the damage alleged to have been occasioned to a timber tug through the negligence of Mr. William Henry Kitto, of London, the defendant. Mr. A. J. Ellis, who represented the plaintiff, said that while several men in his client's employ were going along the Ashford Road towards the town with a timber tug drawn by four horses, a motor car, driven by the defendant, came sharply round a bend in the road and startled the animals, the result being that they turned sharply round and broke the shafts of the timber tug, besides doing other damage. The motor car, instead of keeping on its near side, was almost in the centre of the road, and there was no doubt that defendant's negligence in driving brought about the accident. Thomas Avenall, William Avenall, and Robert Blunt, who were in charge of the horses, bore this out, and stated that the animals were being properly led at the time of the accident. Cross-examined by Mr. Grimwood Mears, barrister, who defended, the first-named witness said he held up his hand as a signal for defendant to stop when the motor-car was a few yards off, but defendant did not take any notice of him. For the defence, defendant stated that the accident occurred about a mile out of Maidstone, close to the L.C. and D. Railway bridge. He was travelling to Folkestone at about eight miles an hour at the time. He noticed when he was some distance off that there was no one in charge of plaintiff's front horses, and he called the attention of his wife, who was with him, to this fact. Just as he was passing them the leading horse suddenly turned round in the road, and he immediately pulled up his car. Had the horses been properly led there would have been no accident. His Honour, in giving judgment, said that a much greater degree of care must be exercised by the drivers of motor cars than by the drivers of ordinary vehicles. It had been admitted in this case that the defendant's car was travelling at the rate of eight miles an hour, but it was questionable whether that was a safe speed for it to travel round a corner. He had come to the conclusion that the plaintiff's men were exercising proper control over the horses when the accident occurred, and that the defendant ought to have observed the signal which was made to him. He should, therefore, give judgment for plaintiff for the amount claimed, with costs.

A MEETING of motor-car manufacturers is to be held at the Automobile Club on Monday next, the 4th inst., to consider the rules for the projected 1,000 mile trial.

"HEARTH AND HOME" has joined the ranks of the journals which give space to automobile affairs. It had some interesting notes last week about ladymotorists, their doings and projects.



# THE Motor-Car Journal.

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## COMMENTS.



THE Yeovil Rural District Council is endeavouring to inflict some new regulations on automobilists, and is circularising similar bodies throughout the country on the subject. The alterations propose that the maximum speed be reduced from 12 miles an hour to 10; that when within 100 yards of an acute curve or junction of two roads, or a of horse on the highway, the speed shall not exceed six miles an hour, or, if the locomotive weighs more than two tons, four miles; that when about to overtake any beast of burden or vehicle audible, continuous warning of approach shall be given when within 100 yards; and that every light locomotive shall have a denoting mark or number so placed as to be at all time legible. Doubtless those who drew up these new suggestions regard themselves as great reformers and preservers of the highways and bye-ways of their native land. We hold a contrary opinion. The idea that on seeing a horse, speed is to be reduced to six-tenths of what the Yeovil councillors regard as reasonable is not novel, nor does it add to the safety of life on any such roadway. Further, that a continuous noise is to be maintained to frighten horses and startle other animals to flight is adding a terror to which the automobile is now comparatively free.

### Views of Local Bodies.

THE reception that these suggestions are meeting in various parts of the country is interesting. The Town Council at Chelmsford has referred the matter to the local police, and the rural council of the district has instructed the clerk to look into the matter with a view to a report at a later date. At the Chippenham District Council it was agreed by the casting vote of the chairman to support these proposals, while at Eastbourne the rural council unanimously decided to endorse the Yeovil proposals. The Middlesex County Council is considering the matter with a view to an appeal to the Local Government Board to issue regulations providing for the more easy identification of light locomotives, and at the last meeting it was decided to refer the matter to the General Purposes Committee for report.

### Educating the Councillors.

UNFORTUNATELY rural and district councillors have little idea of the control which drivers are able to have over their vehicles, and their views have been prejudiced by the exaggerated accounts of accidents which have been given in local journals with marvellous persistency during the last few years. Many are connected with the breeding and rearing of horses; their predilections are against innovations of so great a character as the automobile, and altogether they are

certainly not the class of persons likely to properly appreciate the merits and good behaviour of the motor-car. Recognising that the subject is one for educational efforts the Automobile Club Committee is suggesting that its members should place their cars at the disposal of members of County Councils so that they can obtain a personal knowledge of the stopping and guiding powers of motor-vehicles. The idea is a good one, and should be adopted generally, not only with regard to county councillors, but local public men of every kind might be invited to take a ride on a motor-car so as to enable them to become acquainted with its reliability and safety. Something of the kind will have to be adopted universally if any organised attack is made by local authorities.

### The Chelsea Tenders.

SEEING that the Chelsea Vestry is the first to invite tenders for the supply of motor vans unusual interest attaches to the report of its surveyor upon the same, which we give on another page. As one who is not interested in the automobile industry—beyond the desire to secure economical and efficient work for his board—Mr. Higgins rightly recognises that the motor van industry is seriously crippled by the three-ton limit, and it is to be hoped the agitation for its limitation will be successful; otherwise the Local Government Board must continue to neglect to carry out the law, thus placing the industry at the mercy of officialdom. In a concluding paragraph Mr. Higgins points out that "in considering the price of a motor-van it must be borne in mind that each vehicle does the work of at least two or two and a-half horses and carts (possibly much more), so that the three vans advertised for would represent more than seven horses and vans, and would not wear out the roads, nor make them require cleansing, as the seven horses do. When the matter is looked at from this point of view, and when it is remembered that the machinery of a motor can always be repaired, while horses are but mortal, in spite of the characters which horse dealers give them when they sell them, a large capital expenditure may be a wise outlay and in the end be the least costly policy for a local authority to adopt." We shall be glad to hear of other local authorities following the enterprise of Chelsea.

### More Automobile Club Runs.

THE inspection of the route for the Automobile Club's 1,000-mile trial will commence on Thursday, the 14th inst. Members who may be disposed to join in the run to Bristol are invited to meet at the Club, on the 14th inst., at 7 a.m. Breakfast will be taken at Maidenhead (27½ miles from London), and lunch at Marlborough (75½ miles). Members can then either turn back to town or continue the journey to Bristol. Tea will be taken at Bath (107 miles), and the night will be spent at Bristol (119 miles). On Saturday, the 16th inst., inspection will be made of that part of the road which lies between Bristol and Birmingham (85½ miles).

### The Automobile Club's 1,000-Mile Trial.

A MEETING of manufacturers and members who intend to take part in the 1,000-mile Trial was held at the Automobile Club, on Monday, the 4th inst. Draft rules for the 1,000-mile Trial, which had previously been circulated to those concerned, were discussed and amended, and recommended for adoption to the club committee. Sir David Salomons, Bart., the chairman of the Foreign Relations Committee of the A.C.G.B., has received a letter from Baron de Zuylen, the president of the A.C.F., stating that the French Club will give a silver-gilt medal, a silver medal, and a bronze medal, in connection with the trial.

### "Traffic Regulation."

THE next House Dinner at the Automobile Club is to be held on Wednesday next, the 13th inst., when Sir Richard Webster, Bart., the Attorney-General, will take the chair. After the dinner, Mr. R. E. Crompton will read a paper on "Traffic Regulation; and the speed of Motor Vehicles on the Highways." Amongst others who have promised to be present is Colonel Sir Francis Arthur Marindin, R.E., K.C.M.G., Board



MR. FRANK BUTLER ON HIS MOTOR-TRICYCLE.

Photo by)

[Argent Archer, Kensington.]

of Trade Senior Inspector of Railways. The dinner will begin at 7.30, and the discussion will follow the reading of the paper, at 9.15.

### Motor Cars for Newspaper Delivery.

Now that newspaper managers are employing the automobile in the conveyance of their wares, the conversion of newspaper men generally cannot long be delayed. In the contest between the rival Sunday daily papers a few months ago, motor-vehicles played their part in an experimental way. At the present time considerable development in this direction is being made, the result of which should be to provide a further outlet for the activity of our manufacturers. The proprietors of the *Weekly Dispatch* and *The Referee* have arranged to send motor-cars with their special editions on Sundays containing the latest

war news to the outlying districts of the Metropolis. In this way the residents of Richmond and Teddington, on the one hand, and of Tottenham on the other, were able to obtain the latest news on Sunday within an hour of its publication in town, and the experiment is to be repeated next Sunday. The proprietors of the *News of the World* have also bought a motor box van, after having thoroughly tested its capabilities during the past few months, not only in the delivery of papers, but also in the conveyance of their advertising boards, etc., to their destination. In this latter service it has gone through many counties fully sustaining the prestige of automobiles for heavy work. The London Motor Van and Wagon Company, Limited, have supplied all the vehicles here referred to, and are to be congratulated on the way they are practically interesting the newspaper world in our industry.

### A Convert.

WHILE newspaper proprietors are thus recognising the new form of locomotion on ordinary roads journalists are being converted. The latest to publicly declare that a motor-car is capable of providing "a glorious experience" is the gentleman from the *Pall Mall Gazette* who attempted to go to Brighton on an automobile on the occasion of the run of the Motor-Car Club. He now acknowledges having made the journey a few days ago at a pace of—well, it is hardly necessary to say more than that, in the *Pall Mall Gazette* of the 30th ult., he confessed his rapidity of travel after having crawled through Croydon.

### The President and the Motor-Car.

"PRESIDENT MCKINLEY has tasted the joys of a ride in an automobile." Thus does an American contemporary record the fact that the chief man in the United States has been seen in the Stanley steam carriage—evidently the vehicle to which Sir James Pender referred at the Automobile Club dinner a few weeks ago. In the present issue we publish a full description, with several illustrations, of the famous Stanley car.

### Training Police Horses.

THOSE who participate in the Motor-Car Club's run to Brighton will remember the way in which a few gentlemen were taking advantage of the "meet" to educate their horses. The idea is evidently being well taken up in various parts, for we hear that the mounted police in the neighbourhood of Barnes are wisely familiarising their horses to both motor-cars and motor-cycles. A correspondent informs us that he has been frequently asked by the patrol to allow the horse to trot alongside his motor-tricycle, in order to accustom it to the sight and sound. By encouraging such educational efforts automobilists can do a good deal to further the interests of the industry.

### Prizes for Inventors.

WITH two clubs doing all they can to further the interests of automobilism, and with several provincial societies in course of formation with a similar end in view, the future of the motor-car industry must be regarded as of great importance—even by those who regret its growth and development. The 1,000-mile trial of the Automobile Club will do much to show the advance that has been made, and the offer of substantial prizes to British inventors by the Motor-Car Club will be another incentive in the right direction. Full particulars of the latter competitions can be obtained from the secretary of the Motor-Car Club; meanwhile we may say that there will be four first prizes of £100 and four second prizes of £50 in cash. One satisfactory feature of the affair is that the prize-winners will retain their interest in the inventions, and if such assistance is desired the club will assist them to get their inventions properly patented throughout the world. Two of the prizes will be for a deodorizer suitable for a motor-car, and made, if possible, so that the smell from the

exhaust is practically extinguished, whatever odour remaining being converted into a means for disinfecting the streets from the smells consequent on horse traffic. An automatic starter and automatic ignition are other subjects of competition, and two prizes are also offered for the "simplest and cheapest construction of motor-cars of a feasible and practical kind suitable to be manufactured in large quantities." We hear that a very strong committee is being formed to adjudicate on the competitions, which should certainly result in giving an impetus to the British motor-car industry.

# **Warning to Automobilists.**

THE Automobile Club Committee have under consideration a proposal that they should not organise any club runs unless members taking part in them by doing so undertake that within certain areas they will keep behind a leading car, and will strictly avoid passing the motor carriage which may be in front of them, or running abreast within such area. An attempt at such an understanding was made in connection with the recent run to Brighton, but the best intentions of members were upset by a member who, arriving late, did not hear of the arrangement, and passed, at a high speed, the whole of the line of carriages before the party had got clear of the London streets.

# **The Haulage of Goods.**

MR. H. WILCKE has written, and the Liverpool Booksellers' Co., Limited, have published, an ingeniously written pamphlet on "The Haulage of Goods on Common Roads." One thing we would criticise adversely is the too plenteous use of italics—an old-fashioned means of emphasis that should not have been employed in advocating anything so modern as motor-wagons. Mr. Wilcke shows how automobiles could be employed for transport where railways are out of the question, and where the expensive character of light railways militates against their construction. The author proposes that an experimental service should be established between Liverpool and Manchester, and also suggests a motor-train to be used on the high road. This would consist of a traction engine, provided with special boiler power, then three motor-cars and six ordinary trailers. Unfortunately the pamphlet is marred with a tone so adverse to railways that one might almost suspect Mr. Wilcke to be attempting to supersede them instead of advocating a supplementary service.

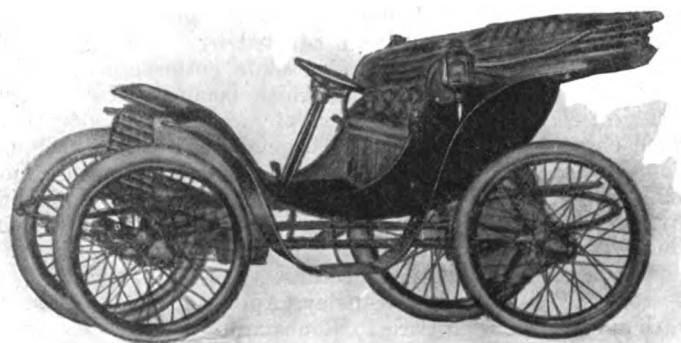
# **A Knight's Opinion of the Motor-Car.**

SIR GEORGE DOUGLAS, regarding the automobile as a feminine, seems to have concluded that she is an uncertain "animal." That at least is the concluding idea of his otherwise appreciative article published on another page. But all through the sketch runs such a favourable tone, that readers will be unprepared for the ending. He recognises that horses are becoming well-behaved in its presence, that the motor-car is now well under control, that the pace was fair and reasonable, and that the cost of his trip was not excessive. Why then try and endorse a statement as to its unreliability, which experience would disprove and hundreds of people can safely deny?

# **The "Lady" Motor Voiturette.**

UNDER the name the "Lady," Mr. Henry Cave, of 38, Ford-street, Coventry, is about to put on the market the neat two-seated motor voiturette shown in the accompanying illustration. The motor, which is of the  $2\frac{1}{2}$  h.p. De Dion type, is enclosed in the front casing. The power of the engine is transmitted through a clutch and change-speed gear of the sliding key type and a "Stow" flexible shaft to a reversing gear and speed-reducing wheel situated on the back axle. The large spur wheel of the reducing gear is journaled on the frame carrying the differential gear, and drives the latter through springs which, it is claimed, greatly assist the starting and speed changing. Three speeds, the highest of which gives 16 miles per hour, are provided, while

it is possible to reverse at any speed. A Longuemare carburettor is employed, and, with the petrol tank, is situated in the motor casing, the latter being so arranged as to direct a maximum amount of air on to the cooling ribs of the motor. In order to facilitate the mounting and dismounting from the driving seat,



the steering column is arranged on a transversely-pivoted seating, so that it may be turned forward out of the way; a catch is employed to hold the column in its normal position for steering purposes. Advantage is also taken of the special arrangement of the steering column to form a motor-starting device, so that the driver may start the motor when seated in the car. All the control handles, etc., are situated on the steering column, thus allowing the hands to be covered by a rug when driving. The total weight of the car is  $5\frac{1}{2}$  cwt, the length being 7ft. and the width 4ft. 3in. The wheels are 28in. diameter. This is the second motor-vehicle we have noticed during the past few weeks in which the power of the motor is transmitted by a flexible shaft. It would be interesting to learn how this method of transmission answers in practise.

# **A German Novelty.**

A GERMAN firm—Herr Hugo Mayer, of 54, Kurfürstendamm, Berlin—has lately brought out the novel single seated carriage illustrated herewith, the object being to provide a more comfortable machine than the usual motor-tricycle. The motor is of the ordinary type used on tricycles, but is, conjointly with all its appendages in the way of petrol tanks, etc., carried on a tubular frame, which also forms the support for the single front driving wheel, to which the engine is geared by means of spur wheels. The carriage portion of the combination is an ordinary "trailer," it being connected to the tractor by means of a "head" of the type adopted in bicycle construction. Steering is controlled by



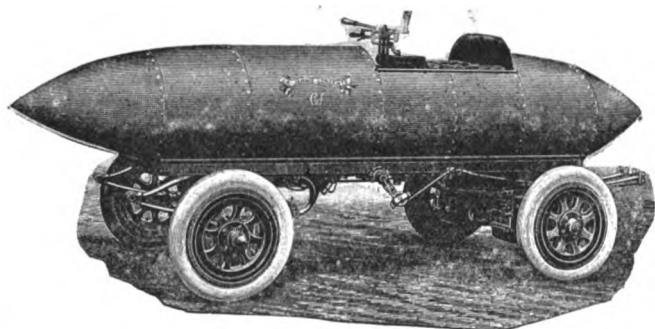
means of a long bar on which the control levers are mounted. The maker points out that the carriage can be quickly detached from the tractor, and a parcel-carrier with driver's seat substituted, thus providing a double-purpose machine for tradespeople, etc.

## MOTOR-CARS ON THE CONTINENT.

(From our Own Correspondent.)

### Races in 1900.

THE present flourishing condition of the automobile industry in France is largely due to the generally favourable attitude adopted by the Press, coupled with the absolute enthusiasm of certain journals, which manifests itself in such practical forms as the promotion of races and the dotation of handsome prizes and awards. Among the papers which have done, and are still doing, their utmost to further the cause, none rank higher than *Le Vélo*, and this journal's energy is exemplified by the list of competitions and races which it will promote during next year. This list has been recently published, and embodies many interesting features. The first event of the season will be decided on Sunday, April 15th, and will be the fifth annual race from Paris to Roubaix, in which a category for motor cycles will be reserved. The distance to be covered is 288 kilomètres; the entry fee is five francs, and the entries will be received up to mid-day, April 9th. Prizes of 500, 250, 150, 100, and 50 francs are offered. On Thursday, April 26th, a competition for electrically-propelled vehicles will take place over a course from Paris to Dijon. Entries, accompanied by a fee of 100 francs, will be received up to mid-day, April 23rd. This competition is distinctly original, as all the vehicles entered, whether light or heavy, big or little, will compete on the same footing. Despatched from Paris they will be required to travel



M. JENATZY'S ELECTRICAL RACING-CAR "LA JAMAIS CONTENTE."

along the route to Dijon until they can proceed no further. The car which last ceases to move, provided it has averaged sixteen kilomètres per hour, will be declared the winner. Thus, this competition is really a test of capacity, and although many objections as to the entire fairness of the scheme will doubtless be raised, still the idea is too good to be dropped, and it is to be hoped that the promoters will receive sufficient support to enable the event to be decided. The next automobile event will be held on Thursday, May 3rd, and will consist of the fourth annual motor-cycle competition between Etampes and Chartres. The distance is one hundred kilomètres, the entry fee 20 fr., and engagements will be received up to Tuesday, May 1st, at mid-day. Prizes ranging from 200 fr. to 1,000 fr. are offered. This will be followed by an event over the same course reserved for voiturettes weighing not more than 400 kilos. Thursday, May 10th, is the date fixed, and entries will close on the previous Tuesday, the fee being 20 fr., and the prizes of the same value as those for the motor-cycles. Again, on Thursday, May 17th, the motor-bicycles will be afforded an opportunity to display their prowess over the same route. This event will only be open to motor-bicycles not exceeding 40 kilos. in weight. Entries will close May 15th, at mid-day; fee, 20 fr. Wednesday, May 23rd, will witness the Derby for automobiles. Paris to Bordeaux in a single stage of 568 kilomètres is no light undertaking even for a French racing automobilist, but each year witnesses increased entries for the historic race. The categories will be: Cars, entrance fee, 200 fr.; small cars (less than 400 kilos.), 150 fr.; motor cycles, 100 fr. Names of intending competitors will be received up to May 19th. The final competition, which *Le Vélo* will promote next year,

will be the race up the hill of Gaillon, and this will be decided on 11th November. The categories will be:—(1) cars weighing more than 400 kilos.; (2) cars weighing from 250 to 400 kilos.; (3) cars weighing less than 250 kilos.; (4) motor cycles weighing less than 150 kilos.; (5) motor cycles of two seats (occupied); (6) bicycles; (7) chainless. The entry fee is 10fr., and names will be received up to the previous day at twelve o'clock. This terminates the season of *Le Vélo*, a season which should go far to strengthen the hold of automobilism on all classes of French sportsmen. May each event be favoured with the best of weather, and secure that success which the untiring efforts of the promoters so thoroughly deserve.

### The Motor Cyclist Rival.

CONSIDERABLE sympathy is expressed by all classes of automobilists on account of Rigal's severe illness, which has confined the little racing man to his bed for some time past. By his many plucky performances in last season's races Rigal has endeared himself to the French sporting public, and one and all unite in wishing him a speedy recovery.

### An Accident at Saint-Germain.

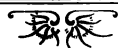
As a general rule, the French country carter is more amenable to reason than the English article, and usually he gives way for the passage of an automobile with surprising alacrity. There are exceptions, however, and it was one of these that Monsieur and Madame Rivière and Monsieur Bachelet had the misfortune to encounter on the famous hill of Pecq the other Sunday evening. Descending the hill in their car at a moderate speed, and on their right side, they came up with a heavy milk cart travelling on the wrong side of the road. The driver of this vehicle refused to make way for the car to pass between him and another vehicle ascending the hill, with the ultimate result that M. Rivière's car struck the curb and overturned. Satisfied with the success of his achievement, the carter whipped up his horse and disappeared with all speed. The three occupants of the automobile were severely, although not dangerously, wounded.

### The Automobile Club of Nice.

FAVOURÉD with magnificent weather, the Automobile Club of Nice successfully carried out on the 26th ult. the first of a series of delightful excursions which are being organised. A considerable crowd had assembled to witness the start from the club-house in the Boulevard Gambetta, and although the cars participating in the run were not very numerous they carried many of the best-known automobilists of the Riviera. Among the "chauffeurs" were Baron Duquesne, M.M. Clerissy, Goudoin, Chauchard, Gibert, Laffon, Laumailié, Giraud, Frishie, Florès, and others. Getting under way at 9.45 a.m., the bridge of La Manda was crossed, and then on through the magnificent country around Gattières, Saint-Jeannet, Venu, and Tourettes, to the Gorges du Loup, the club members journeyed, delighted with the unrivalled scenery through which they passed. Luncheon finished, a start was made for home, and a quick run by way of Pré-du-Lac, Roquefort, Villeneuve-Loubet, and Cagnes brought the travellers back to Nice. On the 10th inst. the second of these pleasant drives will take place.

A WHOLESALE catalogue of motor component parts, etc., for tricycles and cars, has been issued by the London Auto-Car Co., Ltd., which will be found very serviceable to the trade. It is very conveniently arranged, and includes stampings and forgings for Benz cars, quadricycle fittings, electrical fittings, motors, frames, parts, accessories, etc., of every description. Included in the catalogue are illustrations of the Imperial Hurter dog-cart, the L.A.C. quadricycle, and the L.A.C. Beeston motor-tricycle, model 1900.

# The Stanley Steam Car.



SINCE the Stanley Steam-Car was described in our issue of May 19th last a number of modifications and improvements have been made in it. As the vehicle is now being introduced into this country by the Locomobile Company of America, of 52, Sussex Place, South Kensington, S.W., and in view of the attention at present being devoted in America to steam-cars generally, the following description and detail illustrations of the latest Stanley car (Fig 1) may not be without interest at the present time.

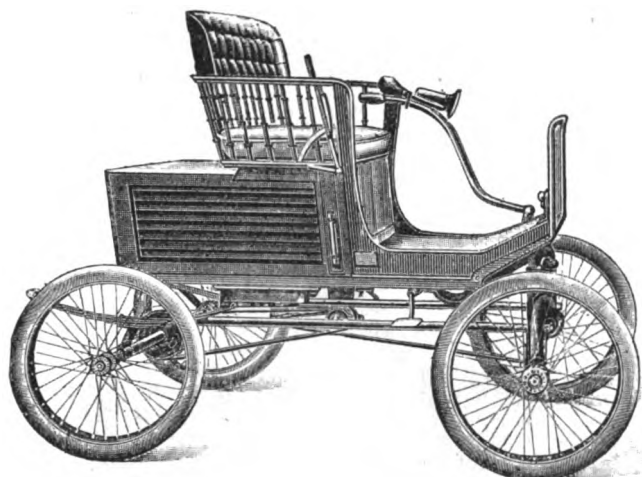


FIG. 1.—GENERAL VIEW OF STANLEY STEAM-CAR.

To deal first with the frame. This is built up of steel tubing, well braced, a light "body" adapted for two passengers being suspended thereon by a transverse plate spring at the front, and two longitudinal springs of the same type at the rear. The general arrangements of the car are well shown in Figs. 2 and 3. Referring to the latter: *D* is the steering lever, *T* the petrol tank for the burners, *C* the boiler, *H H* the water tanks, *A* is the steam admission control valve, *S* a branch pipe to the safety valve, *e* the steam exhaust pipe, *L* the entrance to the water tanks, *MM'* are gauges in front of the driver, one indicating

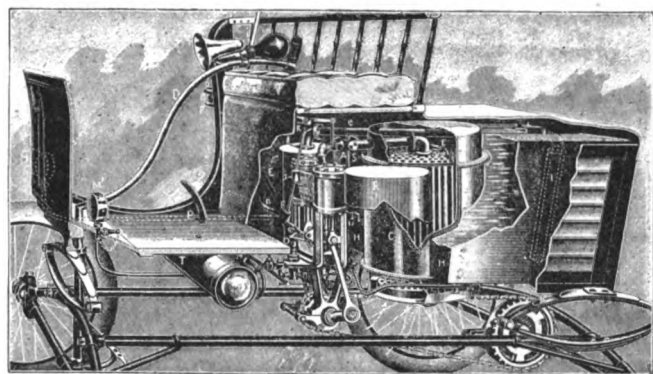


FIG. 2.—PART-SECTIONAL VIEW OF STANLEY STEAM-CAR, SHOWING LOCATION OF ENGINES AND BOILER.

the steam pressure in the boiler and the other the air pressure in the petrol tank *T*. At the side of the driver are three small levers, *a*, *f*, *o*; the lever *a*, which controls the admission of steam to the engines, takes the place of the lever controlling the variable speed gear in petroleum-spirit cars; *f* is a lever by means of which the engines can be instantly reversed, while *o* controls the supply of water to the boiler. The rods connected with these

three levers are all hollow, and are arranged concentrically, one within the other, as shown at *K* (Fig. 3.)

Coming now to the boiler, of which an elevation and plan are given in Figs. 4 and 5; this is of the multitubular type; it consists of a shell of steel 6 mm. thick, wrapped on the exterior by two layers of  $\frac{9}{10}$  mm. steel wire. At the top and bottom of the shell are plates pierced with 300 holes in which are inserted copper tubes  $1\frac{1}{2}$  mm. thick and 11 mm. diam. The tubes act simply as conduits for the hot gases arising from the burning of petroleum spirit in the burner below. The body of the burner consists of a sheet steel cylinder of the same diameter as the boiler, and is fixed immediately below the latter. Within the first cylinder is a second one, containing the vaporised petrol; it is provided with 114 short copper tubes *C* (Fig. 5). The upper plate of the interior cylinder is pierced with a large number of small holes forming the burners, the vaporised spirit emerging through these holes and mingling with the air drawn in through the short copper tubes *C*. The burner is  $1\frac{1}{4}$  in. deep, and stands about  $3\frac{3}{4}$  in. below the lower tube sheet, and the smoke bonnet on top of the boiler is about  $2\frac{1}{2}$  in. high, thus making the total boiler height inside of 20 in.; hence it is very easily placed under the carriage seat. The oil fuel is led from the fuel tank where it is carried under 20 or 25 lbs. air pressure

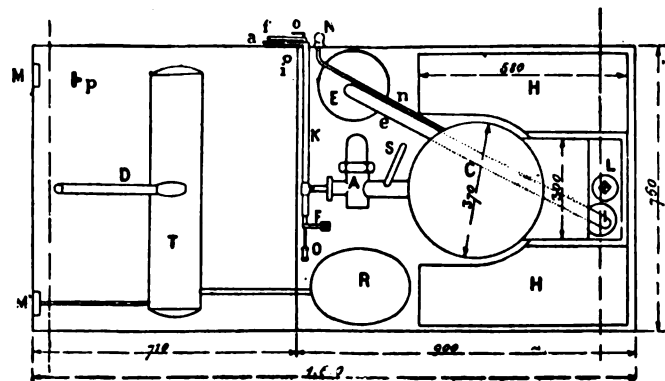


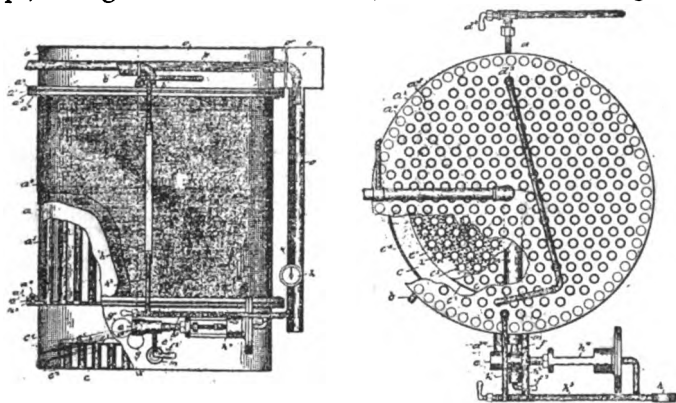
FIG. 3.—PLAN OF STANLEY STEAM-CAR.

through a vaporising pipe, which passes through the boiler, and thence the vapour goes through a passage which may be closed by a regulator-valve to the burner. In front of the burner a special automatic petrol-supply regulator is provided, by means of which as soon as the steam pressure in the boiler attains a certain degree the flame of the burners is automatically lowered, there being a by-pass of limited cross-section leading around the regulator valve which keeps the fire alight. So soon as the regulator valve acts to reduce the fire it also opens a large area of cold air entrance to the fire-box, which has the effect of instantly checking the steam production. This makes the action of the burner exceedingly prompt, and keeps the steam almost exactly at the regulator pressure in the boiler, no matter whether the carriage is travelling up-hill or coasting down-hill. The pump delivery is about constant; the regulator is set at about 150lbs. and the safety valve at 160lbs. No cylinder drainage cocks are used, so that the boiler feed is always about the same for, say, each ten miles run, and hence the whole regulation of the fire and water are thus automatically taken care of. The boiler is supposed to carry 8 in. of water above the tube sheet, leaving 5 in. of steam space, but an inch or two either way in the water level makes no difference, the boiler acting perfectly down to 1 in. of water over the lower sheet. Thus the driver has nothing to do except to steer and handle the throttle valve. A glass gauge on the outside of the wagon body



(N Fig. 3) shows at a glance where the water level is. The burner is claimed to give an absolutely perfect noiseless combustion, the up-take discharge not having any odour, and being wholly invisible. The fire is also invisible, appearing through the firebox peep-hole as a wavering bluish haze when burning hard.

The engines consist of a pair of vertical cylinders, *C C* (Fig. 6), 2½ in. bore, with 3½ in. stroke. They are of plain marine type, having eccentric valve motion, with cut off at five-eighths



FIGS. 4 AND 5.—ELEVATION AND PLAN OF STANLEY BOILER.

stroke, non-reversing, and having ball bearings on the crank pins and crank shaft bearings, the pump being driven by a link and beam from one cross-head, and having a stroke one-seventh of the piston stroke. The engines run at a speed of 300 to 400 revolutions per minute and develop an average of 5 h.p.; it weighs only 69 lbs., and is but 17½ in. high.

The transmission of the power from the engine crank-shaft is effected by a hard sprocket of twelve teeth *O* (Fig. 6) on the

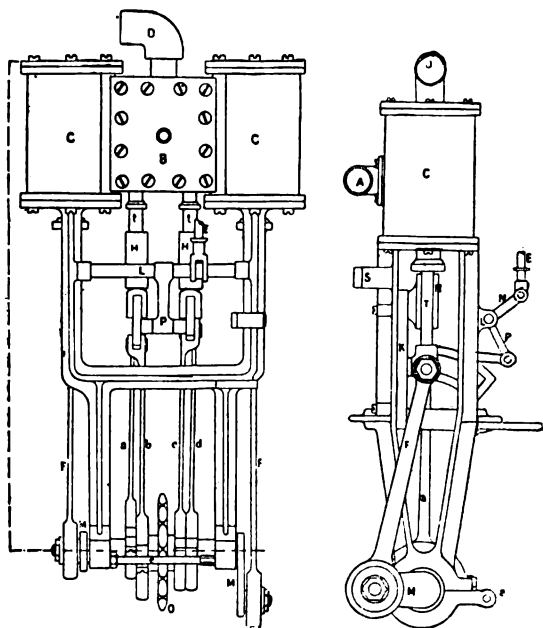


FIG. 6.—ENGINES OF STANLEY STEAM-CAR.

engine-shaft, connected by a single light central-driving chain to a twenty-four-tooth sprocket-wheel, on the compensating gear box on the rear axle. The chain adjustment is obtained by a right and left threaded screw strut, jointed at one end to the yoke of the rear axle support which surrounds the compensating gear, and at the other end to the lower part of the engine frame, in about the plane of the crank shaft. This permits the rise and fall of the engine and small chain-wheel sprocket without material change of chain length, and relieves the pneumatic tyres of all weight not carried on springs.

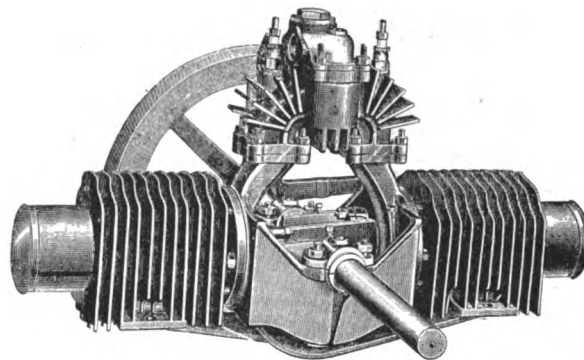
Steering is controlled by a bar acting on the front wheels, which are mounted on vertical pivots in the usual way. Three hand brakes are provided: one controlled by a foot-pedal acting on the differential and one each, actuated by a hand lever, on the

hubs of the rear wheels. The wheels are of the cycle type, shod with small pneumatic tyres. Complete with water sufficient for a run of from 20 to 50 miles, according to the nature of the route traversed, and of fuel for from 70 to 100 miles, the car weighs 600 lbs. It can, it is claimed, climb a gradient of 1 in 7 with ease, and can be got ready by an expert in less than five minutes, from five to ten minutes being required to get up to its fullest power.

We are indebted to our French contemporary, *La Nature*, for the interesting sectional illustration (Fig. 2).

## THE DORÉ PETROLEUM-SPIRIT MOTOR.

AMONG the many new petroleum-spirit motors recently introduced in France, is that of Messrs. Doré and Co., of 128, Rue du Bois, Levallois, France, of which an illustration is given herewith. As will be seen, there are two cylinders arranged opposite to one another in such a way that the piston rods work on to a central shaft, the two cranks being set at an angle of 180° to each other. The ignition is electrical, while the cooling of the cylinders is affected



by large radial ribs, assisted by wings bolted to the fly-wheels, of which there are two, one on each end of the crank-shaft. Only one inlet and one exhaust valve are provided to the two cylinders, these being located on a hollow bridge over the central crank-shaft, the bridge communicating with, and in fact forming part of, the explosion chambers. Although two sparking plugs are shown in the illustration only one is really necessary, the second one being provided as a reserve, in cases of mis-fires and break-ages. The motor, which has cylinders 75 mm. diameter by 80 mm. stroke, is stated to develop 5 h.p.; it weighs, with fly-wheels, 165 lb.

MANUFACTURERS of electrically-propelled vehicles or batteries intended for motor-cars are invited to attend a meeting to be held at the Automobile Club of Great Britain, 4, Whitehall Court, London, S.W., on Monday, the 11th instant, at 5 p.m., to consider what trials of electrical vehicles should be held by the Club in 1900.

SIR ROBERT MENZIES, Bart., is disturbed about the "tremendous pace" at which he has seen motor-cars driven, and at his request the Highland District Committee at Logierait is considering the question.

CYCLISTS have previously been warned in these columns against approaching too closely to the rear of motor-cars. The other day at Epping, Miss Cottis, a cyclist, had a narrow escape when following a car, as she ran into the vehicle when it was sharply pulled up. Evidently, the warning cannot be given too frequently.

At the meeting of the Automobile Club committee on the 5th instant forty-eight candidates were elected to membership of the club, including Sir James Pender, Bart., Colonel H. Watkin, C.B., Captain G. T. Tulloch, R.A., Sir Lewis McIver, Bart., M.P., Mr. A. W. Macdonald Bosville, J.P., and Mr. Barclay Walker.

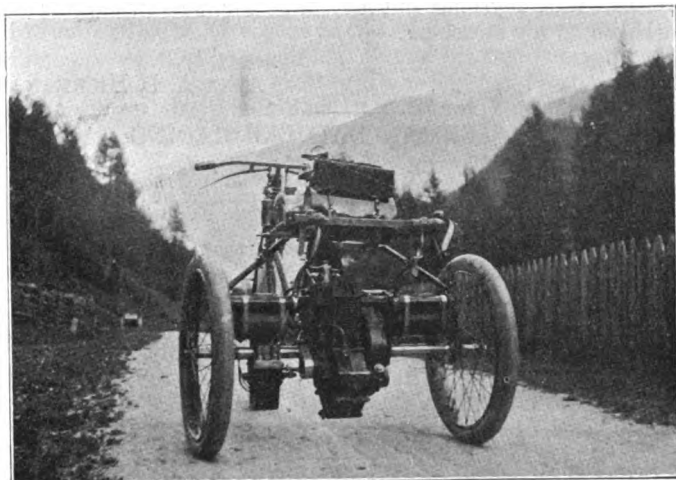
## CORRESPONDENCE.

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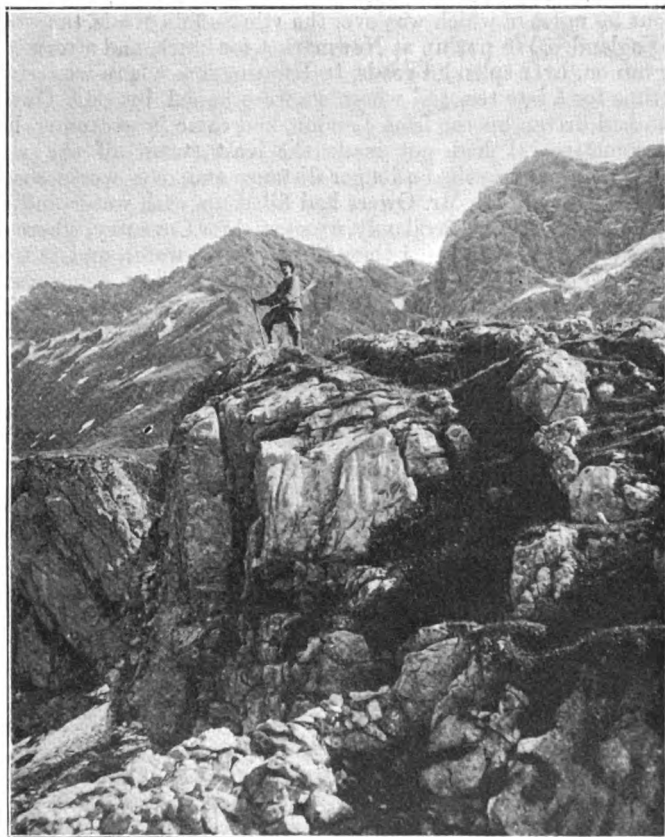
## MOTOR-TRICYCLING IN SWITZERLAND.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having been well acquainted with the mountains of the Tyrol and Switzerland for the past fourteen years, I took the



opportunity this autumn of taking a 1½ h.p. de Dion motor tricycle with me, with a view to testing, under trying conditions, the magnetic ignition fitted to same. I chose as a centre for my tours the picturesque little town of Landeck, situated on the river Inn, and surrounded on the north by the romantic Lechthal Alps. Landeck is, practically speaking, the key to the Tyrol,



Vorarlberg and the Engadine, and is frequented in the summer and autumn by thousands of tourists. From this little beauty spot I had many pleasant runs on my de Dion tricycle, which behaved splendidly on those steep but excellent mountain roads, and instead of using train, coach, or carriage to get to a certain

point to climb a peak, I was this year enabled to motor to my "heart's delight."

The Austrian Automobile Club, with a centre in Vienna (of which I have the honour to be a founder member), has provided for petrol depôts in the chief towns and villages in the Tyrol, and I can strongly recommend English automobilists to try the beautiful roads in the Tyrol and Switzerland, the Swiss roads even being generally superior to those of the Tyrol. Special attention should be given to the number and reliability of the brakes, as very often long and trying inclines are encountered. I will say nothing about sufficient h.p., as I take it for granted that no one would attempt to use a motor cycle or car which is not a match for these mountain roads.

I have pleasure in sending you a photo of my tricycle, taken on a road leading to Landeck, also a photo of myself while in pursuit of chamois, a sport I have courted during the last few years in the Lech Valley.

Amberley House, Yours faithfully,  
Norfolk Street, Strand, W.C. **FREDERICK R. SIMMS.**  
November 28, 1899.

## THE HUNTER AND THE MOTOR CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—To plunge a motor-car into the heart of Leicestershire sounds rather a bold step. Nevertheless, the experiment was bound to be made sooner or later. Should we or should we not be tolerated by our sporting friends if we ventured to drive to the meets on an motor-car? That was a question which we asked ourselves very seriously. Having crossed the Rubicon, perhaps it may interest some of your readers to hear how we fared.

The first attempt was made in fear and trembling, and our groom received orders to put our own hunters up at a yard a good mile short of the meet, in order that we should not frighten the spirited steeds of the Hunt servants and others.

We started early, hoping by so doing to avoid the majority of our neighbours. All went well for several miles, when gradually we overtook second horsemen, leading riderless animals to the fixture. Some of them quickened their pace, gave a bound and a leap, and the worst was over. Others took absolutely no notice of the car. We were fortunate enough not to encounter a really fractious steed on this occasion. On the other hand we made a point of pulling up whenever the rider displayed symptoms of uneasiness. I say rider advisedly, for in the majority of instances the horseman was much more nervous than the animal.

As we drew nearer to the scene of action, the public attitude towards motor-cars was clearly revealed by the varied remarks hurled at us. "What? You don't mean to say you intend to drive to the meets with *that* thing? Why, you will be had up for manslaughter."

"For goodness' sake, don't," said one.

"A most delightful way of getting about," observed another; "nothing to tire, and distance no object. I only wish I could afford one. What's the figure, eh? Ah! That's the worst of it—so frightfully expensive. And I suppose you have to keep a boy into the bargain?"

"I wonder you are not afraid of breaking down," quoth a third, jocularly. "I presume you don't object to being stuck on a hill? Rather enjoy the sensation than otherwise?"

"Well, I never," commented a fourth. "You are bold people to trust your lives in that dangerous concern. How often do you blow up?"

Observations of such nature clearly denoted the popular state of mind with regard to motor-cars. It was evident that they were still a novelty in Leicestershire. In spite of its shoemakers and Radicals, Leicestershire is very conservative in many ways, and inclined to view the horseless carriage with suspicion.

The majority looked upon it as an insult to the county famed for being the Home of the Horse. Moreover, Leicestershire possessed a remarkable story of a compatriot who once owned a motor-car. It never wearied of relating how the works became red-hot, and were continually soused with buckets

of cold water to prevent a conflagration, whilst the startled occupants fled for their lives. According to Leicestershire, it was an infernal machine, emanating from the workshops of Lucifer. No sane person would have anything to do with it. It jibbed viciously at every hill, and never could be persuaded to mount any ascent without the passengers dismounting and pushing it to the top. Ladies rash enough to trust themselves to its tender mercies were cruelly left in the lurch. History narrated how a large dinner party was spoilt by the hostess being planted miles away from home, owing to the misconduct of the car, and not turning up until eleven o'clock at night.

On another occasion, a merry crew were to drive to the meet, but they never got there. They lost both their day's hunting and their tempers. And all owing to that blessed car! It quickly obtained an unenviable notoriety throughout the neighbourhood, and many were the misdeeds ascribed to it. They were quoted far and wide, and in consequence, its successor had a mountain of prejudices to contend with. We set to work with our little "Benz" to dispel it. When our neighbours saw it out almost daily, surmounting hills sedately but safely, and flying down descents which soon left them far in the rear, they gradually began to reconstruct a few of their opinions. They saw for themselves that we did not break down or blow up or alarm their horses to any terrific extent. Little by little they themselves became less nervous when we met them on the road. The thin end of the wedge once inserted favourable, results are bound to follow.

Already many hover on the outskirts of automobilism, only requiring pioneers to smooth their way. There are three things which those who stand without the charmed circle are waiting for. The first is a cheap car; the second is what the great outside public vaguely designate "improvements"; the third is a vehicle guaranteed to ascend hills at a rather faster rate of speed than at present.

Whilst these good people are waiting they little know the pleasure they are losing. Motoring adds a new zest to life. As for the horses, a few of them, it is true, are restive, but their owners are generally conciliated by civil treatment. Only yesterday I met a rough rider breaking in a young animal. On sighting our Benz puffing gallantly up a steep hill, the horse tried hard to turn round. I brought the car to a standstill, and told the rider to coax him up to it. The man had both sense and nerve, and instead of uselessly spurring the youngster, encouraged him with voice and pressure of the knees. In a few minutes the horse walked quietly round us, without any sign of apprehension. "Thank you very much, madam," said the rider. "You have allowed me to give him a first-rate lesson. The other day I was half an hour battling with him. I hope I have not detained you." "Not at all," I answered. "I will stay as long as ever you like." We parted the best of friends. My respect for the rough rider was increased by the manner in which he had handled his steed, and I hope and think that any little prejudice he might have hitherto harboured against motor-cars was dispelled by the trifling courtesy shown on our side. One thing is certain: if people would only remember that roads are made for everybody, and observe the golden rule of forbearance when any little disagreement arises, autocratists would serve the best interests of the industry far more surely than by whisking by, heedful only of the number of miles they can do in the hour. Speed counts for nothing in comparison with conciliating "all sorts and conditions of men." Let it be remembered that to the great bulk of country folk the motor-car still savours of novelty. I believe that even a county like Leicestershire, the chosen oasis of fox-hunters, may be won over to the good cause by degrees.

The Barn, Market Harboro',

Yours, etc.,

December 2, 1899.

MARY E. KENNARD.

#### THE CONVEYANCE OF MOTOR-CARS BETWEEN NEWHAVEN AND DIEPPE.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—Referring to your correspondent Dr. Dawson Turner, I think he can hardly expect the Newhaven-Dieppe steamers to take motor-cars by their day service, which is the crack cross-Channel day service. They are only allowed

five minutes at Newhaven for the transfer of the passengers' luggage. Furthermore the boats which run the day service have no accommodation for motor-cars. In fact, I am rather surprised that they take them in their passenger steamers at all, as motor-cars are really carriages, and one hardly expects that the fast passenger steamers across the Channel should take such large cargo as carriages. I may state here that I consider the L.B.S.C.R. the most courteous and polite company. I have never met with anything but excessive kindness when visiting Newhaven on my motor-car.

Hastings.

December 1st, 1899.

Yours truly,

ALAN A. L. HICKMAN.

#### THE NEW GERMAN DAIMLER RACING CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—With reference to the paragraph in your issue of the 1st inst., referring to the new racing car by the Daimler Motoren Gesellschaft, we would remark that this car has been purchased by us from M. Jellineh, of Nice, to whose order it was built, and resold by us to Count Zbotowski. It is moreover fitted with the Simms-Bosch magneto-electric ignition.

Donington House,

Yours faithfully,

Norfolk Street,

THE MOTOR CARRIAGE SUPPLY Co., LTD.

Strand, London, W.C.,

(E. G. Lefebure, Manager).

December 2, 1899.

#### MR. ESTCOURT'S IMPROVED COOLER AND STARTING GEAR FOR DAIMLER CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—A few lines on the longest run I have as yet taken on my old car since fitting it up with the improved cooler and starter may not be without interest to your readers. Both of these devices I find a great improvement on the old style of pump and tank, and having to get down to start after each stop. The run was from Lowestoft to Coventry, 160 miles, about 50 miles of which was over the vile Suffolk roads, the worst in England. We put up at Newmarket for lunch, and afterwards we ran on, over splendid roads, to Huntingdon, where we arrived in time for a late tea, and where we were joined by Mr. Owers, who had driven his car from London, and came in steaming like a locomotive. I had not made the least steam all the way, although I had travelled a longer distance and over worse roads. Next morning, after Mr. Owers had filled up with water and oil and I had filled up with oil only, we started for Coventry, where we arrived about 4 o'clock. I then filled up with water, and it took about two quarts to fill the receptacle, as I had lost some water by leakage; I should think I had used about one quart in running 160 miles. The next day I started back; leaving Coventry at 3.15, and putting up for the night at Kettering. The next morning I started for Lowestoft. It had been raining all the way, and although this had not affected the hard roads we had been travelling over, as soon as we got into Suffolk I found we were in for a slow journey. I travelled thirteen miles right off over new-laid flints put on the top of sand, the whole soddened by rain. This necessitated my filling up with water once on the journey, and it was the only time I had ever succeeded in making the water boil. I may mention that I am using the Clarkson pipe; the arrangement is such that no pump is required; the circulation is perfect, and I find my valves keep in much better order than they have ever done before. I have driven the car about 1,600 miles since the cooler was fitted to it, and with the exception of one broken pipe through a flaw in the copper, it has worked perfectly.

1, Ellesmere Mansions,

Yours truly,

Canfield Gardens, Hampstead.

ERNEST ESTCOURT.

December 4th, 1899.

#### THE CINEMATOGRAPH ON TOUR WITH A MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My first tour is at an end, we having reached Edinburgh on Monday last after a run extending over thirteen weeks, and at its conclusion, after such a lengthy trial, I think I ought to

be able to judge as to the merits of a motor-car in connection with such a business as a touring entertainment. So when I say that at the expiration of our season in Edinburgh, which is to last nine or ten weeks, I intend starting on a second tour in the same manner, it will be at once apparent that I have been highly pleased with my first experiment. I have no hesitation in affirming that the motor-car has been a very valuable adjunct not only so far as a novel advertisement in many of the out-of-the-way places is concerned, but because it would have been almost impossible to have gone to them by the ordinary methods, for the expense in transportation of our baggage in carts and traps would have been too great. We have never missed a single engagement on the whole tour, despite the steepest hills, bad weather, and trifling little accidents to gear, pump, or other parts of the machinery.

My previous letters have given you from time to time the details of any and all our slight mishaps, so I think it will now suffice if I briefly summarise as follows:—We have visited seventy-five places in a little over thirteen weeks. In at least thirty of them we were the first to introduce a motor-car, and no small sensation was caused in all of them by our visit. We fractured three platinum tubes, but always having a spare one on hand, we suffered no delay on that account. We used in all less than three dozen wicks, some not lasting so well as others on account of being too tight. The most notable hills we have negotiated safely have been Shap Fell, Irton Brow, Sandbank Hill, Orton Scar, Docker Brow, Wooler Bank, Coniston Hill, Lindale Brow, Gainford Grand Bank, the ascent to Woodlands, Killhope Hill, the descent to Trenthead (600 feet in a mile), and I ought not to forget to state again that we ploughed through Kirkbride Marsh. The total mileage of the tour was 1,426 miles, which includes the motoring around to hamlets in the vicinity of our location for the night. The amount of motor-car spirit consumed was 140 gallons, showing an average of ten miles per gallon. The spirit was obtained from Mr. Peter Lee, of 7, High Street, Glasgow, who has been most loyal in his service to me, always prompt in despatching, and the spirit sent being of excellent quality. We required a new driving sleeve and a new high-speed ring in the eighth week of our tour, but not knowing how long the old ones had been in use before I bought the car I cannot say how fast these were worn out by us. I also wish to record a passing word of thanks to the Daimler Motor Company, Limited, for so promptly sending anything I wanted on receipt of a wire.

Yours, etc.,

24, Shandwick Place, Edinburgh.  
December 6th, 1899.

T. J. WEST,  
Manager Modern Marvel  
Company, Limited.

#### THE MOTOR TRADES' ASSOCIATION.

[We have been asked to publish the letter below, and to explain that "If any gentleman who should have received an invitation direct does not do so, he has not been intentionally missed out, but it is solely through the want of the correct and full list of those connected with the trade."—ED. *Motor-Car Journal*.]

"At an influential meeting of gentlemen directly interested in the motor-car trade held at the Hôtel Metropole, London, on November 24th, it was unanimously decided that the interest of the trade demanded the formation of an association for mutual protection. An organising committee was formed from those present, their names being Messrs. J. Accles, E. H. Bayley, W. C. Bersey, A. Eadie, S. F. Edge, S. Gorton, J. H. Gretton, H. J. Lawson, Walter Phillips, J. H. Prestwich, J. Rothwell, C. Sangster, and G. H. Smith, secretary *pro tem*. This organising committee met on December 1st, and after discussion they suggested that the title of the association should be 'The Motor Trades' Association.'

"They propose that the objects of the Association should be to afford mutual protection to its members, and to promote such measures as may be found useful in the interest of the motor industry in the United Kingdom, including the encouragement of invention, regulation of prices, and arrangement of shows.

"They also suggest that the members of the Association shall comprise all persons connected with the motor industry who shall signify their desire to join, and who shall be elected in the manner prescribed in the rules.

"I would be glad of an expression of opinion from you as to whether the above suggestions meet with your approval, and whether you would care to join such a trade association if its rules and line of action when finally decided upon are to your satisfaction.

"There will be a meeting of gentlemen prominent in the motor trades held at 2 p.m. at the Holborn Viaduct Hotel, London, on Wednesday, December 13th, to finally decide on the whole matter and to appoint an executive committee, and I trust if you can possibly manage it you will be present.

Yours faithfully,

G. F. SMITH,

Secretary *pro tem*.

"64 and 65, Holborn Viaduct, E.C.,  
December 2nd, 1899."

QUITE a number of public motor-car services are about to be started in the Italian province of Puglia.

THE Hedworth Barium Company, of Newcastle and Jarrow, are about to run a motor-waggon between their Cow Green Barium Mines and Middleton-in-Teesdale Station for the transport of barium.

MR. M. STEPHENSON, tanner, of Smith-street, Willoughby, Sydney, N.S.W., writes us that he is in want of a motor-waggon, and that he would be glad if builders of such vehicles would send him copies of their catalogues.

LADY GREY has lately acquired an Oppermann electrical vehicle. It takes the form of a single victoria, with a tiger seat at the rear. The electro-motor, of 3-h p, drives the rear axle through worm gearing.

THE Radial Cycle Stand Co., of Middlesbrough, are introducing a simple iron stand for supporting motor tricycles off the ground. The stand is strongly made, but requires the machine to be lifted on to it.

A "J.P." WRITES to the *Newcastle Daily Chronicle* declaring that "the motor car, far more especially the motor omnibus, is what is wanted in Newcastle-on-Tyne, instead of the tramcar system which the Corporation is promoting."

It is stated that a foreign company has applied to the Spanish Government for a concession to establish services of motor-cars between districts not provided with railways.

It is reported that the Sultan of Morocco has ordered a Panhard and Levassor 7½ h.p. car of Messrs. Charron, Girardot and Voigt, of Paris.

MOTOR vehicles will be the feature at the Fifth Annual Cycle and Automobile Show, to be held at Madison Square Garden, New York, during the week following January 20.

THE American Bicycle Company, the new trust in that line of manufacture, has ordered the factory of the Indiana Bicycle Company, Indianapolis, Ind., to be set apart for the exclusive production of automobiles.

DURING the past week there has come to hand a copy of the new catalogue just got out by the Motor Manufacturing Company, Limited. The list opens with copies of a number of testimonials and press opinions received by the company regarding their vehicles, followed by particulars of their productions in the way of motor-cars, Bollée voiturettes, motor-bicycles, tricycles, and quadricycles, as also of the spare parts, etc., for the same. Of the vehicles and cycles particulars and clear illustrations are given of no less than about twenty different types, each car being illustrated and described on a separate sheet inserted loosely in the catalogue. All interested in automobilism would do well to obtain a copy of the new list, which comprises everything, from a single-seated motor-bicycle to a nine-seated motor-waggonette, suitable for public services. As to the merits of the company's productions, these are now too well-known in the motor-world to need further attention at our hands on the present occasion.



## SCOTTISH NOTES.


**The Scottish  
Automobile  
Club.**

A MEETING which is bound to have a very important influence on the future of automobilism in Scotland took place in the Royal Hotel, Edinburgh, on Friday last. On that day the first public gathering of Scotch automobilists was held with the object of forming forthwith a club which would look after the interests of automobilism North of the Tweed. It had been wisely decided that such an organisation would be greatly benefited by affiliation with the great central club in London. Mr. Johnson, the general secretary of the Automobile Club of Great Britain and Ireland, was therefore invited to give a brief sketch of the formation and work of the Club. The meeting was a thoroughly representative and influential one, many prominent figures in Edinburgh society being present. On the motion of Mr. J. Stirling, Mr. Jno. MacDonald was called to the chair, and after briefly referring to the object for which the meeting was convened, the chairman introduced Mr. Johnson from London. Mr. Johnson gave a racy account of the birth and early days of the Club, and also referred to the good work which it had already been able to accomplish. He briefly outlined the plans which were at present under consideration, all in the general interest of automobilists throughout the whole country. He emphasised the great necessity at this time for the union of all who were interested in this new development, especially in view of the action which was being taken by county councils in different parts of the kingdom to restrict the rights and privileges of users of automobiles on the highways. Only by united action could we hope to obtain justice in such matters. Mr. Johnson did not overlook the social side of the club's work, which he said had proved a great source of pleasure to members, and the introduction of friends to runs, tours, and other of the Club's social functions had resulted in making many fresh automobile enthusiasts. He hoped that the Scottish Automobile Club which they were about to form would be warmly supported and prove a great success. Dr. Dawson Turner, Edinburgh, thereafter formally moved that a Scottish club be formed of persons interested in automobilism resident in Scotland, and was seconded by Mr. J. Wilson, proprietor of the *Edinburgh Evening News*, and carried unanimously. It was then agreed that the club be called the "Scottish Automobile Club, being the Scottish Branch of the Automobile Club of Great Britain and Ireland," and a strong provisional committee was appointed to secure officers and to make all necessary arrangements for establishing the club. Lord Kingsburgh, in an excellent speech, strongly supported the proposed Scottish Club. In addition to the encouragement of a new and a coming great industry which would benefit the country, he considered the effect of the club's institution would be to advance a new sport. The club had his heartiest good wishes. Mr. Smith, of Messrs. Mitchell and Smith, Glasgow, was appointed secretary *pro tem.*, and on the motion of Mr. Symington, Glasgow, the chairman was accorded a vote of thanks for presiding and the proceedings terminated.

**Suggested Service  
for  
Aberdeen.**

Now that the proposal for a light railway between Aberdeen and Echt has been abandoned, Mr. R. J. Murray, of Springwood Park, Rubislaw Den North, Aberdeen, writes suggesting the establishment of a motor-car service which should cater for all neighbouring districts not served by railways or other means of rapid communication. Dealing with the Aberdeen and Midmar route—seventeen miles in length—Mr. Murray suggests the following as sufficient to deal with the traffic:—One steam omnibus with a capacity for twenty-four passengers and 10cwt. of luggage, and a maximum speed of 10 miles per hour; one steam dray of the capacity of 3 tons maximum and a speed of  $7\frac{1}{2}$  miles per hour; two light oil mail

cars to carry mails and seven or eight passengers, with a maximum speed of 16 miles per hour. Certainly there is much to be said in favour of his proposal, and its development should prove popular and profitable.

**Edinburgh  
or  
Glasgow.**

FROM the interest manifested in Friday's meeting the Scottish Club promises well. Whether Glasgow or Edinburgh will ultimately be its head-quarter will come up for decision later, but looking at the support which is being given to the Club from Edinburgh, I think that city has a good claim for the honour, and I do not think that in the circumstances members in the West of Scotland will grudge them this. Edinburgh is easily reached from most places, and the work of the Club will not be confined to the metropolis.

**The Recent Cycle  
Shows.**

THE London shows are over, and Scottish visitors are again at home. The general impression appears to be that while there was much to interest there was little in the way of novelty to be seen, and too short a time had elapsed since the great motor exhibition to permit of much improvement being made. The striking feature of the show from an automobilist's point of view was the number of cycle makers who have started work on motor-cycles.

**The Automobile  
Club's 1,000  
Miles Trial.**

THE 1,000 miles trial scheme of the Automobile Club has been well received in the North. It is agreed that such a trial will have useful results in showing up the best makes of cars, and at the same time do much to educate the country in automobilism. I understand Messrs. Stirling of Hamilton will enter one or two of their new 1900 cars.

**Lamp Ignition  
Trouble.**

I AM obliged to your correspondent for his suggestion on the lamp-blowing-out subject. I am afraid he does not experience such terrific blasts of wind so frequently as we do in this ruder northern clime. I have tried various devices, including those suggested by him, but while they modify the evil, never entirely overcome it. At the critical moment, and often when quite unexpected, the lamp fails. This is one point in which the electric ignition scores.

**Aberdeen  
Mechanical Society.**

THE other day the members of this society, at the invitation of Mr. Mowat, works manager, visited the works of Messrs. Harpers, Limited, at Craiginches, and inspected several internal combustion motors at work. There was a very large turn-out of the members, and Mr. William Harper, of Harper's Motor Company, along with Mr. Mowat, explained the working of the new vehicles, showing the engines of the various cars at work, and also the cars running. The cars shown included a large Daimler char-a-banc, a Delahaye wagonette, for eight persons; a Benz sociable with seats for two, a Bollée car, etc. The members had also an opportunity of seeing a direct-coupled Paris-Singer oil engine and dynamo at work. The visit was much enjoyed, and Mr. Ketchen, ex-president of the society, in expressing on behalf of the members their appreciation of the opportunity afforded, referred to the kindness of Messrs. Harper in allowing the Mechanical Society to visit the works, and also to the very instructive manner in which Mr. William Harper and Mr. Mowat had explained the uses of the different parts of the machinery of the cars.

"BROWN HEATHER."



## A MOTOR-CAR ON BORDER ROADS.

By SIR GEORGE DOUGLAS.



THE worship of the horse has been, for many generations, the unofficial religion of our countryside. And now a new, strange heresy has appeared in our midst. Can it be destined, in the event, to supersede the older faith—as did the cult of Apollo, for instance, that of Hyperion? Or do the omens portend some form of divided sway over men?

The discriminating patron of recent fiction will not have forgotten those redeeming pages of an ugly novel in which M. Zola has treated of the locomotive—poetically representing it as a creature of human handiwork, indeed, yet living by a life of its own, the laws of which are by its creator but obscurely and imperfectly comprehended. Well, just so is it with the motor: she, too, has a life of her own. And be it remarked in passing that it is no mere vulgarism of her body-servants which has assigned a sex to that which, to the dull eye of the uninitiated, would seem epicene or sexless. For, alike in the delicacy of her constitution and the inscrutability or caprice of her motives, the machine is essentially feminine! I have spoken of her life; let me add that, to the eye of one who is neither mechanic nor medical student, a diagram of her interior arrangements presents a striking likeness to those somewhat gruesome drawings which may be seen exposed in the shop-windows of Paris, and which shows us a human body from which the outer coverings have been removed. There is the same intricate system of tubes by means of which animal heat—combustion—is sustained; the same appliances for drawing in the air of heaven, and for exhaling it when its virtue has been absorbed: the lungs of the machine. And, like the human body, the motor is subject to obscure disorders, productive of a vague malaise, affecting her working, and it may be defying diagnosis until perchance some ring is discovered to be worn, or some “nut” defective. But these latter things have the great advantage over the human organs that they can be renewed at will. I have even fancied that the mood of the motor, if one may use the phrase, is affected by the state of the atmosphere; and, speaking prosaically, it is quite possible that the presence of too much moisture in the latter may serve to hinder its mixture with the oil vapour. Finally, and to complete the parallel, the petrol—volatile as the spirits of a man-of-letters when occasion smiles—may be likened to the motor’s soul, that insubstantial essence, lacking which, to all intents and purposes, she were not. But it is time to leave the general for the particular.

At eleven o’clock of a wet, blustering November morning, a Daimler, fitted with smart wagonette body, stands at the door of the old mansion house. It is of four horse-power (nominal), and has four “gearings,” or adjustments of the machinery to determine the degree of speed in conformity with circumstance. Shades of “honest Allan” and of “Jimmy Thomson,” both of you once frequenters of this hospitable spot! what would be the comments of your pastoral muses upon this? Without pausing to answer this question, I am seated beside the driver, who combines with a firm and delicate hand upon the tiller perfect knowledge and mastery of his machine, and in another moment we are racing past the old trees of the avenue. This is “fourth” speed, or high pressure—the motion of a swallow on the wing, a flight through space, without so much as a horse between oneself and the exhilaration of rushing air. But soon the inequalities of the road demand that we moderate our eagerness, and proceed at a lower gearing. So far so good; but ere we have emerged from by roads on to the main Kelso-Jedburgh highway, we have experienced a mild specimen of the casualties to which motor-travel is exposed, for the gusty wind which drives the pricking showers against our cheeks has again and again put out our lights. This, however, is soon cured by leaving the door on their off-side partly open, and our progress is once more uninterrupted. The wetness

of the road surface is unfavourable, and we have the wind now dead against us; still over the level stretch between Crailing and Jedfoot the little motor bears us bravely, leaping Oxnam, leaping Jed—now drumly after rain—at a couple of bounds in her flight. At the cross roads we take to our right, threading the green slopes of Monteviot, past the romantic beauty of the grounds at Ancrum House, with their antlered deer—two of them milk-white—herding beside ancestral timber. At Ancrum Bridge the Teviot had been in flood; this should bring fish up. But now begins the toil of our ascent of Lilliard’s-Edge, 500 feet above sea level, 300 above Ancrum, with a gradient of 1 in 17-23. Now, ere we started on our drive, my companion and initiator into the joys of motoring, with his wife, had bantered me freely with threats of being “hung up” at nightfall upon Clarilaw Moor, or at least of being frequently called on to alight and “push behind.” And now the motor’s powers are put to the test; but she rises equal to the occasion. Then, with a movement of his left foot, the driver threw her out of gear, and we rattle of our own impetus down the other side. “Rattle” I have written, and it is true that the vibration of the motor car is often urged against it. All I can say is that, though extremely sensitive to jarring, I have experienced no inconvenience from this, and as little from the alleged evil smells.

Passing the avenues of Longnewton, seen in what Daudet calls “the rust of the woods,” passing St. Boswells Green, Leaderfoot bridge, the village of Newstead with its awkward turning, we enter Melrose, but not to halt there. We had by this time been two hours upon the road, and the day had improved none. The sacred groves of Abbotsford had promised us a shelter at luncheon-time, but the aspect of things without was a pattern of cheerlessness, and the rain, which now fell heavily, had begun to find its way among the interstices of our clothes. So we regaled ourselves, instead, by the hospitable ingle of the joiner of Lindean. So far the weather had done nothing for us; but, in compensation, it was by this time amply evident that it was one of the motor’s good days: she was doing well, and this in the face of adverse conditions of road and wind. For be it known that the motor has her times and seasons like the rest of us; nay, if I may trust my host, her master, she has even her antipathies to certain individual passengers, and is apt to grow sullen or recalcitrant when called upon to carry them. Cheered and invigorated by our halt, we pushed on, and proceeding at second gearing or rate of speed, climbed into the eyrie of Selkirk, and began to climb out at the same—a satisfactory performance. We had now reached the wildest parts of our road—a region of tumbled upland hillocks, overgrown with bents and interspersed with pools, over which the gusts of wind rushed by, bearing rain-showers in their arms. Without once slackening her speed, our brave little motor scaled the brow of the ascent—the highest point of our journey, over 900 feet above sea-level. Then at once, at a movement of the driver, she sprang to her highest gearing, rushing us along between young solitary plantations, now prancing and snorting over some inequality in the road-surface, now mingling her flying steam with the drift of ragged cloud. The best of our journey, as to pace and prospect, was now immediately before us. For just then a ray from the sun, hitherto effaced, kindled the rust of withered beech-leaves and the abundant wet haws in the uncared-for wayside hedge to a striking richness of colour, and in a moment, rising from wild Eildon on our left, a perfect rainbow stood above us. Its beauty and clearness were extraordinary, a faint reflex faintly painted the clouds above it, and seen through it—partly veiled in the greyness of rain—lay the whole wide country of the lower Tweed. A moment more and we were plunging into the valley, toward this triumphal arch of Nature’s erecting.

From St. Boswells onward, the remainder of our journey was over ground already traversed, and only one incident in it need be recorded. We had switchbacked gaily enough over the hollows at the foot of Lilliard’s-Edge, but as we reclimbed that formidable ascent from the further side (gradient now 1 in 13), our gallant little motor began to show signs of distress. Yes, there was obviously something amiss; and presently, after advancing very laboriously, she stopped dead; then made

another painful effort and stopped dead again, and so on. What ailed her? "Overheated," suggested our driver, and considering the exertions she had made during one day one could not be surprised. We let her rest, and reviewed the situation. It was not altogether promising. The daylight was beginning to fail, on our elevated situation the wind blew boisterously, we were still many miles from home, which, at our recent rate of progress, we might hope to reach some time after midnight. But now the owner's knowledge of his machine stood us in really good stead; for, of all the accidents to which the motor is subject, he divined just the one which had occurred. It was this. A special handle under this machine communicates with the supply which feeds the "water-jacket"; well in passing over a blown branch which lay across the road, this handle had somehow got turned. Hence the overheating. Once located, however, the ill was half rectified; and so, after a copious drink, the faithful motor bore us smoothly and steadily through the darkness to our journey's end. In all we had travelled, roughly speaking, fifty miles, in something over five hours—a fair rate of progress when ascents and adverse circumstances are taken into account. The cost of the 4 gallons of petrol consumed on the way was 5s. 1½d. (London price), the number of the travellers three. Let me add that, if I may trust my own scanty experience, horses seem already to be growing reconciled to the motor; at least, of those that we met upon the road, very few did more than glance askance at it. Two years ago this was different. Finally, and to sum up, let me repeat the candid statement of my motorist friend. "Swift, cheap, eminently convenient, and an object of interest to him who drives it, the motor," says he, "is, at its present state of development, still an uncertain means of locomotion. For general purposes and for every-day use it may be freely recommended; but in the case of my having an important engagement to keep, I should prefer to trust to horses."—*The Scotsman*.

A CHAUFFEURS photographic club is, it is reported, about to be formed in connection with the French Automobile Club.

THE Munich Automobile Club is organising a race from Munich to Vienna, to be run off early next spring.

AN automobile club has just been formed at Nurembourg, Germany. Herr Johann Barth has just been elected first president.

ARRANGEMENTS are being made at Derby by a local company to run a service of motor cars. The cars will probably run to Ashbourne, Alvaston, and Old Normanton.

THE Automobile Club d'Alsace-Lorraine, says the *Figaro*, has just made its first excursion in a body from Nancy to Pont-à-Mousson. About twenty chauffeurs took part in the trip, which terminated with a banquet.

AN adjunct of the Locomobile Company of America is the Rubber Tire Company of America, which has been incorporated under the laws of West Virginia, with a capital of £1,000,000. The new concern will manufacture rubber tires for automobiles.

A NEW company is being formed in Dublin to run a service of motor-cars along the North Wall and other places. There is also reported to be another scheme under consideration for running cars between Dublin and Enniskerry.

IN connection with the case *British Motor Company v. Burgess Cycle Co.*, Messrs. William H. M. Burgess, Limited, 9, Farringdon Road, E.C., ask us to point out that they are in no way connected with the concern mentioned.

As mentioned in a recent issue, the "United Motor Industries," of Paris, have not only opened up a London office at 64 and 65, Holborn Viaduct, but they have secured the sole British agency for the "Hurtu" car of French manufacture. The 1900 model of this vehicle is of the dogcart pattern, and should meet with a large share of success on the English market. We may mention that the "United Motor Industries" have also secured the sole British agency for the "Culasse Buchet," or "Buchet" combustion chamber, illustrated in our issue of October 6 last. The new culasse is arranged to be fitted on to the present 1½ h.p. or 2½ h.p. De Dion, Aster, Gaillardet, or Decauville motors, in order to increase the power of these engines by 30 per cent. without overheating.

## MIDLAND MOTOR NOTES.

By "HERCULES."

### The Chinese Minister at Coventry.

MONDAY next in Coventry should be an interesting day to motor manufacturers. His Excellency the Chinese Ambassador is to favour the city with his presence, and the motor manufacturers have risen to the occasion, and will demonstrate to the distinguished visitor and his staff the possibilities of the motor industry. On his arrival he is to be met at the railway station and presented with an illuminated address, and he and his party will then be conveyed in motor vehicles to the various places of interest in the old city. He will also visit the motor factories and be introduced to the various processes in the construction of motors and the building and finishing of cars.

### A Growing Trade.

A SIGN of the times is the steady growth in the number of good firms taking up the supply of fittings for motor-cars and motor cycles. In various parts of the Midlands I have noticed new shops have been opened where it is now possible to obtain any motor accessory and fittings, from an ignition plug to a carburettor and cooler. This is very gratifying to owners of motors, who are able, if anything goes wrong, to call at these establishments and have the trouble remedied. Similar establishments are wanted in many places yet, but they will come in time.

### The Speed of Motor-Cars.

WITH reference to the appeal of the Yeovil District Council to similar bodies throughout the country to support their petition to the Local Government Board in favour of the amendment of the Light Locomotives Act of 1896, I am glad to notice that one or two councils in the Midlands have refused to give it their support. The good people at Yeovil would like the speed at which light locomotives are allowed to travel to be reduced from twelve to ten miles per hour, and at corners and cross roads to six miles per hour in case of motor-vehicles, and four in the case of the heavier class of locomotives. Such amendments, if carried would not satisfy these people, as the object they have in view would not be attained by such unreasonable restrictions.

### Extensions at Coventry.

STILL another firm engaged in the motor industry in Coventry have found it necessary to extend their business premises. This time it is the Fleet Carriage and Motor Wheel Works Company, Fleet Street, Coventry. Their business has steadily increased during the last few months, and they have now found it necessary to take a set of front offices in close proximity to their works. They deal in accessories, duplicate parts, rubber tyres, and manufacture motor bodies, wooden wheels, and their experience is that there is a steadily growing demand for their goods.

IT is reported from Rome that works are about to be established at Vorno, Italy, for the manufacture of motor vehicles. The car to be first produced will, it is said, be a modification of the well-known Bollée voiturette.

WHILE a Stirling-Daimler dogcart belonging to the Edinburgh Autocar Co., Ltd., was being driven along Clerk Street, Edinburgh, last week, a light pony trap, driven by a lad, who had for his companion a man of over seventy years of age, came into collision with the rear axle of the car, resulting in the overturning of the pony car with its occupants. The lad was rendered unconscious, and one of the old gentleman's arms was broken. No blame whatever is attached to the driver of the motor-car, which was travelling at a reasonable speed.

# THE HILL - CLIMBING CONTEST AT GAILLON.

(From Our Own Correspondent.)



THIS hill-climbing race, promoted by *Le Vélo*, and which it is intended to make an annual event, was successfully decided on Sunday last in the presence of upwards of two thousand spectators. Many of these enthusiasts had driven out from Paris, and when it is remembered that the scene of the competition is situated ninety-six kilometres from the capital, one realises that automobile racing in France appeals strongly to the public. The large majority of the competitors arrived at Gaillon the previous evening, and consequently the demand upon the local sleeping accommodation was somewhat heavy, and in some instances men and motors appear to have shared a common bed. Of the various performances, details of which are given below, none were more sensational than those achieved by a comparatively unknown rider, named Villemain, who mounted on a motor-cycle fitted with a six horse-power engine, actually averaged a speed of 48½ kilometres per hour in ascending a hill exceeding in some places a grade of one in nine. The course being practically straight, it became a race of motors, the more skilful riders having no opportunity of scoring by reason of their better management. All told, the "chauffeurs" actually competing numbered seventy-three, and of these fifty-eight reached the summit of the hill. The official returns were as follows:—

I. Cars (petrol) weighing more than 400 kilos.—1. Vallée, 3min. 3½sec.; 2. J. de Charmasse, 3min. 20sec.; 3. Hurtu, 3min. 45½sec.; 4. Lefebvre, 4min. 11sec.; 5. Dubois, 4min. 45½sec.; 6. Boissaye, 5min. 53½sec.; 7. Sheppard, 6min. 5½sec.; 8. Mutel, 7min. 5sec.; 9. Gibaud, 9min. 0½sec.; 10. Baillie-Lemoine, 13min. 12½sec. (Heavy oil).—1. Koch I., 4min. 8½sec.; 2. Koch II., 5min. 59½sec.

II. Cars (steam) weighing from 250 kilos to 400 kilos.—1. American Automobile (Stanley), 1min. 56sec. (Petrol).—1. Chauveau, 2min. 40sec.; 2. Van Berendonck, 4min. 1½sec.; 3. Léon, 4min. 54½sec.; 4. Schmidt, I., 7min. 40½sec.; 5. Schmidt II., 17min. 26sec.

III. Cars (steam) weighing less than 250 kilos.—1. American Automobile (Stanley), 1min. 45½sec. (Petrol).—1. Van Berendonck, 2min. 44sec.; 2. Gallet and Itasse, 3min. 42½sec.; 3. Thibaud, 3min. 54½sec.; 4. P. Sage, 4min.; 5. G. Richard, 7min. 27½sec.

IV. Motor cycles weighing less than 150 kilos.—1. Villemain, 1min. 20sec.; 2. Barar, 1min. 23½sec.; 3. Béconnais, 1min. 25sec.; 4. Cailliois, 1min. 43sec.; 5. Luc, 2min. 5½sec.; 6. Bastaert, 2min. 5½; 7. Maas, 2min. 15½sec.; 8. Degré, 2min. 17½sec.; 9. Barochez, 2min. 34½sec.

V. Motor cycles of two places, carrying two persons.—1. Villemain, 1min. 28sec.; 2. Osmont, 1min. 46½sec.; 3. Aubin, 2min. 18sec.; 4. Sevette, 3min. 22sec.; 5. Petitjean, 3min. 35½; 6. Maas, 3min. 37½sec.; 7. Dervès, 7min. 52½sec.

VI. Motor bicycles.—1. Bonnard (without chain), 2min. 6½sec.; 2. Maurice (with chain), 2min. 30½; 3. Labitte (with chain), 2min. 33½sec.; 4. Cousin (with chain), 3min. 48sec.

VII. Motor cycles without chain.—1. Villemain, 1min., 16½sec.; 2. Baras, 1min. 27sec.; 3. Marcellin, 1min. 30½sec.; 4. Osmont, 1min. 30½sec.; 5. Renaux, 1min. 35½sec.; 6. Bardin, 1min. 36½sec.; 7. Gasté, 1min. 37½sec.; 8. Teste, 1min. 43sec.; 9. Delisle, 1min. 44½sec.; 10. Battaielli, 1min. 46sec.; 11. Bastaert, 1min. 52sec.; 12. Mistigry, 2min. 59½sec.; 13. Maas (with two persons), 5min. 10½sec.

It will be remarked that no electric vehicles participated, but this is accounted for by the distance of the hill from Paris, or other large centre. Three electrically-propelled cars had entered, but two did not put in an appearance, and the third

broke a pinion during its trial and so' did not finish the course. As mentioned above, the proprietors of *Le Vélo* intend to make this event an annual one, and next year's race will be held on 11th November.

## MOTOR VANS FOR CHELSEA.



THE invitation of the Chelsea Vestry for tenders for three motor-vans has resulted in the following being received:

|  | Each For 3 van. vans. | £     | £ |
|--|-----------------------|-------|---|
| 1. Messrs. Coulthard & Co., of Preston.....                            | 475                   | 1,425 |   |
| 2. The Lancashire Steam Motor Co., of Leyland:                         |                       |       |   |
| For coke-fired Motor .....   | 490                   | 1,470 |   |
| For oil-fired Motor .....  | 510                   | 1,530 |   |
| 3. Messrs. E. H. Bayley & Co., of London, S.E.....                     | 650                   | 1,950 |   |
| 4. The Steam Carriage and Wagon Co., of Chiswick (Thornycroft's) ..... | 700                   | 2,100 |   |
| * Less 2½ per cent, with partial prepayment                            |                       |       |   |

On comparing the estimates with his specification, Mr. T. W. E. Higgins, A.M.I.C.E., the Surveyor to the Vestry, in his report to that body, says no firm has strictly complied with it, and thus draws attention to the departure therefrom:—

*Compliance with the Locomotives on Highways Act.* Messrs. Coulthard's motor-van is 2 tons 19 cwt., or just one hundredweight under the weight allowed by the Act. In full working order it weighs 3 tons 8 cwt. The Lancashire Motor Company do not mention the weight of their vehicle. Messrs. Bayley and Co. say all motor-vans at present in use exceed the statutory weight, it being impossible to construct one to carry a load of four tons of a tare weight less than 3 tons. They add that the Local Government Board are alive to this fact, and do not, therefore, enforce the strict letter of the law. Messrs. Thornycroft state that their standard van (for which, apparently, they tender) does not of itself carry more than 3 tons, but would haul another 2 or 3 tons on a trailer. There is no doubt that the motor-van industry is sorely crippled by the 3-ton limit. There is a consensus of opinion amongst engineers and manufacturers that this limit should not be insisted upon, and, I believe, Messrs. Bayley correctly interpret the attitude of the Local Government Board thereon. But, as regards the present tenders, Messrs. Coulthard and Co. undertake to comply with the 3-ton limit.

As regards the types of vans and speed, there does not appear to be anything to call attention to, except that Messrs. Bayley in their estimate of the cost of working provide for a lad to assist the driver, but this is, probably, only for long distance runs.

*The motive power and cost of working.*—All the firms tender for steam motors. Messrs. Coulthard prefer oil fuel, the other three prefer coke; but, as regards the guaranteed costs of working, no one gives any. They give estimates. Messrs. Coulthard, 2.88 pence per net-ton mile; the Lancashire Motor Company, 5.26 pence per vehicle mile. Messrs. Bayley say that the cost of fuel on their motor has worked out at one-twelfth of a penny per mile, and the cost complete at 8d per net-ton mile, and Thornycroft's submit an estimate based on dust removal figures. Probably the meaning of all these differences is that no motor vans have been long enough in work for the makers to give guarantees upon past results.

*The height of platform.*—All comply with this, except Messrs. Thornycroft, who say that the platform of their standard van slightly exceeds 3ft. 4in. above the ground level.

*Inspection.*—Messrs. Bayley do not include this in the list of conditions to which they tender, but this is possibly an oversight.

*Week's trial.*—Messrs. Coulthard and the Lancashire Motor Company do not mention this, but they probably imply it. Messrs. Thornycroft agree to it, but Messrs. Bayley have again not included this clause as one to which they tender.

*Payment.*—Messrs. Coulthard ask for 90 per cent. within one month of approval, at their works. The Vestry, however, would require the delivery in Chelsea, and after delivery here I would approve them, if satisfactory. Neither the Lancashire Motor Company nor Messrs. Bayley mention any different terms to those of the Vestry, but Messrs. Thornycroft say one-third to be paid with the order and two-thirds on delivery. Of course, the Vestry could not consent to this.

*Maintenance for two years.*—Messrs. Coulthard ask £75 per van per year, but as they undertake for this to have a man continually available for the period of two years it might be possible to come to some terms whereby the man might be employed by the Vestry as a driver. The Lancashire Motor Company's price, 82 per cent., would amount to £58 16s. per van per year. Both these firms are prepared to guarantee these prices, but Messrs. Bayley estimate this cost at about £104 a year per van, and Messrs. Thornycroft are not prepared to give a definite undertaking at present, but their manager has since informed me that they would maintain the vans free for six months.

All agree to the conditions as to delivery. The bodies and encasing machinery are satisfactory in all cases.

Taking the Specification as a whole it is seen that Messrs. Coulthard and Co.'s tender shows the nearest compliance with the conditions under

which the various firms were asked to submit estimates; but in considering any variation from the Vestry's conditions it should be borne in mind that there are two classes of variations: first, those which are caused by the van being constructed according to a maker's own pattern, towards which the Vestry might, if they think fit, allow a little latitude; secondly, variations from the Specification as to payment and approval, which should not be permitted, any tender being only accepted on condition that the Vestry's conditions in these respects should be strictly complied with.

It might be asked why some of the firms do not adhere more closely to the Vestry's conditions. The reason, I think, is that some firms have special types of vehicles—Messrs. Thornycroft, in particular, quote for their standard type of van—and it is much more satisfactory to a large firm, and in the end to those who buy their vehicles, that they should make all their vehicles of standard sizes and so be enabled to make all similar parts in all machines from the same patterns.

### THE MADEVIC MOTOR-CARRIAGE COMPANY, LIMITED.

A PETITION was presented on Saturday last by the Madelvic Motor-Carriage Company, Limited, Edinburgh, and others, to the Court of Session, at Edinburgh, for authority to place the liquidation of the company under the supervision of the Court. The company was incorporated in January, 1898, with a capital of £25,000 in £10 shares, which was all subscribed for, allotted, and paid up. By a special resolution in July, 1899, the nominal capital was increased by £25,000 in £10 shares. The company acquired ground at Granton, on which a factory was erected at a cost, including plant, of about £33,000. The company has carried on business, but no dividend has been paid on its shares. Efforts were made to obtain subscriptions of the additional capital; but no part of it was subscribed, and at a meeting of the company on Friday, last week, it was resolved to voluntarily wind up. Mr. Hall C. Chiene, of Edinburgh, has been appointed liquidator.

### FURIOUS DRIVING CASES.

AT the Brighton Police-court, last week, before the Stipendiary (Mr. C. G. Heathcote) and other magistrates, Mr. James B. Roberts-West, 18, Regency Square, was summoned for driving a light locomotive at a speed greater than was reasonable and proper, on the King's Road, on November 23rd. Mr. W. D. Peskett appeared on behalf of the defendant, who was not present. Detective Overington, who served the summons, stated that defendant said he lost control of the machine going from King's Road to Regency Square. Cross-examined: He did not say anything went wrong with the machine, but said it was a beastly thing, and he wished he had not bought it. Mr. Peskett, on behalf of defendant, pleaded guilty. Defendant was fined £5 and costs, or 14 days.

AT the Brighton Police court last week, Master Jack Lawson, Hampstead, London, was fined £5 and costs, or 14 days, for driving a light locomotive in King's Road, Brighton, on November 13th, at a speed greater than was reasonable and proper, having regard to the traffic in the street.

THOMAS SMITH, 16, Digbeth, Birmingham, manager to Bard Cycle Company, Birmingham, who did not appear, was summoned at the Hove Petty Sessions, last week, for that being the person in charge of a light locomotive, and using the same on the London Road, Patcham, he did drive such light locomotive at a greater speed than twelve miles an hour on Sunday, November 19th. Service of the summons was proved by declaration. P. C. Leveret, stationed at Patcham, said about 2.15 on the day named he saw the defendant driving a motor tricycle at a furious rate. He covered a furlong in 24½ seconds, which was at the rate of 18½ miles an hour. P. C. Ford also spoke to the fast rate at which defendant was going. Defendant told him that he should not go more than twelve miles an hour. In the end the defendant was fined £5 and costs, or a month.

BEFORE Judge Robertson, in Edinburgh City Police Court on Monday, Andrew Baptie (23), motor car driver, 9, Lochrin Place, was convicted of driving a motor car, belonging to the Edinburgh Autocar Company, in a reckless and careless manner in Atholl Crescent, on November 14th last, in consequence of which the car came into contact with a cab. The cab was in the middle of the street, going west, and about to turn to the cab stand, when the accused drove up behind at a pace of about ten or eleven miles an hour, and thinking the cabman was going to turn into a side street to the right tried to pass him on the left and struck the wheel, but inflicted no damage. For the defence, it was stated that just before the car got up the cab turned slightly to the right, thus justifying the supposition that it was turning down the side street, but after hearing the evidence Bailie Robertson found the charge proven, holding that the car should have pulled up rather than pass the cab on the wrong side, and imposed a fine of 7s. 6d. with the option of three days' imprisonment.

THE Thompson Automobile Co. has been organised in New Jersey with a capital of £12,000.

THE National Cycle and Automobile Co. has been organised in Toronto, Canada, to manufacture bicycles and automobiles.

AT the second annual general meeting of the Rossleigh Cycle and Motor Company (Limited) at Edinburgh last week, Mr. W. L. Sleight said the results of their experimenting with motors had not so far been very satisfactory, and at present he had not been able to recommend that the company take up this branch of business.

THE Royal Commission, British Section, of the Paris 1900 Exhibition is in consultation with the Allotment Committee of the Automobile Club of Great Britain with reference to the allotment of space in the British Automobile section. The space placed at the disposal of the Royal Commission for the automobile section is not nearly sufficient to satisfy the applications.

MESSRS. MIDDLEMORE AND LAMPLUGH, LTD., Coventry, are introducing a new saddle for motor-cycles. It measures eleven inches in length and ten inches across the back, is supported by two springs at the rear, and is fitted with a special half-cradle spring at the front. It has a strong clip, and is very narrow at the peak.

ON Saturday night one of the motor-cars which convey passengers from Leicester to Aylestone came into collision with a waggonette on the Aylestone-road. The driver of the waggonette, a man named Pauley, was thrown to the ground and badly bruised, and a boy of twelve sustained an injury to his shoulder, but the other occupants of the two vehicles escaped unhurt.

IN connection with the motor-car competition to be held in January next in connection with the Midland Cycle and Motor-Car Exhibition a committee of experts has been appointed, consisting of the following gentlemen:—Messrs. Critchley, of the Daimler Motor Company; R. W. Smith, of the Eadie Manufacturing Company; F. W. Lanchester, C. R. Garrard, S. F. Edge, S. Gorton, R. F. Hall, J. Iden, and others whose names we have not received.

THE motor-car is to penetrate as far north as Cariboo and Omineca, British Columbia. A motor stage coach is said to be in course of construction in Vancouver to be operated on the Ashcroft-Cariboo road. An American company is also applying for incorporation at the next session of the British Columbia Legislature for the purpose of building a road into the Omineca district, to operate automobiles and other vehicles for passenger and general transportation business.

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, DECEMBER 15, 1899.

[No. 41.]

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## COMMENTS.



TWO meetings have recently been held in connection with the formation of a union of motor-manufacturers, and in both instances the circumstances have been unpropitious. There is no doubt the Automobile Club made a tactical mistake, and at the second meeting Mr. Lawson took up a position among the manufacturers to which he was not entitled. The attendance at the first meeting was practically the same as at the second—with the exception that on the latter occasion a large sprinkling of cycling folks added to the size of the audience. After a short wait in a business-like room, those who had assembled were invited into an adjoining compartment where a party of enthusiasts were discovered at the last course of what had evidently been an appetising luncheon. Very quickly a fragrance from many cigars prepared the atmosphere for the chairman's call to order. Whether this caused a lackadaisical feeling to come over the company or not we, of course, cannot say, but certainly not more than twenty voted for any single resolution—and there were at least eighty gentlemen present. Probably some of the remainder were thought of by Mr. Gretton when he suggested that the enjoyment of coffee and cigars was not conducive to talk—although, he added, some would probably talk when they got outside. They, however, held their tongues in their cheeks. Seeing that neither attempt has yet proved successful it would appear to be the duty of the manufacturers to have another try, and at a third meeting—if it could be called by someone who has not yet been associated with the control of the movement—try and secure a satisfactory association. Whether those present agreed with Mr. Mann or not, the meeting could not but admire the persistency with which he maintained what one of the speakers declared to be a very “sensible attitude.”

### Automobilists and Brighton.

WE doubt if there is a town in the country which has secured so much profit from the pleasure side of automobilism as Brighton. Favourably situated by the sea, within reasonable distance of London, and reached by a good road, it has always been regarded by those who journey by motor-car as a place of desirable destination. The runs of the Automobile and Motor-car Clubs and the hundreds of trips that have been made by individual automobilists must have been a source of revenue to the town—not only to the hotel proprietors, but also to the livery stable keepers and others who charge so highly for the slightest service. Probably bearing these facts in mind, several of the leading citizens have publicly declared their interest in our movement and their desire to welcome motor-carists to the town.

### Driving Motorists Away.

THESE things considered, it seems strange that a feeling approaching hostility has lately broken out in the ranks of the local police, and that this is being fostered by the way in which the stipendiary has dealt with several cases lately before him. Everyone who is summoned at Brighton nowadays for alleged rapid driving is evidently liable to a fine of £5 and costs—and whether they be fifteen years of age, or more, matters not to the police authorities, whose action is calculated to cause Brighton to be avoided by all automobilists, with consequent loss to the town and regret from all who have regarded the resort as progressive and fair-minded.

### Two Typical Cases.

ON another page we publish two reports which should convince our readers that London-by-the-Sea is a place that is unsafe for those who use the motor-car. In the first case no accident occurred, the steering of the vehicle was good, and the defendant denied that the speed was more than ten miles an hour. Result, £5 and costs. In the second case Mr. C. Jarrott was the accused, there being three witnesses against him. One said the speed was twelve miles an hour, another declared it to be fourteen, and a third testified to the “very furious rate.” Mr. Jarrott's contention was that he was not the person in question, seeing that he was crawling behind “other vehicles at a laggard pace.” He stabled his machine, and was surprised to be told by the police that he had been doing anything wrong. But the policeman declared his faith in his own powers of identity, and Mr. Jarrott will have to pay £5 and costs. These cases will probably be a warning to many to avoid Brighton in future, until its police resume their whilom reasonableness, or are told that they must not exercise their authority in a too wanton and wilful manner.

### A Third Case.

SINCE the foregoing notes were written another case has occurred in which a similar fine has been inflicted, with, however, an alternative of twenty-one days. This time it is Mrs. Langtry's husband who is the delinquent, so that it is not only strangers to the town who are thus summarily dealt with, but residents as well—all of which seems to confirm the impression that a dead set is being made at automobilists in that part of the world.

### Electrical Cars and Long Journeys.

AN interesting experiment in electrical motors took place on Wednesday, the 29th ult., when a trip was made by Mr. A. A. Jordan, of the Electrical Undertakings Company (Leitner system), from London to Brighton in an electric game cart, with a view to demonstrating the possibility of journeying between London and Brighton in one day, with only one charge of the batteries. There was considerable interest displayed in the event, which proved successful. Piccadilly



Circus was made the starting and the Hôtel Métropole, Brighton, the ultimate destination. The travelling averaged  $11\frac{1}{2}$  miles per hour, and, without recourse to a recharge, the vehicle was, successful in completing the distance in good time. Again, on Sunday last, the 10th inst., two of this company's cars were run from London to Brighton each on one charge. One of the cars was driven by Mr. A. A. Jordan, accompanied by the secretary of the Automobile Club. The run was made on one charge only, the average speed being a little over nine miles per hour. The identical battery used in the first run was employed in the second run. It is a 4-plate (Leitner) battery of forty cells with Leitner motors. This is looked upon as a very notable performance, the battery being, it is claimed, in no way depreciated by the severe tests which are entailed in a run upon the Brighton road, where so many hills have to be contended with.

#### Motor-Cars in Derby.

THE formation of the Derby Motor-Car Co., Ltd., has already been alluded to in these columns. The company has been formed with the purpose of supplying motor-vehicles for special journeys, pleasure parties, and for plying for hire on certain routes in the town. So far two cars have been purchased, and these have already made several experimental trips with the

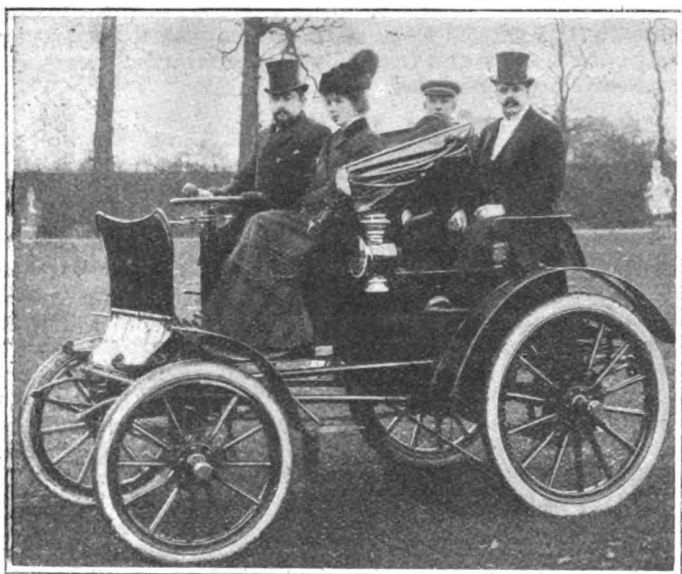


Photo by]

[Argent Archer, Kensington.

DR. LEHWESS AND PARTY ON THE GOBRON-BRILLIÉ "SILENT" CAR.

most satisfactory results. Both are fitted with Daimler motors, but whilst one was built by the Motor Manufacturing Company, Ltd., the engine of the other was supplied by the Daimler Motor Company, and the body designed and made by Messrs. Sanderson and Sons, London Road, Derby. The design in both cases is very attractive, the latter car being of varnished wood. There is accommodation in it for ten passengers in addition to the driver, and the seating is everything that could be desired. The other car will accommodate eight passengers. A third car has been purchased, and this is expected in Derby in the course of about a fortnight. The first trial run took place a few days ago, when three cars journeyed from the Town Hall, Derby, to Ashbourne. The directors had invited several friends to accompany them, including a number of local magnates. The start was witnessed by a number of interested spectators. Ashbourne was duly reached in one hour twenty-five minutes, and here the vehicles were surrounded in the yard of the Green Man Hotel by a large throng of farmers and inhabitants. Here the travellers partook of a plentiful repast, during which Alderman Ann, on behalf of the visitors, proposed success to the company. On the return journey the very steep hill from the town was easily negotiated, one car carrying twelve passengers. After deducting stoppages, the return journey was accomplished in about one

hour's time. At present the cars are only being used for the purpose of taking out private parties, but towards the end of the month a public service will be started. No final arrangement has yet been made, but it is proposed to run the cars to Ashbourne, Alvaston, Old Normanton, etc. That they will prove exceedingly popular we have very little doubt.

#### Automobilists and Horses.

JUST as in this country, automobilists in America are experiencing trouble with horses. But even as in England, it is being remarked that accidents are due more to the fact that the average driver is watching the automobile rather than his own horses. One Transatlantic *chauffeur* who has just returned from an automobile tour remarks, "Horses look with disfavour on the automobile, but of the many we met, but one did anything more than start up a little. On a wide road their momentary fright offers no embarrassment. The automobile crosses the road and passes them before they realise its terrible horselessness. The more swiftly the machine goes by, the safer for the drivers of horses. On the narrow mountain road there is a little more difficulty. It is surprising, moreover, to note how many teamsters going to or from large towns are half asleep, driving carelessly, with slack rein."

#### Motor Vans for Chelsea.

EVIDENTLY the members of the Chelsea Vestry, having decided to adopt motor-vans for their public purposes, are equally well determined that the type selected shall be the very best possible. As will be remembered, tenders were invited, and the surveyor was asked to report thereon. This he did in a very comprehensive document, the main features of which were set forth in our columns last week. But the completeness of the report suggested that the vestry should have time to consider its main points, and it has been decided to postpone its consideration till 13th February, 1900. In the meantime Mr. Higgins is to take such action as he thinks proper to glean further information about the particular vans tendered for, so that when the vestry re-assembles after the Christmas recess it may hope to have a full education on the subject.

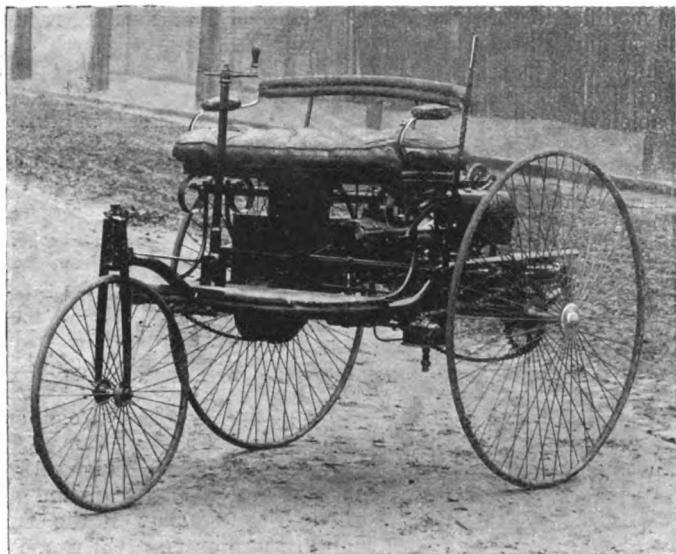
#### Motor-Car Finance.

FOLLOWING the announcement that Mr. A. R. Harvey and Mr. W. W. Gibbs have bought Mr. Harry J. Lawson's interests, amounting to over half a million sterling, in the British Motor Company, several paragraphs on motor-car finance have appeared in the columns of the daily newspapers. All have been of a very general character, the main point of discussion centring around the question as to whether a rig has been attempted or not. Last week the shares of the company opened at 7s. on the Tuesday, and closed at 14s. on the Thursday. The quotation in London on Wednesday of this week was 10s. 6d. On the same day the shares of the Daimler Company were selling at £5 10s. There is no doubt, with the development of the industry, the shares of motor-car companies cannot but advance in value. The outlook for trade is decidedly good, and that is an essential point which will, of course, have its effect on profits and dividend.

#### Projected Trials of Electrical Vehicles.

A MEETING of the representatives of manufacturers of electrically-propelled vehicles was held at the Automobile Club, 4, Whitehall Court, S.W., on Monday, the 11th inst. Amongst the members of the committee present were Mr. Roger W. Wallace, Q.C., Mr. Frederick R. Simms, Mr. Stanley Spooner, Mr. Harrington Moore (in the chair), and the secretary. The following representatives of firms, with others, were present:—Mr. Joel, Mr. Shippey, Mr. Opperman, Mr. Percy Northey, Mr. Mackenzie, Mr. McManus, and Mr. Bersey. After a discussion it was resolved—1. That trials of electrical vehicles be held in 1900, under the auspices of the Automobile Club. 2. That the trials

shall take place after the 1,000-mile trial. 3. That they shall consist of four consecutive days' trials as follows:—(a.) A run over a good course; the run to be of unlimited length; the driver to declare when the run is finished. (b.) A run of 30 miles in a hilly district. (c.) A run of 30 miles over an average road. (d.) A run of 30 miles over a fairly flat road. The points to be taken into consideration are:—The consumption of energy; average speed; the number of passengers carried, etc. The



THE FIRST BENZ MOTOR-CAR. BUILT AT MANNHEIM IN 1885.

competing vehicles will be continuously under the supervision of the club officials during the four days' trials.

#### "A Flash of Lightning."

AUTOMOBILISTS are a very progressive section of humanity, and, according to the police authorities in many districts, are given to rushing along the streets at speeds varying from twenty to fifty miles an hour. Someone in Edinburgh has made an even better pace. A correspondent of the *Scotsman* was driving a carriage and pair in Princes Street, Edinburgh, when "a motor passed me running at a speed which must be dangerous to the public. It was going in the same direction, and passed us like a flash of lightning." We always regret to hear of automobilists exceeding the regulation, but such similes based upon disordered imagination are equally to be deplored. For if the nervous people who do not like such new ideas wish to impress automobilists with their own reasonableness they will have to restrain their words to the commonplace of truth, instead of hurling "flashes of lightning" and talking of "murderous motors."

#### The Automobile Club.

FOLLOWING close on the heels of the Automobile Club's house dinner on Wednesday evening last, comes the announcement that the second house dinner of the season will be held on Wednesday evening, the 10th of January next, when Mr. Thomas H. Parker, M.I.M.E., has kindly consented to read a paper, illustrated by lantern slides, on "Electricity on Common Roads." The paper should be an interesting one, as Mr. Parker has devoted considerable attention to the matter.

#### The Halfpenny Press.

FIRST the *Daily Mail*, then the *Morning Herald*, and now the *Morning Leader* comes out with a column of notes once a week on automobile matters. It is rather strange that all the halfpenny morning papers of the Metropolis are now giving attention to the motor car, while the penny journals are

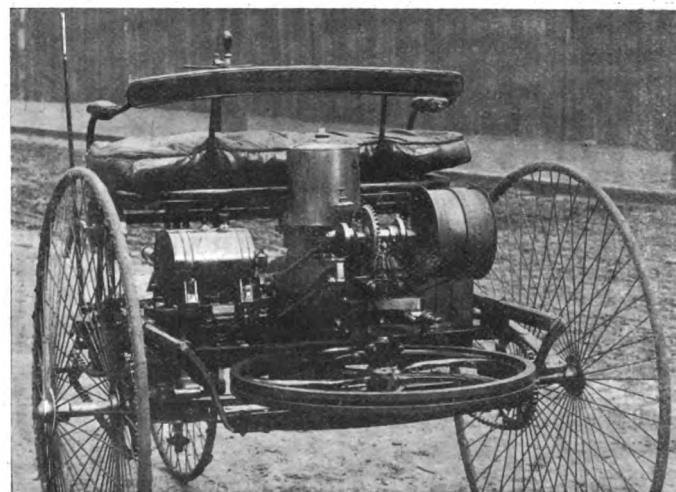
apparently ignoring the automobile both as a help to business or means of pastime. The *Leader* correspondent heads his column "Moting Notes," a title that savours of Americanism, and might have been discarded in favour of something in English.

#### Suitable Speeds For Motor Vehicles.

MR. HENRY EDMUNDS, a member of the Automobile Club, has kindly offered a special prize of £10 for the best essay on suitable speeds for motor vehicles, with due consideration for size, weight, and local conditions under various circumstances. The decision as to which is the best essay will rest with the Club Committee. Essays are to be submitted on the understanding that they may be retained at the discretion of the Committee, for publication, on payment to the writer of the sum of two guineas. An essay must not exceed a thousand words, and it must be typewritten, on one side of the paper only, and signed by a *nom-de-plume*. A stamped envelope, addressed to the writer, should be sent with the essay. The name of the successful competitor will be published afterwards. All essays must be in the hands of the Automobile Club Committee by twelve noon, on Thursday, February 1st, 1900.

#### Yeovil Again to the Front.

WE are constantly hearing of the resolution of the Yeovil District Council, which is apparently the pioneer in the movement against the speed of motor cars. Evidently the Council is determined to acquire reputation, and its friends will doubtless be glad to learn that the distinguished Rural Council of Guisborough (Yorks) and the renowned District Council of Wimborne (Dorset) have decided to take their stand by Yeovil, and petition the Local Government Board to reduce the speed at which motor-cars are allowed to travel from twelve to ten miles. Perhaps one of the most sensible views of the matter yet taken by the local authorities was that of the Horsham Rural Council, which agreed that the Yeovil letter should be allowed the privilege of resting upon the table. That having been done it was decided to request the Chief Constable for West Sussex to see that automobiles were driven at the regulation speed.



REAR VIEW OF THE FIRST BENZ MOTOR-CAR, SHOWING MOTOR AND TRANSMISSION GEAR.

#### The First Benz Motor-Car.

IN view of the great popularity of the Benz motor-carriages, the accompanying illustrations of the first automobile turned out by Messrs. Benz, of Mannheim, may not be without interest. As will be seen, there is a vast difference, both as regards the general appearance and the arrangement of the mechanism, between the modern Benz car and the one illustrated, which was built in 1885, or nearly fifteen years ago. The maximum speed of the vehicle was only nine miles per hour, while it could ascend

gradients of 8 per cent. Since the vehicle illustrated was built, Messrs. Benz have turned out over 2,000 cars, about 600 of which have been disposed of in this country by Messrs. Hewetson. While speaking of the Benz cars, we may mention that the English agents are supplying a very useful handbook to users, giving particulars of all the various parts of the vehicle, and hints as to the management and working of the same. The handbook is accompanied by two very useful coloured illustrations, giving a sectional elevation and plan of the mechanism of the car.

### Collision with a Motor-Car.

A CASE of considerable interest to motorists and manufacturers has just been decided at the Warwick County Court. Mr. Charles Thomas Crowden, motor-car manufacturer, of Leamington, sued Mr. James Mason, a butcher of the same town, for £4 7s. 6d. for damage caused to a motor-car by the alleged negligent driving of a horse and cart by defendant. A counter claim for £6 11s. 6d. was put in by defendant, who alleged that his trap was damaged to that extent, and that the collision was the result of Mr. Crowden's negligence. His Honour (Judge Ingham) took the view that the horse swerved, but that there was no negligence on the part of the defendant. He was also not satisfied that there was any negligence on the part of the driver of the motor-car, and accordingly dismissed both claim and counter claim, allowing no costs on either side.

### The Verdict.

OUR Midland correspondent, in commenting on the case, remarks: "I do not think there is much to grumble at in the judgment, though of course both plaintiffs and defendant's opinion, that they were in the right, has not been shaken. But the evidence was conflicting, independent witnesses being called on both sides. There is some satisfaction in the fact that the Judge took a level-headed view of the case, and did not assume that because the collision was between a motor-car and a horse and trap, the driver of the motor-car must necessarily have been guilty of negligence. Some people seem to be so prejudiced against motor-vehicles that they would at once jump to the conclusion that if there were negligence, it must be on the part of the motorist. Happily, Judge Ingham is not one of these, and decided on the facts as they came before him. The moral of this county court story is obvious: that too much care cannot be exercised by motorists and those in charge of horses and traps."

### The Liverpool Self-Propelled Traffic Association.

THE opening meeting of the fourth session of the Liverpool Self-Propelled Traffic Association will be held at the Royal Institution, Colquitt Street, Liverpool, on Tuesday evening, the 19th inst., at 7.45 p.m., when the president and council will be "at home" to members and guests. The programme includes a reception by the president, Lord Derby, followed, at 8.15 p.m., by the presentation of the report by the judges of the 1899 trials with lantern illustrations.

### Steam Motor Vehicles in America.

IN a recent issue we drew attention to the fact that the Commissioners for the district of Columbia, U.S.A., had decided that a "steam-engineer's licence is necessary for operating on the streets of Washington automobiles run by steam generated from petroleum spirit or other fuel." We did not expect that the matter would be allowed to rest at this, so that we are not surprised to learn that counsel for the Locomobile Company of America has requested information of the Commissioners as to the requirements necessary to secure a permit for the operation of a Stanley steam-car in Washington. "It is recognised," counsel states, "that any vehicle capable of running

over fifteen miles an hour—whether propelled by steam, electricity, or gasoline—or whether carrying corrosive acids or ignitable liquid, should be under the control of competent parties. The company gives practical training to each purchaser, but as such vehicles are sometimes sold by the purchasers, the company itself cannot always be sure that those who use them are fully informed as to their operation. No objection would be made whatever to a requirement that licences should be issued to those who, after examination, showed themselves competent to run the vehicles." It has therefore been suggested that, without any modification of the existing regulations, an additional regulation should be made to the effect that third or fourth class engineer's licence shall be granted, authorising the holder to run a motor-vehicle wherever he showed himself, upon examination, capable of so doing.

## THE AUTOMOBILE CLUB 1,000-MILE TRIAL.



THE arrangements for the Tour of Inspection of the Route of the 1,000-Mile Trial are shown below. Members are requested to attend, and to induce others who may be interested to attend, the meetings at the various centres, and are invited to take part in the Tour of Inspection on their motor vehicles so far as they may be able.

The start will take place from the hotels at the various centres at the hours shown in brackets.

1899.

Thursday, December 14th.—London to Bristol. Meet for start at Albert Hall, Kensington, at 7.15 a.m.

Friday, December 15th.—Meeting at Grand Hotel, Bristol, at 12 noon.

Saturday, December 16th.—Bristol [8.30 a.m.] to Birmingham, via Gloucester and Worcester.

Tuesday, December 19th.—Meeting at Grand Hotel, Birmingham, at 12 noon.

Wednesday, December 20th.—Birmingham [8.30 a.m.] to Manchester, via Stafford and Newcastle-under-Lyme.

Thursday, December 21st.—Meeting at Queen's Hotel, Manchester, 12 noon.

Friday, December 22nd.—Manchester [7 a.m.] to Carlisle, via Preston and Shap.

Saturday, December 23rd.—Carlisle [7 a.m.] to Kendal, via Shap. Kendal, via Keswick and Bothel, to Carlisle.

Sunday, December 24th.—Carlisle [7 a.m.], via Moffat, Gordon Arms and Peebles, to Edinburgh.

Wednesday, December 27th.—Meeting at Royal Hotel, Edinburgh, at 12 noon.

Thursday, December 28th.—Edinburgh [8 a.m.] to Newcastle-on-Tyne.

Friday, December 29th.—Meeting at County Hotel, Newcastle-on-Tyne, at 12 noon.

Saturday, December 30th.—Newcastle-on-Tyne [8.30 a.m.], via Northallerton, to Leeds.

1900.

Monday, January 1st.—Meeting at Great Northern Hotel, Leeds, at 12 noon.

Tuesday, January 2nd.—Leeds [8.30 a.m.] to Sheffield.

Wednesday, January 3rd.—Meeting at ——— Hotel, Sheffield, at 12 noon.

Thursday, January 4th.—Sheffield [8.30 a.m.] to Northampton.

Friday, January 5th.—Northampton [8.30 a.m.] to London.

According to the latest arrangement the 1,000-mile trial will probably commence on April 23 next. The full rules relating to the trials are published in the last issue of the Automobile Club Notes and Notices.

## THE CHINESE AMBASSADOR AND THE MOTOR INDUSTRY.

### OFFICIAL VISIT TO COVENTRY.



THE chief centre of the motor-making industry, the city of Coventry, was on Monday visited by his Excellency Sir Chihchen Lofengluh, K.C.V.O., Chinese Minister Plenipotentiary to the Court of St. James, and one of the most striking features of his visit was the tour through the city in motor-cars. His

Excellency is making an official tour of the country, with the object of visiting all the great industrial centres, and of inspecting works typical of the great industries which have contributed so much to England's commercial supremacy. In this tour he is

Daimler Company had six of their well-known cars present, whilst the Motor Manufacturing Company sent three Princess cars, three wagonettes, two dogcarts, and an Iveagh phaeton. Motor tricycles were not unrepresented, the Motor Manufacturing Co. having one of these machines in the procession, which was then formed. A pilot car, containing the chief constable of the city, led the way, followed by four members of the City Council, forming the reception committee. The third automobile carried Lord Suffield, the Hon. Percy Allsopp, Mr. Perowne (son of the Bishop of Worcester), and Mr. Laurence Cowen (Secretary of the Article Club). The fourth car conveyed the Chinese Minister's sons, attachés, and secretary, and in the fifth his Excellency rode with the Mayor. In the sixth car were Messrs. E. H. Bayley (chairman) and H. E. Sherwin Holt (director), John Ware (secretary), and J. S. Critchley (works manager), representing the Daimler Co. The remaining cars were filled by members of the Corporation, leading citizens, pressmen, and several ladies. The leading spirit of the Motor Manufacturing Company, Mr. George Iden, occupied a seat in one of the wagonettes, and Mr. H. W. Thomas, his able lieutenant, was noticed in another.

As this unique procession moved off the crowd of spectators

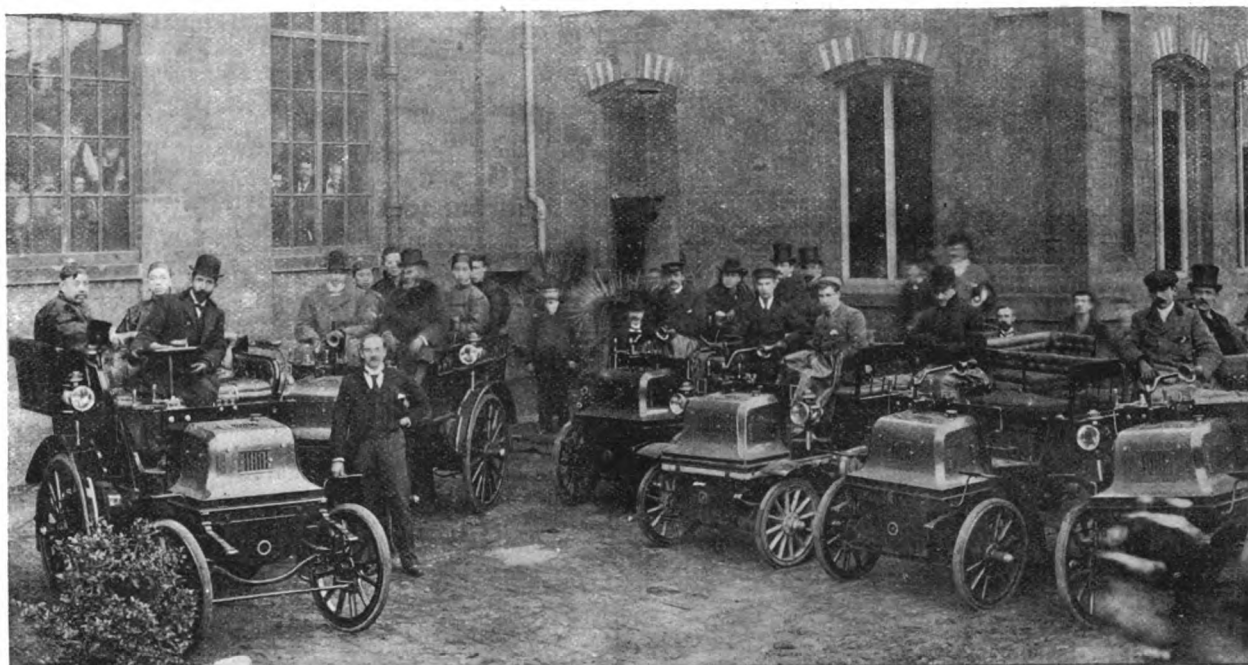


Photo by

[Maule and Co., Coventry.]

VISIT OF THE CHINESE MINISTER TO COVENTRY: THE PARTY PHOTOGRAPHED AT THE DAIMLER MOTOR CO. S WORKS.

accompanied by his two sons (Master Lo Sing Yien and Master Lo Sing Yu), Lord Suffield (President of the Article Club), three attachés of the Chinese Legation, and his Secretary (Tsend Chao Kwong). Coventry was the first town visited in the tour.

The illustrious visitors were received at the railway station, shortly after eleven o'clock, by the Mayor and Corporation, accompanied by quaintly dressed officials, the Minister being presented with an illuminated address of welcome. His Excellency gracefully acknowledged in English the compliment paid to his country and himself by the citizens in so cordially welcoming him to Coventry. He anticipated very much pleasure, he said, and also useful information to himself and to his country, in visiting so old and historical a town, the fame of which, he believed, rested on their manufacture of automobiles, cycles, ribbons, and watches.

This interesting little ceremony over, the company left the station, and the Chinese Minister and his staff then took part in what will doubtless remain a unique experience in his tour. Outside the station were drawn up in line sixteen motor-cars, which the Daimler Motor Company and the Motor Manufacturing Company had placed at the disposal of the distinguished visitors. The

gave a rousing cheer, and this was repeated as the vehicles passed through the picturesque entrance into the city. Nor could one wonder at the spectators being impressed, for here was the representative of the oldest and most exclusive civilisation of the world associated with the most recent and not the least wonderful development of a progressive people, and an advance which bids fair to eclipse all former methods of locomotion. And his Excellency, after the first few minutes, settled down to the novelty of the thing, and appeared to thoroughly enjoy the new experience. His sons and attachés betrayed no signs of uneasiness, but their enjoyment of the ride seemed to be interfered with by the keenness of the morning air. This trip was also the first of the kind experienced by many of the worthy aldermen and councillors, pressmen, and citizens, but their verdict was unanimous, so far, at any rate, as could be ascertained. Several passengers were heard by the writer descanting upon motors and their advantages. Compared with the luxury of these cars, fitted with powerful springs and pneumatic-tyred wheels, locomotion in ordinary vehicles was not to be compared. Perhaps the feature of the tour which impressed most of the visitors and the other passengers was the absolute control which the drivers



possessed over their cars, and the ease with which they could be steered. Not a single hitch occurred throughout the trip, the most serious incident being the frightening of a cab-horse, which, however, was got under control before any damage was done.

After lunching privately at the King's Head Hotel, Sir Chihchen Lofengluh, his sons, attachés, and secretary, accompanied by Lord Suffield, the Hon. Percy Allsopp, and Mr. Perowne, visited the Daimler Motor Company's Works. His Excellency was photographed seated in a motor car (see the accompanying illustration), and afterwards spent an hour in inspecting the Daimler works. The party were conducted through the various departments by Mr. J. S. Critchley, and seemed to be greatly interested in the machinery and operations of the workmen. Motors in all stages of construction were inspected, some of the larger specimens being examined with much interest. The fitting, forging, frame building, and finishing shops were visited, and three of the large mail vans also came under notice, together with wagons, char-a-bancs, and other vehicles.

A number of visitors and pressmen were also conducted by Mr. Iden and Mr. Thomas over the Motor Manufacturing Company's works, which the Chinese Minister was unfortunately not able to inspect in person. This was the more regrettable, as on these extensive premises motors and cars are manufactured in their entirety, and some of the finest machinery in the country is to be seen. Some idea of the activity which prevails may be imagined when it is stated that 350 workmen are fully engaged. Car bodies and wheels are made on the top floor, and most of the visitors were surprised at the large quantity of seasoned wood which was to be seen. Automatic machines for turning spokes and planing and piercing boards were watched, and after attention had been turned to the large number of "bodies" in various stages of construction, the party passed into the shop below, which was devoted to the manufacture of De Dion motors. The motor-tricycle shop was next visited, and considerable amusement was caused to the party by the riding of a young fellow testing a machine of this type. He steered the tricycle with remarkable dexterity in and out of the pillars and other obstacles, and altogether gave an astonishing display. The machine shop for the construction of Panhard gearing for heavy cars was next passed through, chief attention being devoted to the American automatic machinery, and then, in turn, the forging, stamping, smith departments, foundry, and finishing shop were inspected, the visit concluding with a glance at several large vehicles and a French motor-bus.

The Chinese visitors displayed considerable acuteness and intelligence during the tour, and were continually making notes of their observations.

In the evening his Excellency and suite were the guests of his Worship the Mayor at a private banquet in the historic St. Mary's Hall. The health of "our distinguished visitor, the Chinese Ambassador," was proposed by the Mayor, who pointed out that it was only within the last half-century that such a tour by a Chinese Minister was possible. The commercial value of such a distinguished representative of such a vast empire as that of China was immense, and he hoped that the leaven of reform which was at work in that country would quicken and grow, and would enable China to take that place among nations which her teeming population, her immense wealth, and the industry of her people so justly entitled her.

His Excellency, in the course of a graceful and eloquent speech, said that although he had no claim whatever to literature to be compared with their great modern poet Tennyson, he thought he was more fortunate than the poet had been in his visit to Coventry. He had not had to linger "with grooms and porters on the bridge," but had been received by the magnates and gentry. Referring to the motor industry his Excellency said—"One can scarcely realise the great future before the automobile trade without paying a visit to one of the factories. The great advantage of the motor-car is that there are no horses to be put up. It can have the speed of a railway carriage, yet it needs not to confine itself to a track laid down beforehand. It demands, further, the same amount of engineering skill to build

a motor-car as it does to build a battleship. The services rendered by the motor-car to the field gun in the time of war, as well as in the collection of mails in the time of peace, are simply invaluable, and I have no doubt when all our roads are restored these vehicles will be introduced into the far East."

Sir Chihchen also responded to the toast of "Our Visitors," and remarked that formerly China had been separated from this country by high mountains and large rivers, but now electricity and steam had removed all difficulties in the way of intercourse between the two great empires, and they were practically brought close together.

On Tuesday his Excellency and suite paid a visit to the Swift Cycle Company's Works. He was conducted over the extensive premises by Mr. R. Burns (commercial manager) and Mr. W. Radford (works manager), and after examining the machinery, noticed with considerable acuteness the motor-tricycles which were in course of construction. At the conclusion of his tour through the works, he drank success and extension of works to the Swift Cycle Company. Mr. Burns asked his Excellency to accept, on behalf of his eldest son, one of the Swift bicycles, and this request Sir Chihchen acceded to with pleasure.

In the afternoon, the distinguished visitors were greatly interested at the Dunlop Tyre factory. They passed through all the departments and witnessed the various processes in the construction of motor and cycle pneumatic tyres, and also the manufacture of rims, air-pumps, etc. Before leaving, the party also saw the Company's Fire Brigade (under the command of Captain Turpin) in operation. The Chinese Minister and his sons witnessed the performance with much interest, and at the conclusion Mr. Cowen said his Excellency was delighted with all that he had seen. Lord Suffield expressed a similar opinion. The party was shown over the works by Mr. W. Du Cros, Mr. George Du Cros, and Mr. Maloney.

In conversation with Mr. Cowen, the writer was informed that his Excellency had been greatly impressed with all that he had experienced and witnessed in connection with the motor industry. He considered motor-cars were very clean and neat, easy of control, and that they would in time supersede the horse to a very large extent.

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THE monthly meeting of the Leicestershire Automobile Club was held at the Bell Hotel last week, when the rules drafted by the committee were passed.

MR. JOHN HENRY KNIGHT is to lecture at the Camera Club, on the 22nd January, on "A year and-a-half's Experience with a Benz Car."

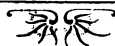
At the last meeting of the Middlesex County Council, Mr. Sharpe moved: "That the County Council of Middlesex is of opinion that the Local Government Board should issue regulations providing for the more easy identification of light locomotives." He thought that, considering the speed at which motor-cars and such light locomotives travelled along the public thoroughfares, it was highly desirable that some means, such as a light, or a letter, or a number should be carried by them, so that they might be identified in case of accident. Trouble with steam launches on the Thames had, by numbering, been removed. The matter was eventually referred to the General Purposes Committee.

THE Electric Vehicle Company has had under test for some time past at Hartford, Conn., a large electrical omnibus to carry as many as fourteen passengers. The vehicle has, it is stated, taken that number with ease over thirty-five miles of the rough roads and hills outside Hartford. It weighs 4,500 pounds, inclusive of the battery, furnished by the Electric Storage Battery Company. It is fitted with one motor, and can attain a maximum speed of ten miles per hour, while the controller allows of three speeds forward and three to the rear. Of neat outward appearance, the omnibus is also tastefully fitted up inside and is upholstered in brown morocco. It will carry baggage as well as passengers, the roof having a baggage railing. The wheels are fitted with solid tires.



# Traffic Regulations and the Speed of Motor-Vehicles on Highways.

By R. E. B. CROMPTON.



THIS was the title of a paper read at a meeting of the Automobile Club of Great Britain on Wednesday evening. Sir Richard Webster, Bart., G.C.M.G., Q.C., M.P., the Attorney-General, presided, those present including Mr. Roger W. Wallace, Q.C., Captain the Hon. Cecil Duncombe, Messrs. R. E. B. Crompton, C. Hawksley, Weaver (Surveyor of St. Mary Abbot), Fredk. R. Simms, E. Calthrop, Dugald Clerk, Bertram Blount, Engleton, T. W. Staplee Firth, Edmunds, Gorham, A. F. Bird, R. B. Bird, Claud Crompton, Sangster, Jarrott, Edge, Napier, Dangerfield, Roger Fuller, Lyons Sampson, Julius Harvey, Stanley Spooner, E. Shrapnell Smith, R. E. Phillips, Kitto, Owers, Estcourt, Pearce, Ledger, Dr. Playfair, Dr. Acworth, Messrs. Thrupp, C. Cordingley, J. J. Mann, Pedley, and C. Johnson (secretary).

## THE PAPER.

This subject is of paramount interest to automobilists, to the general public, and to those responsible for the regulation of traffic in the streets of our towns and on our country roads. The great congestion of London street traffic has formed the subject of two papers read by Sir John Wolfe Barry, K.C.B., before the Society of Arts, the first during last session, and the second of them on November 17th last. To use Sir John's words, "We have to face the absolute necessity of providing our working classes with thoroughfares by which they can reach their homes from their places of employment."

In addressing this audience, I naturally fix on the points of greatest interest to automobilists, in which I include the vast and increasing army of cyclists. I include the great speed question, as it is one of the most important factors to be dealt with by regulation, both as regards street traffic and that on country roads. I hope to be able to use arguments which will be equally appreciated by you who are automobilists, and by the public who are not, but who desire improvement in the existing state of things. I hope to show you how the admitted congestion of street traffic can be to some extent mitigated by well-considered regulation of horse-drawn, as well as automobile, traffic, and that we may hope for immediate improvement, even if the existing regulations are strictly enforced on everyone who uses the streets, whether they be drivers of vehicles drawn by horses, automobilists, cyclists, or foot passengers. I also hope to show you that we automobilists have reasonable rights, and that the new conditions created by us and by cycling will necessitate certain new regulations being enforced on those who are responsible for the maintenance of our highways.

I am afraid that an impression has got abroad that the great spread of cycling, and the introduction of automobilism, has been attended by increased congestion of street traffic, and increased danger to other users of our roads; and that this idea is present in the minds of a considerable number of men in authority is proved by the number of magisterial decisions which give any fair-minded person the impression that those responsible for these decisions consider that automobilism and cycling are both of them evils rather than benefits, and are, therefore, to be stamped out at all hazards by restrictive regulations and legislation. Of course, my present audience knows that this impression is erroneous; it is due, probably, to the natural conservatism of horse owners and horse lovers who are also magistrates, and who have the idea that any increase of automobilism is antagonistic to the horse. It is also, probably, due to the fact that automobilism has caused country roads to be now so greatly used that country folk who were accustomed to wander over them at their own sweet will, undisturbed by the automobilist's horn or the cyclist's bell, resent any interference with their past license.

Addressing myself first to the more important question of the congestion of street traffic, many people appear to think that every additional motor-car or cycle put on the streets will be an additional cause of blocks or congestion of traffic, and, perhaps, will also have a tendency to increase the number of street accidents, but it can be easily shown that the reverse is the case, chiefly because automobiles occupy less space than horse-drawn vehicles carrying the same load, and because cyclists can, to a great extent, thread in and out through narrow lanes, between lines of traffic, and thus utilise space which would otherwise be wasted.

Street traffic is conducted in conformity with the rule of the road. Put briefly, the rule of the road is to keep to the left or near side; when overtaking, to keep as close to the off side of the overtaken vehicle as possible. The rule of the road is mentioned in Clause 78 of an Act of Parliament, 5 and 6 of William IV., commonly called The Highways Act. There are other rules of the road which are not mentioned in this Act,

but which are of great importance. One is, that the traffic on a minor road, joining or crossing a main road, must always give way to the traffic on the main road. In many of the crossings in large cities, the roads are of equal importance, hence blocks are likely to occur at these points from uncertainty as to which line of traffic is to give way to the other. At these points it is customary to place police constables, whose duty is to declare, from time to time, which is to be the main line of traffic, and this duty is very efficiently carried out by our City and Metropolitan Police, to the admiration of everyone who visits London.

The regulation of street traffic, however, is complicated by several considerations, such as the following:—Our streets are not merely used as roads for intercommunication, but also as public promenades, so that one cannot consider the question of the regulation of street traffic, without taking into account the great part the promenading public play in the present congestion of traffic. Not only do foot passengers, especially ladies, greatly obstruct the footway by stopping to look in the shop windows, but carriage traffic is also purposely slowed down for the same reason. How often does one see a lady in barouche and pair, occupying twenty feet of a street, direct her coachman to drive slowly in order that she may have a better view of the shop windows, and actually cross to the off-side of the road for this special purpose?

The great popularity of the omnibus service is, I am informed by the District Railway authorities, due to the outside seats being so attractive as points of view for sight-seeing.

I am about to suggest that as the London public who use the streets are so well accustomed to obey the orders of the constables who regulate the traffic, that an enormous improvement would be effected if the existing police regulations were strictly and universally enforced. It is certain that far more traffic would be passed over our streets than at present if the rule of the road was strictly adhered to by all drivers of vehicles and by cyclists. It would further improve matters if the crossing of foot passengers, fixed points for stopping omnibuses, and the loading and unloading of goods in certain main lines of thoroughfare, were subject to further regulation. For some years past I, as a cycle rider, have been a close observer of London traffic, and have noticed how that drivers of all classes habitually waste the available road surface in not obeying the rule of the road by keeping as close as possible to the near side. Instead of doing this, they habitually drive down the centre of the road, so that other drivers who overtake them have either to pass by going on the wrong side, i.e., the near side, or they have to be forced over into the line of traffic coming in the opposite direction. It is quite common to see a line of carts, the first cart of which is driven at a considerable distance from the near kerb, the next cart following a little further out, and so on until the tail of the procession is well over to the off-side of the road, thus forcing anyone overtaking this procession to cross to the off-side, and thus run the risk of an accident caused by vehicles meeting him. This "echeloning" of vehicles is not confined to drivers of carts; I regret to say that omnibus drivers, who are among the most careful of our London drivers, often do the same thing. It is convenient to call this practice "road-wasting," and I believe that if this road-wasting were reduced to a minimum, by enforcing Sir Edward Bradford's notice which was issued in August, 1898, and by summoning the drivers until attention is paid to it, the capacity of our streets would be nearly doubled.

The theoretical disposition of traffic is in parallel lines. A road 40ft. wide between the kerbs will admit of four lines of traffic, i.e., two lines in each direction, but as this would not allow of what I call overtaking space, if we attempt to calculate the maximum capacity of a 40ft. street, we must only allow for two lines of traffic, and consider that half the street is occupied by this overtaking space.

A few words as to the passenger-carrying capacity of a street of this width will be of interest. If we assume that a motor omnibus, similar to those now running in Victoria Street, is 16ft. 6in. long, and that it could be driven at an average rate of 10 miles an hour, and that it is safe to allow the omnibuses in each line to be 100ft. apart, this would allow of nine omnibuses passing per minute, or 540 per hour, which gives a total carrying capacity of 14,080 passengers per hour in one direction. I am informed by gentlemen who are experienced in the management of tramways, that the maximum carrying capacity of an electric tramway is 3,000 per hour; and I am informed that that of a Suburban or Metropolitan Railway, crowded with trains to its full extent, does not exceed 10,000 per hour. This superior carrying capacity of the road, when traffic has to be carried at the moderate speed of ten miles an hour, is probably due to the overtaking space I have mentioned, and it is therefore of great importance that traffic should be conducted so that this overtaking space should not be wasted. Wherever a vehicle is drawn up at the kerb, the traffic following it is

diverted into the overtaking space; but in order to minimise the obstruction this line of traffic ought immediately to curve back close to the near kerb, and it is by enforcing this that we must look for improvement. Drivers of all classes of vehicles must not, after overtaking a vehicle, remain in the overtaking space in order to avoid the trouble of curving back to the near kerb. At present they are in the regular habit of doing this, as it is the shortest line for them to follow, in order to overtake the next vehicle in front of them, but the result is that if a still faster vehicle, such as an automobile or a cyclist, wishes to overtake them, he cannot do so without crossing to the wrong side of the road into the lines of the traffic coming in the opposite direction. It is probable that the traffic on a sixty feet road might be conducted in such a manner as to give two continuous lines each way and afford a third line for overtaking, and thus give double the capacity of a forty feet road; that is to say that on a sixty feet road 28,000 passengers could be carried per hour past any given point in one direction.

I believe that the enforcing of the existing regulations, so that the traffic is kept in line parallel to the kerb, might be carried out by constables experienced in traffic work, and of these there are many in the City and Metropolitan Police. These constables should be mounted on cycles or, better still, on patrolling motor cars. The expense of doing this would not be great, and the experiment would be well worth trying.

The somewhat astonishing figures that I have given you as to the carrying capacity of our roads have probably never yet been reached in practice. I believe that this is chiefly due to the extent to which our streets are blocked by cab ranks, by loitering vehicles and by stoppages of vehicles to take up and set down passengers, and to load and unload goods. Taking the last first, the loading and unloading of coals, beer, etc., is already the subject of a notice issued May 24th, 1897; it can be only carried on in certain streets within fixed hours, and the question of the extension of this regulation merits careful consideration. The space allowed for such loading and unloading ought to be minimised. The practice of allowing goods vans to be placed transversely to the line of traffic for loading and unloading ought to be stopped.

Another point on which improvement can be effected is, that wherever the streets admit of more than one line of vehicles proceeding in the same direction, some attempt should be made to sort the vehicles into the two lines according to their speeds—that is to say, the slow speed vehicles should be those nearest to the kerb, and those moving at the higher speed on the next line outside of it. This is already the case on London Bridge. Slow speed vehicles need overtake one another far less frequently than the fast traffic does, as they are all supposed to proceed at the walking pace of a horse, whereas the variety of speeds in the lighter vehicles is considerable, varying within limits of from 8 up to 12 miles an hour. For purposes of overtaking, a vehicle driven at an average speed of 8 miles an hour, must frequently overtake at the rate of 12 miles, and this point has been very little understood by those who fixed the limit of speed of automobiles.

This brings me to the second part of my subject, namely, speed regulation of motor vehicles and cycles. It will be seen from the above figures that the amount of traffic that can be carried on the road is almost proportional to the speed, that is to say, a traffic at an average rate of 10 miles an hour will transport double the number of passengers that could be transported at 5 miles an hour, but those who are so clamorous to reduce speeds do not apparently see that halving the speed means doubling the number of vehicles required to carry a given amount of traffic, and hence doubling the overcrowding and congestion of the streets. Speed, therefore, is desirable, not only as it saves time in the transport of passengers and goods, but in that it reduces the number of vehicles in the streets. The speed of foot passengers and horse-drawn vehicles has, in the past, been practically limited. A man can walk at 4 miles an hour, a horse from 4 to 5, and light vehicles can be drawn by a horse trotting at from 9 to 10. Hansom cabs and private carriages are frequently driven at 12 miles an hour. None of these rates are called furious driving, and rightly so, as traffic has been safely conducted at these rates for many years. The real measure of safety lies in the distance in which a driver can pull up in case of emergency, such as a person falling in the road, or of a child running suddenly in front of an advancing vehicle. In all cases, it will be seen that the real measure of the danger is not the speed at which the vehicle, whether horse-drawn or automobile, is drawn, but in the available controlling power.

I have been at considerable pains to notice the controlling power of a skilled hansom cab driver, and I find that about 30ft. is required in which to stop a hansom cab going at 12 miles an hour, a speed which is not considered furious driving by the police; that is to say if the road is in ordinary winter condition, either on macadam, wood, or asphalt. On a dry road in perfect condition it is probable that this distance might be reduced to 25 feet, but a properly braked automobile, driven at the same speed could be pulled up to a certainty within 15 feet, and a cycle fitted with modern brakes in 10 feet. It is therefore certain that future regulations, instead of restricting the speed, ought to prescribe the distance within which the vehicle can be pulled up in case of an emergency. It would follow on this that the police responsible for the regulation of the traffic could, if they considered that a driver is driving furiously, test it by signalling him to stop, and if he does not stop within the prescribed limit, breach of regulation could then be easily proved against the driver. In this way much of the hard swearing and ridiculous statements made by suburban and country police and others as to the speeds of automobiles and cyclists would be avoided, as the rate of speed would not be considered furious provided it was shown that the driver was capable of pulling up within ten feet in a

thoroughfare crowded with traffic, whereas in a country road where he has an unobstructed view, and where there is little or no traffic, the speed limit, if any, should be so that it should not cause a nuisance by noise, provided that in all cases his brake-power be sufficient to enable him to pull up within forty feet. The correct speed for automobilists and cyclists proceeding through traffic is a little higher than that of the traffic going the same way. All drivers and cyclists will agree with me that if their speed is less than that of the traffic, the risk of obstruction to traffic and of accidents is far greater than if he is overtaking it. Probably if experiments were made it would be found that a motor car can be driven with perfect safety, and with a minimum of obstruction to other traffic, somewhat in excess of 12 miles an hour. As I have shown, reduction of speed keeps the car a longer period in the public streets, logically it increases the obstruction caused by it, and of course the same holds good with cycles.

The ignorance of the public on speed questions is astonishing; few people seem to appreciate the difference between average and maximum speed. In traffic, in order to maintain an average speed of ten miles an hour, it is probably necessary, at times, to pass other vehicles at thirteen or fourteen, and on this point no one seems to be able to interpret the regulations. It appears to be probable that those responsible for the regulations, when they fixed the limit in London of twelve miles an hour, meant to allow automobiles to be driven at a speed slightly in excess of the ordinary horse-drawn light traffic, and if my interpretation of this is correct, the twelve miles an hour fixed is an average rate. It is a great pity that so much uncertainty exists on this point of the speed that is allowed. I think, on the whole, we may congratulate ourselves on the very reasonable view on this question taken by the Metropolitan Police. They appear to consider it their duty not to interfere with automobilists, so long as their cars are thoroughly under control, and are not driven to the danger of others, and this is the proper view to be taken of the situation. They appear to adopt the same attitude as regards cyclists, and it is a thousand pities that their view is not universally adopted by the police in all other towns and country districts.

When I talk of the controlling power that a driver has over his vehicle, I must not confine myself solely to his braking power, but I also refer to the readiness and promptitude with which he can change his direction and swing readily clear of any sudden obstacle. In a horse-drawn vehicle, as Mr. Montagu recently pointed out, there are two brain powers so to speak, that is to say, that in case of sudden necessity, either for stopping or to swerve, the impression has to reach the brain of the driver, and thence to be conducted by his hands to the brain of the horse, and again through the brain of the horse to his feet, which in turn govern the movement of the vehicle he is drawing. All this takes a considerable time. In the case of the cycle or motor vehicle the brain impression of the driver is acted upon almost instantaneously through his hands, and hence the vehicle is diverted or stopped. The shortness of a motor vehicle as compared with a horse-drawn vehicle permits of extremely rapid, and hence instantaneous, swerving to the right or to the left in order to avoid vehicles or foot passengers.

Up to this point I have attempted to show that if the existing Highways Act and Police Regulations are strictly enforced, considerable improvement in the traffic of our streets could be obtained. In order that this may be done, my suggestion is that a strong representation should be made to the Commissioner of Police, that he should instruct his constables to enforce his recent notices, by warning offenders and by summoning them if they disregard the warnings. If the hours between which the heavy traffic may be allowed to stop to take up and deliver goods were made the subject of a regulation, and if loiterers and road-wasters were summoned and fined, I feel sure that very considerable improvement would take place. No doubt the van drivers, waggoners, carters, covered delivery carts, and in some cases the omnibus drivers who have hitherto considered that they may drive their vehicles as they please, cut corners, and wander over the surface of the roads as they please, would at first resent this interference with the unrestrained license which they now have, and probably additional police would be required to make these drivers respect the law. It would also be necessary to secure convictions by keeping in the streets a number of police, either in uniform or plain clothes, who might be mounted on bicycles. One hundred of the constables who already do such good work at difficult crossings, would, if mounted on bicycles, soon effect an astonishing alteration in London, and would enable us, without spending any money or enlarging the streets, to pass over them, without blocks, a largely increased number of vehicles.

There are, however, other means by which our streets and highways may become more efficient means of conducting traffic, but in these cases further legislation will be necessary. The first of these is the stopping of omnibuses only at fixed points, as is so usual in continental cities. If the stopping-places were placed only a few hundred yards apart this stopping would be no inconvenience to passengers, and would be well worth a trial. It would certainly give the streets more carrying capacity, and would be less distressing to the horses.

Another point is the setting aside of a part of the road for bicycle traffic. This is a very difficult question. There is no doubt that cyclists, as a rule, always try to keep as closely to the kerb as possible; in fact, in both town and country the three feet space next to the kerb or to the footpath may be called the cyclists' track, but unfortunately this space is very frequently occupied by both heavy and light horse-drawn vehicles, drawn up for delivery of goods or setting down passengers, and in some cases the road authorities deposit on this space the mud scraped off the road, in order to save themselves the expense of sending round the carts immediately after the mud is scraped together. This practice

may easily be stopped. It is very hard on cyclists, and actually dangerous at night time.

As regards traffic on country roads. The law as regards riding or wheeling a cycle on the footpath ought to be amended. A cyclist should be allowed to wheel or even ride his machine on the footpath in cases where the road is impassable by neglect, under repair, or otherwise, in a condition which will damage his cycle, provided always that the cycle is led or ridden at a speed and in such a manner as not to cause danger or annoyance to foot passengers. There are many thousands of miles of footpaths in the country districts of England which are rarely used by foot passengers, whereas the total amount of damage, and hence the money wasted by cyclists who are compelled to risk great damage to their tyres, by wheeling or riding them over sharp road metal, is enormous. Road authorities ought to do something in return for the advantages that they obtain from so large a share of traffic now being carried on pneumatic or other form of tyres made of soft material, as their extended use has enabled a large quantity of traffic to be carried with little or no wear of the road surface. In return for this they ought to be empowered to make regulations which will prevent sharp objects, liable to puncture the tyres, remaining on the roads.

One frequent cause of accidents or puncture of tyres is found at places where the road has been broken up for pipe laying, draining, or similar work. After the trench has been filled in no attempt is made to replace the road metal and roll in the loose stones.

It may appear Utopian to suggest that it should be made an indictable offence to leave any material in a public highway which could puncture pneumatic tyres, but I think that the expense which would be put on to a road authority in keeping its surface clear would be amply compensated for by the great public convenience and the saving of damage, not only to motor-cars and cycles, but to the horses' feet. No one need leave broken glass, nails, thorns, or other puncturing material in a roadway unknowingly, and any such things that are really accidentally left there ought to be removed by the servants of the road authority within a reasonable time, and this can be easily done by a daily inspection of the road.

There are several other points connected with traffic to which I wish to call your attention, but my paper is already so long that I need only enumerate them in order that you may judge how easily improvements might be effected. First, as regards omnibus traffic. Omnibuses should not be allowed to swing right out at an angle to the road at the time they start. It is now a regular habit of the omnibus drivers to suddenly swing their horses across the road in order to pull out from the near kerb. This, of course, blocks the road for the time. At regular omnibus stopping-places, the blocks caused in this way are intensified by more than one omnibus doing it at the same time. The police should insist upon omnibuses starting one at a time. I have pointed out the great advantages of everyone keeping as close to the near side as possible. In overtaking from the near side, automobilists are now subject to considerable risk from the driver's whip of the overtaken vehicle. Drivers, especially those of covered vans, who cannot readily see what is overtaking them, have the habit of swinging their whips out to the off side to lash their horses. This practice, from which I, in common with most cyclists have suffered, ought to be absolutely forbidden. No one should be allowed to swing the lash of his whip to the off side of his vehicle.

I have shown how small is the carrying capacity of a tramway as compared with an undisturbed smooth surface roadway. I am strongly in agreement with Mr. Worby Beaumont on this point. Now that we can have good wood pavements, and that automobilism will soon become the rule instead of the exception, the tramway is an anachronism. The tramway is all very well for a new country where the roads are bad, but when a town like London has perfected roads, tramways should not be tolerated. I think all automobilists ought to combine to educate the public and the local authorities on this matter. The traffic can be carried better, safer, and cheaper by automobile vehicles on a smooth asphalt road than on a tramway, whether the latter be electrically driven or not. Again, there is a dangerous practice against which cyclists, owners of light horse-drawn vehicles, and all automobilists ought to protest, and that is the dangerous practice of watering the groove of the tramway in order to clean it and reduce the friction of the wheel flanges. The number of accidents that occur to cyclists, due to side-slip, at this part of the road is enormous, whereas the selfish advantages to the tramway company is comparatively trifling in extent.

#### THE DISCUSSION.

Mr. Roger Wallace, Q.C., opened the discussion. He thought Mr. Crompton had hit the nail on the head when he advocated the supersession of tramways by automobiles. Where they had level roads over which traffic could be carried without obstruction the tramway was a distinct disadvantage. Everyone would recognise the importance of the question and the admirable way in which Mr. Crompton had dealt with it. The question of speed required more attention than had been given to it by the road authorities. The only way to obviate the difficulties of congested traffic in our streets was to increase the speed. We wanted increased speed without danger, and that depended upon stopping within a given distance. The automobile was the only means of locomotion by which such a change could be effected.

He hoped Sir Edward Bradford and other authorities would see the paper that had just been read. Even underneath the street electric lighting companies were adding to the speed for the supply of electricity and a movement in that direction would have to be made by road authorities. He concluded by moving a vote of thanks to Mr. Crompton for his admirable paper.

Dr. Playfair seconded, and drew attention to the dangers of heavy vans in the streets during the busy hours of the day. Covered vans which did not allow the drivers to see what was going on on either side were also a danger.

Mr. Hawksley thought if they wanted to regulate the traffic the watering arrangements would have to be altered as well.

Mr. Herskine complained that the sides of the roads were often watered in the morning, thus forcing the traffic to the middle of the road. In wide roads traffic was consequently reduced to two lines.

Mr. Weaver (road surveyor for Kensington) said he was in charge of 86 miles of road, and the difficulty was to find a system to meet a number of requirements, some of which were antagonistic to the others. He then instanced some of the difficulties caused by weather changes, and went on to say that he used no less than three kinds of material for sanding the road. Instead of the sharp coarse grit previously used—which was good for horses but bad for pneumatic tires—he now used a finer sand. The best road to travel on was the road that was not watered at all, but shopkeepers complained if their goods became dusty. The leaving of slop at the side of the road was largely a question of £ s. d. His impression was that the remedy for the evils complained of was in the universal adoption of motor-cars. Then the best pavement would be asphalt, which should be generally adopted in that case in place of the patchwork condition of the roads as we saw them at the present time. Of course if the rate of speed could be doubled the carrying capacity of our roads would be doubled as well. From sanitary reasons as well, the disappearance of the horse from our streets was to be welcomed. The great hindrance to the traffic in London was the cheap omnibus, which he called the Monarch of the Highway. If a tramway company was to commence operations it had to make its own road, but we put down wood paving for the omnibus. He complained of the way in which ladies used these omnibuses and also obstructed the roadway in front of shops. As a remedy he suggested that omnibuses should be stopped at fixed points and ladies be restricted in their spending capacity.

Mr. J. J. Mann thought bicycles might be allowed on the footpath as in some places in France. He was afraid it would be very difficult for a motor-car to carry passengers at the rate of trailing cars. In Manchester lorries were not allowed in the principal streets after a certain hour. He suggested that the roads should be marked so that the traffic should proceed along well defined lines. One advantage would be in easy identification of persons who did not keep their proper place on the road.

Mr. Staplee Firth said Mr. Crompton had pointed out some very glaring evils. Automobilists were familiar with the way in which country traffic was often conducted. In a statute of William IV., to which reference had been made, were some very good provisions. If there was any heap of road scrapings or mud by the roadside, the surveyor was personally liable to a fine. Another clause was directed against the lighting of fires or firing of pistols within 50ft. of the highway. Another clause was against timber being laid or obstructions being placed on highway. If a man was in charge of horses drawing in tandem fashion a man must lead the leading horse unless they were connected up with reins. The same statute also laid down the rule of the road, and if the driver of a vehicle conducted his carriage in such a way as to hinder the free passage of any other he was liable. Offensive language was also provided against, and those who uttered it could be taken into custody and brought before two justices. Automobilists often suffered from such persons. They would now know what to do. In the country the great unpaid amateurs were not friendly in motor-car cases. He referred to the case at High Wycombe, where the police authorities had placed a log of timber across the highway, and said the chief constable should have been taken before two justices for such an act. Automobilism was

experiencing the same spirit that had to be encountered by Stephenson in the early days of the railroad. John Bull was prejudiced against the new industry, but when John Bull had ridden on a motor-car he generally became a convert. All must obey the law. There were a great many statutes for the regulation of the highways. Under the Act the speed of automobiles was not to exceed fourteen miles an hour, and the Local Government Board had limited it to twelve miles. They were often inclined to carp at the regulation, but he felt they ought to keep to it. The policeman's word was generally regarded as inviolable in a police court, and he generally based his action on the clause relating to driving to the common danger. If they could bring the road traffic into line with automobiles, and induce the police to direct their energies to enforcing existing regulations, much of the mischief would be obviated.

Mr. Shrapnell Smith said that in Liverpool a number of fixed stopping places had been adopted, and something could be done by the institution of lay-byes formed by underpinning the first floor, the cart thus going on to the property of the owner or the receiver of goods instead of blocking up the street. On the Liverpool line of docks an arrangement had been voluntarily made, so that the heavier traffic kept close to the kerb and the lighter traffic in the middle. There was a great difficulty in vehicles pulling out into the middle of the road. He suggested that the fixing of a mirror on the inside of the dashboard of cabs would enable the cabman to know what was on either hand. In Liverpool they had invited the officials of the Corporation to ride on the cars during the recent trials, and many were thus converted. He thoroughly endorsed the view that motor-cars should take the place of tramcars. Mr. Smith referred to the regulation that horses left at the roadside should have somebody in charge, and asked how often was that followed?

Mr. Edmonds, with regard to Newcastle and its tramways, said he was informed that it was a moot question whether they would not adopt a system of automobiles. An automobile service was already in operation, the fare being one penny a mile, and with a car carrying eight people £19 a week could be earned.

Mr. Calthorp thought it was largely a matter of education. A speed that was unsafe for one generation would be safe for another.

Mr. Crompton replied to the various points raised, and his reply brought the interesting proceedings to a close.

DR. E. E. LEHWESS, one of the directors of the Automobile Association (Limited), was summoned by the police at the West London Police Court last week for driving a motor-car on the 16th November last at an unreasonable speed in Ladbroke Grove Road. On behalf of the police, it was stated that the defendant drove at the rate of fifteen miles an hour, faster than twice that of the ordinary traffic. It was also stated that the defendant had been twice convicted of a similar offence. The defendant set up a defence that the car was incapable of going at the speed described by reason of the size of the gear. Mr. Lane, Q.C., came to a different conclusion, and fined the defendant £5., with 2s. costs.

THE Keating Wheel Co., of Middletown, Conn., has begun the manufacture of electrical automobiles, and for several weeks past has been running a vehicle for test purposes. The trial car is designed as a delivery wagon and to carry from half a ton to a ton. The Keating vehicle is of the double motor system, with a specially-constructed steel frame, so jointed that it allows the wheels to adjust themselves to all irregularities in the road. The wheels have wooden spokes with ball-bearing hubs of a new design. Tires are two and one-half inch, solid rubber. The battery can, it is claimed, be charged in fifty-five minutes for a run of forty-five miles. The motors are of two and one-half horse power each. One of the features claimed is the perfect control which the operator has over the machine. He sits on the left side of the carriage with the controller in his right hand and the steering handle in his left. By a forward pressure of the hand three changes of speed are obtained forward, and by pressing a button on the controller three changes of speed can be obtained in reversing.

## MOTOR-CARS ON THE CONTINENT.

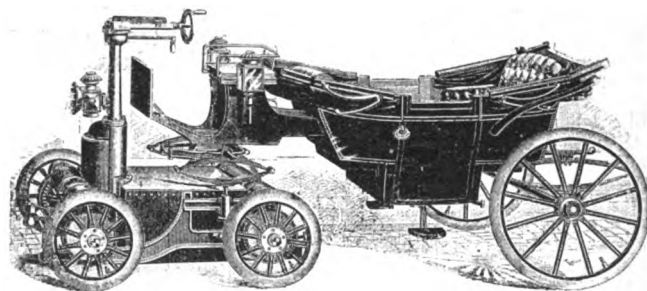
(From our Own Correspondent.)

### The President and Automobiles.

As is generally known, M. Loubet, the President of the Republic, declined to visit the automobile exhibition held during the spring of this year, but that his decision was prompted by no aversion to the motor-car or any desire to discourage the new industry is proved by the fact that recently he has been utilising an automobile at Rambouillet for the purpose of conveying his guests to and from his château and the railway station. Is this the beginning of the end, and may one expect to see at no far distant date the President issuing from the Elysée to make his official calls seated in a state automobile? And why not?

### The Latest French Novelty. The Heilmann Electrical Bogie Tractor.

THE Grand Duke Alexis and Prince Galitzin attracted some attention in riding in the Bois in Paris the other day in the novel motor-landau illustrated herewith. M. Heilmann, of Heilmann electrical locomotive fame, the inventor, said in the course of an interview:—"My bogie can be adapted to any kind of vehicle, and replaces horses altogether. Everyone does not desire to travel in an automobile at the rate of sixty



kilometres an hour, as in a racing machine. A speed of twenty to twenty-five kilometres an hour is quite sufficient for the ordinary public, and this is very much better than what could be attained with a horse. While, with a horse, one can travel, say, forty kilometres a day, with one of my bogie machines twice that distance can be covered. This bogie is intended for such practical uses as the drawing of cabs, landaus, victorias and delivery carts or wagons. In other words, it is meant to replace utility horses. Up to the present time, the electric bogie is only in use, but in a short time the same invention adapted to petroleum will be put on the market, because of the difficulty, at the present time, of recharging the electric machine. The electric bogie can cover a distance of sixty kilometres without recharging, and its maximum speed is twenty-five kilometres an hour. A ten horse-power electric bogie weighs 1,000 kilogrammes. The driver has complete control over the machine. His right hand is practically free, and is only required when changing the speed. His left hand guides the vehicle, and the foot controls the brake."

### An Electric Racing Car.

A WEEK ago Parisian automobile circles were stirred by the news that a certain well-known electrician had expressed his ability to build and drive an electric automobile capable of covering one hundred kilometres within the hour, and that one of his friends was prepared to wager £4,000 that the enterprise was successfully carried through. Automobilists in general received the news with scepticism, as there exists a world of difference between the best performance of the fastest electric car yet constructed and that which the future vehicle would be required to perform. "La Jamais Contente," which was illustrated in these columns last week, has actually travelled at an average speed of one hundred and six kilometres per hour, but this was maintained over a trial of two kilometres only,



and in no degree compares with the wagered performance. Accumulator troubles, tyre troubles, and all other manner of evils were discussed, and the general opinion was that it would be difficult to find any one sufficiently courageous to wager such a large sum that the attempt would be crowned with success. A day or two later the names of the interested parties were made known. Jenatzy, the owner of "La Jamais Contente," was, as was generally expected, the builder and driver, and his supporter was discovered to be Baron de Caters, the well-known Belgian automobilist. In the event of the bet being accepted the trial will take place on that remarkably level stretch of road from Evreux to Lisieux, which in the whole of its 70 kilomètres only rejoices in one hill, and that of no importance. I rather fear that nothing will come of this sporting offer, but should the trial come off may I be there to see it!

#### The Belgian Automobile and Cycle Exhibition.

THE date of the Belgian Automobile and Cycle Exhibition has now been definitely decided upon, and the show will be officially opened on March 31st and will close on April 8th. La Société Royale Union Véloce Club Bruxellois, which is promoting the exhibition, confidently anticipate that all the leading home and foreign automobile and cycle manufacturers will be represented. The industry in Belgium has of late made such progress that the products of the home constructors alone would form a thoroughly interesting collection, quite independent of foreign exhibits.

#### Parisian Motor Cyclists.

ONE day last week the good people who happened to be traversing the Rue de Rennes were startled by the sudden appearance from the Boulevard Saint-Germain of a motor cyclist riding at a furious speed and pursued by a wildly gesticulating crowd. The sight stirred the sporting instincts of one and all! Passers by, shopkeepers and their assistants, made common cause and joined in the chase, while cabbies whipped up their horses frantically in a vain endeavour to overtake the fugitive. But all to no purpose, for with a final triumphant "teuf-teuf," the motor carried its master into a labyrinth of side streets, where both were quickly lost to view. And then only did the more recently joined participants in the chase find time to ask what it was all about. They were told that the fugitive *chauffeur* had knocked down a lady, who was crossing the Boulevard Saint-Germain, and that to avoid the subsequent consequences he had promptly put on all speed ahead and, as above related, eventually made good his escape. It is this class of individual who does so much harm to automobilism, and who induces many people, who would otherwise be well disposed toward the new industry, to stigmatise every self-propelled vehicle as a nuisance and a danger to the public.

#### A New Automobile Club.

IN one continental town after another, automobile clubs spring into existence, and it will not be many years before every city of Europe will possess its society of *chauffeurs*. Baden is the latest addition to the rapidly-growing list, for the Sports Club, which has already done so much to promote the welfare of all branches of sport, has recently founded an automobile section, which bids fair to attain considerable proportions at no distant date. The members of this section are already talking about the inauguration of several automobile races for next spring, so evidently there is the intention to make the Baden Club well known in the world of motors.

#### Automobile Fetes at Pau.

THE success attained by the Béarnais Automobile Club in its promotion of the automobile race this spring from Pau to Bayonne and back has induced the club to bring forward a much more ambitious programme for next year. It is proposed to carry out these races and fêtes at the close of the Pau season,

and every endeavour will be made to render them successful. The general lines of the programme as at present arranged are as follows:—Thursday, February 22nd.—Automobile race for tourists from Pau to Peyrehorade and back. Friday, February 23rd.—Invitation of automobilists to fox hunt. At four o'clock on this day an attempt will be made to break the kilomètre road record for bicycles paced by automobiles. Saturday, February 24th.—Hill-climbing contest. Reception at Casino. Sunday, February 25th.—International automobile race. The course will probably be from Pau via Maubourguet, Aure, Saint Sever, Dax, Bayonne, to Pau. During the evening the prizes will be distributed to the successful drivers in the Winter Palace. Monday, February 26th.—Automobile gymkhana on the Boulevard des Pyrénées and the Public Gardens. Entertainment of automobilists at theatre. Tuesday, February 27th.—Battle of flowers and procession of decorated automobiles on the Boulevard des Pyrénées. Masked ball at the Winter Palace.

#### The Delahaye Car.

I HAD recently an opportunity of testing the hill-climbing powers of one of the larger types of cars manufactured by Delahaye, and I have no hesitation in saying that nothing but a hill possessing an altogether extraordinary combination of gradient and bad road surface would bring the vehicle to a standstill. The car, which I mounted in company with a friend, was of the *dos-a-dos* dog-cart type fitted with a 9-h.p. engine. We at once made tracks for Suresnes, where there is a short stretch of side road, the grade of which I fancy must be a genuine 1 in 6. In spite of the somewhat heavy road surface after much rain, the vehicle started and ran up quite easily on the special hill-climbing gear, after which operation our *chauffeur* drove us down on the same gear, without employing any brakes whatever and at a speed very little, if any, faster than that at which we had mounted.

#### The Sportive Commission of the French Automobile Club.

ON the occasion of the Sportive Commission's meeting on the 6th instant various applications for the club's authorisation to hold automobile competitions and races were under consideration, and the following events were duly sanctioned:—(1) January 14th, race for the parcel post automobiles, promoted by *La France Automobile*; (2) February 18th, race promoted by *La France Automobile*; (3) March, race promoted by the Automobile Club of Nice; (4) April 15th, motor cycle race, Paris-Roubaix, promoted by *Le Vélo*; (5) April 26th, competition for electric automobiles, promoted by *Le Vélo*; (6) May 3rd, competition for motor cycles, promoted by *Le Vélo*; (7) May 10th, competition for voitures, promoted by *Le Vélo*; (8) May 17th, competition for motor-bicycles, promoted by *Le Vélo*; (9) May 23rd, Paris-Bordeaux race, promoted by *Le Vélo*; (10) September 1st and 2nd, Paris-Ostend race, promoted by *Le Vélo*. At the same meeting the motor-tricycle and motor-bicycle records, established respectively by Béconnais and Fossier at the Parc des Princes track last week, were accepted and confirmed. In these rides Béconnais covered a distance of 100 kilomètres in 1h. 34m. 26sec., while Fossier's time for 20 kilomètres was 19m. 34½sec.

#### Electric Hose Cart in the Paris Fire Brigade.

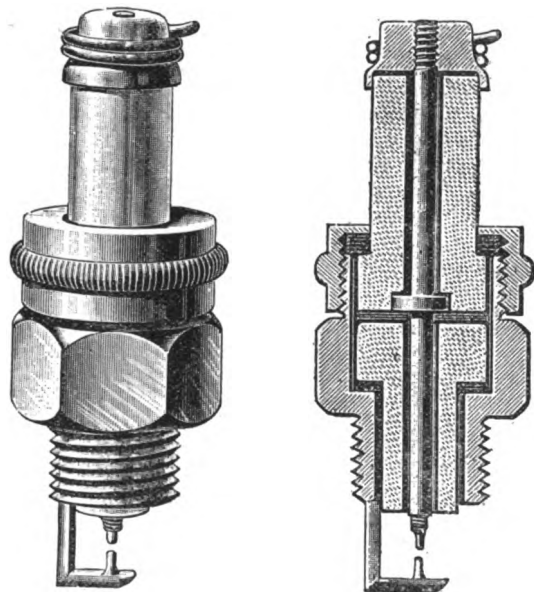
THE electric hose-cart, designed and constructed by the technical section of the Paris Fire Brigade under the direction of Capitaine-Ingenieur Cordier, has stood the test of practical experience, and is now working satisfactorily. In May the hose-cart took part in the service in a fire in the Rue du Pressoir. Again, in October, in the Rue Folie-Méricourt, and again on November 15th in the Rue Saint-Dominique fire. In all of these cases the electric hose-cart arrived before the engines and hose-carts drawn by horses. Not only is the present electric cart a



success, but the Paris Fire Department has ordered six other electric fire extinguishing machines of different models, including hook and ladder carts and fire engines. These will be used, should occasion require, in connection with the Exposition of 1900. The motor is of the T3 type, of four kilowatts capacity, and the battery is composed of forty-four B.G.S. cells of the V19 type. These cells are placed in a metallic box suspended from the underframe by spiral springs. The first trials carried out by the Sapeurs Pompiers with these accumulators resulted in a speed of twenty kilometres an hour on good level roads, with a discharge of 48 to 50 ampères, and a speed of sixteen kilometres with a discharge of 35 to 40 ampères. The total weight of the battery is 1,144lbs. The hose-cart weighs 1 ton 1,588lbs., and the total weight, including the men, hose, ladders, etc., is 2 tons 800lbs.

### THE "HELICAL" SPARKING PLUG.

THE "Helical" is the name of a new sparking plug which has lately been introduced in France by Messrs. Bisson, Berges and Co., Paris. It is called the Helical Ignition Plug, because the secondary wire is not attached to it by a screw, as is usual, but is wound around a helix which surmounts the plug, thus preventing the breaking of the porcelain by too sudden adjustment of the wire. In the ordinary plug the rod in the centre heats, expands and breaks the porcelain to which it is



rigidly attached, and this liability to breakage is increased because one end of the porcelain is exposed to a high temperature while the other is subjected to cold air or rain.

Breakage in the new plug is obviated by the mode of fastening the induction wire, by fastening the rod to the porcelain at a single point, and by making the porcelain in two pieces separated by a washer that is heat proof.

MESSRS. H. A. CLARKE AND CO., of Rutland-street, Leicester, are now the sole agents in Leicester and district for the Daimler cars and the Humber, Eadie, and Beeston motor-cycles. They keep a supply of motor-car spirit, and hold a stock of nuts and spare parts for the above motors.

FROM Messrs. Allard and Co. Earlsdon, Coventry, we have received a copy of their 1900 catalogue, which in addition to cycles includes an excellent illustration, with particulars, of the "Allard" motor-tricycle.

AT a meeting of the Liverpool Engineering Society at the Royal Institution, Liverpool, on Wednesday evening, a paper was read by Mr. Arthur Musker, on "Heavy Motor Lorries for Liverpool Traffic."

### MR. H. J. LAWSON ON THE AUTOMOBILE INDUSTRY IN AMERICA.



BEFORE opening the proceedings in connection with the formation of the Motor Trades Association at the Holborn Viaduct Hotel, E.C., on Wednesday, Mr. H. J. Lawson made some interesting observations on the motor-car industry, quite independently, as he explained, of the association. His recent visit to America had, he said, shown him that America was going in very strongly for motor companies, and everyone seemed fully determined to annex the motor industry of the world. He hoped this manufacturers' association would help them to keep a very fair slice of it in this country. America was the land of invention, and Americans worshipped the brainy man and honoured him as we should a prince. If any man would come along and tell the association some improved method in connection with motoring they would help him. The man who ran down patents was doing a real material injury to the industry. They would remember how a determined effort was made to buy up patents and start companies to work them. They knew how far it had been successful. Without being egotistical he could say the leading companies were running under some kind of licence for that effort. The business would owe much to inventions and to patents, for it was not sufficiently perfect at present. There was room for more inventions in the motor-car trade than in any other industry now going. At the last meeting thirty manufacturers of motors or parts were present, and they had had intimations from sixty-one different British manufacturers announcing their intention to join. Not one had refused to help. When in America he had gone to Washington and investigated the different patents in the industry. In England there were more than three times as many patents as in America, but as far as companies went—and he was not doing this with a view to company promotion, but to strengthen existing companies—they were ahead, for 108 motor companies registered in twelve months had a capital of 681,945,000 dols., or nearly 130 million pounds sterling—against our two or three million capital. Every one of these American companies meant that some engineer was hard at work trying to make a motor-car. The association that was about to be proposed would be able to meet together and discuss the advantages and disadvantages of the various inventions brought before it. He never advised anyone to make copies of French cars, for different objections were being steadily overcome. In America he saw automatic ignition. There, too, were automatic starters. Motor-cars were worked by petrol, and could be absolutely pulled up and the engine stopped, so that the engine was not jumping and jarring when standing still. In America they were selling petrol that had no smell. In conclusion he referred to the offer of prizes to inventors by the Motor-Car Club, and said if that was not doing good he did not know what could be done.

THE dissolution is announced of the Société des Moteurs "Le Sphinx," 10, Boulevard Barbes, Levallois-Perret, France.

THE annual meeting of the Automobil Club de Belgique is to be held in Brussels on the 23rd inst.

THE dissolution is announced of the firm of Messrs. Faugère, Ochin and Dangleterre, automobile builders, of Essonnes (Corbeil), France.

THE Howard Automobile Company has been formed at Trenton, N.J., U.S.A., to manufacture automobiles on patents secured by William L. Howard of that city. The capital is £40,000.

THE Munson Co., of La Porte, Ind., U.S.A., have sent us a copy of their catalogue of motor-vehicles. Particulars have already been given in these pages of the Munson combined electrical petroleum-spirit automobiles. The catalogue gives particulars of a motor-delivery van, of a four-seated phaeton, and of a two-seated buggy with hood.

## THE MOTOR TRADES ASSOCIATION.

ON Wednesday afternoon a meeting of manufacturers and others engaged in the automobile industry was held at the Holborn Viaduct Hotel, E.C., to discuss the formation of the proposed Motor Trades Association, the objects of which were set forth in these columns last week.

On the proposition of Mr. Seyd, seconded by Mr. Phillips, Mr. Harry J. Lawson was voted to the chair.

The Chairman having introduced the first business of the meeting, viz., the name of the association,

Mr. J. J. Mann (Marshall and Co.) asked for a statement of the aims of the association. Was it to benefit the manufacturers generally, or certain special manufacturers in the trade?

In reply the chairman read the circular convening the meeting.

Mr. Mann urged that the manufacturers interested in a certain group of patents, and those who were not, should be on the same basis in the association.

The Chairman: Certainly.

Mr. S. F. Edge proposed that the name of the Federation be the Motor Trades Association. They wanted to have everybody in membership. There were a large number of people selling cars, and they should be concerned in the government of the association. Mr. Lawson had stepped into the breach and convened a meeting when it was decided to form an association. He suggested that in connection with every important movement a general meeting should be called, and that a sub-committee be appointed to carry out the wishes of the general meeting. Everything would be carried by vote, and the majority would govern.

Mr. Mann pointed out that of the thirteen names of those on the provisional committee, nine were of men heavily interested in cycle manufacturing or in a group. The association should be above suspicion, and a motor-car association should not be governed by the cycle industry.

The Chairman stated that all those on the committee were engaged in making motors.

Mr. McLachlan seconded the proposition of Mr. Edge.

Mr. H. Griffin said the meeting reminded him of one held on December 10th, 1895—the very first held in connection with the advancing industry. Then there was not a single firm in England taking an interest in motor-car manufacture. Now, however, millions sterling were invested in the industry, and he regarded the present as an historic occasion.

Mr. Mann was very strongly in favour of the idea that an association should be formed, and that no one should hold an executive position unless he was an actual manufacturer of self-propelled vehicles, and more largely interested in that trade than in any other. He was prepared to move a motion to that effect, and also that any member of the executive favouring any so called monopoly to the detriment of any other manufacturer should be disqualified.

There was no seconder of the resolution.

The chairman was not in favour of any exclusion of the cycle trade. In fact, the motor-car industry would prove the salvation of the cycle trade if manufacturers would take it up.

Mr. Mavor, as an inventor, wanted a definite statement as to the encouragement of invention. What practical means was it intended to take? The Institution of Civil Engineers and similar bodies were formed to encourage invention, and he would like to know if the proposed Association was to work on similar lines.

Mr. J. H. Gretton said the question of an Association arose when the matter of the exhibition was on the *tapis*. There had been two exhibitions this year, and it was felt to be very onerous on the trade. The idea of a union had been mentioned at two meetings of the Automobile Club. Everybody seemed to agree, and all that was wanted was that it should be put into a concrete form. Mr. Lawson called a meeting for the purpose of putting this in movement, and so they got to the formation of a committee of a provisional character. The interests he represented would not go into an association that had any particular axe to grind. It was, perhaps, unfortunate that the word invention had been introduced, and if inventions were dealt with it would

be only in a superficial manner. The advantage of such an association would be largely in bringing the members together to talk over matters of mutual interest. Such bodies existed in most trades. Whilst the definition of the objects was not a matter of immediate interest, the formation of the council was very important. Only those who were at the present moment manufacturing cars or motors should be on the executive. Cycle manufacturers who were not making motor-cars should not be admitted to the administration. It had been reported that the association had as an object the raising of prices against the public. That was entirely wrong. One of the bases of the association was to provide the public with good, serviceable vehicles at the best possible price—allowing, of course, a fair profit to the manufacturer. No manufacturer wanted to take advantage of the public, for sooner or later it would tell against his own interest.

Mr. Shippey thought that the oil, electricity, and steam sections of the trade should all be considered in the proposed organisation.

The chairman agreed that all sections should be represented, and ultimately a committee was elected consisting of the following gentlemen:—Messrs. Bailey, Seyd, Jarrot, Napier, Shippey, Gretton, Begbie, Edge, Eadie, Lawson, Mulliner, Hodges, Phillips, Sangster, Crowden, Rush, Friswell, Gorton, and Griffin. Messrs. Mann and Buckea were also nominated, but withdrew their names.

Mr. S. F. Edge proposed the election of Mr. Harry J. Lawson for the presidency, and this, having been seconded, was agreed to.

Mr. Mann pointed out that sixteen gentlemen on the committee represented the two groups of which he had previously spoken. He had been present at two meetings at which manufacturers favoured a resolution to hold only one exhibition, under the auspices of the Automobile Club, and in the cycle papers he had seen there was a movement against the holding of motor-car exhibitions as distinct from the cycle shows. He believed the motor-car trade was big enough to stand alone, and ought not to be a pimple on the back of the cycle trade. At the recent shows the presence of a few motor-cars had made a ridiculous comparison.

Mr. J. H. Gretton thought the objects should be decided later. He felt Mr. Mann took a very sensible attitude. It was an open expression of a silent attitude among many present who were not in any doubt as to Mr. Lawson's capabilities to preside over the association, but who recognised that Mr. Lawson was associated with a large group, and who thought there was some object in view. The motor trades association must be a general one, and would not be representative if any stood outside. Therefore he appealed to the chairman to leave the question of presidency to a future meeting, or a meeting of the council, so that nobody should be able to feel that there was a preponderating influence. There were probably some in that room who held their tongues in their cheeks, but who, when they left, would adopt a different attitude. If the affair was to be carried out they had better proceed on cautious lines. Mr. Gretton proceeded to explain how the subject arose. The difficulty in connection with the formation was to get somebody to take the initiative. Some were under the impression that at the meeting of the Automobile Club, Mr. Roger Wallace said if the manufacturers wished the club would take the initiative in bringing this into form. Mr. Wallace rather said it was not an affair of the club, but the club would use its best offices in assisting the formation. Therefore, when Mr. Lawson took the initiative he did not see anything different between the two things. As those who were connected with clubs knew, one of the principal rules was that the club should not be used for business purposes. Therefore, the Automobile Club would be going out of its sphere of action in acting as a trade organisation. Consequently, the latter would have to be apart from the club. They felt under an obligation to the Automobile Club, whose efforts on behalf of automobilism were appreciated. At the same time, the committee of the Automobile Club would see that it would not be within their compass to deal with a trade organisation.

Mr. Mann said it was resolved by the manufacturers that

the Automobile Club should federate the manufacturers only as concerned exhibitions, so as to avoid the useless waste of manufacturers' money. Looking at the aspect of affairs as now presented, with the cycle trade and one section of the motor trade in the majority, he thought it was a case of "the spider and the fly."

Mr. Edge denied that the committee was mainly representative of any one interest, and pointed out that at least twelve of the names submitted were under no obligations to any group.

In the course of the conversation that followed it was asserted that on the committee were most of the pioneers of the trade, and without them it could in no way be described as representative.

Mr. Sangster approved of the idea of the organisation, which, however, he did not think would do anything with regard to the regulation of prices.

Mr. Gretton asked for an assurance from the chairman that the resolution appointing him to the chairmanship would be withdrawn. This, however, was not given, but the chairman intimated he would leave the matter with the committee.

It was then agreed that the subscription should be £1 1s. a year.

Mr. Gretton intimated that the interests he represented would adhere to the arrangement they had made with regard to the Automobile Club's exhibition next year.

With a vote of thanks to Mr. H. J. Lawson for presiding the proceedings terminated.

WE hear that Mr. Preston Davies, of Southfields, S.W., is engaged on the construction of a new steam car.

THE *Madras Standard* considers that it is time that the motor-car made its appearance in the principal cities of India.

THE United States Automotor Company has been incorporated at Trenton, N.J., U.S.A., to manufacture and operate all kinds of automobiles. The capital is £200,000.

ACCORDING to an American consular report, Java is a very fine country for automobiles, as the roads are good. At present there are only two motor-vehicles in the island.

THE Leicester Motor-Car Co. Ltd., are now successfully running a service of motor-cars in opposition to the trams and buses to Aylestone; other routes will be covered shortly.

THE plant, stock, etc., of the McGregor Cycle and Engineering Co., Nottingham, was put up for sale by auction last week. It is reported that the factory has been taken by a Yorkshire firm of engineers, who intend to manufacture motor-cars as well as cycles.

BRITISH automobilists who may desire to compete in 1900 for the Gordon Bennett International Cup, are reminded that they should at once notify the Secretary of the Automobile Club of Great Britain, as the challenge has to be sent before January 1.

MESSRS. PALMER, BROS., of Mianus, Conn., U.S., manufacturers of marine petroleum-spirit motors, are placing on the market a twin cylinder vertical motor on the same principle—i.e., the two-cycle, giving an impulse every revolution—for automobiles. This new motor gives 3 b.h.p., weighs 260lbs, has cylinders 3½in. in diameter and a stroke also of 3½in. Water is used to cool the cylinders. For the purpose of testing these motors and for their own pleasure, they have constructed a carriage and placed one of the motors in it. This carriage weighs about 900lbs. and carries two or four persons, as desired. The frame is of angle steel, and the tangent wire wheels are 28 and 30in. in diameter respectively. The motor, located just behind the centre, transmits its power by fibre gears and chains, giving two speeds, the intermediate speeds being obtained by the control of the engine. Pivoted hub steering is employed, and there are two brakes, one on the tires, the other on the differential. Messrs. Palmer will not manufacture carriages, but will make a speciality of supplying motors and parts of the same; also steering axles, differentials and other motor carriage parts.

## CORRESPONDENCE.

### A QUESTION OF NOMENCLATURE.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—We are rapidly getting into a parlous state as regards the naming of the vehicles run on roads by mechanical power. It is becoming quite common to use the word "motor" by itself to describe what is truly a motor-car or other vehicle. This is very unsatisfactory, as unsatisfactory as it would be to describe a steamship as a "screw" or a gun-boat as a "gun."

It will lead also to much real evil, for the motor inventor is still with us, and there will necessarily be many an unsuccessful motor brought out and made the excuse for floating a company, only to sink after a short struggle for success. Thus motor vehicles become discredited by the public being led to identify the "motor" with the vehicle, and so to attribute the failure of a particular motor company to the want of success of the mechanical road vehicle in attracting public favour.

If the evil is to be cured it can only be by those who have a real interest in the success of mechanical traction on roads adopting a sound nomenclature, which shall not be misleading and be such as may be found really suitable, and thus become popular.

I would suggest that the word "power" should be used adjectively to designate the new class of vehicle. It is a word which distinguishes the new mode of locomotion from animal draught, just as in manufacture power-loom distinguishes one kind of manufacturing machine from another, viz., the hand-loom. By using this word, the risk of part of a name being used "for short" would be got rid of. While "motor" is being freely used in the sense of motor-vehicle, "power" could not be used as a contraction, as used alone it would mean nothing and describe nothing indicating locomotion. Thus the generic word "power" would be prefixed first to classes: power-carriage, power-waggon, power-cart, etc., and in the particular the names would be power-landau, power-Victoria, power-wagonette, power-char-à-banc, power-dog-cart, power-van, power-lorry, power-omnibus, etc.

If anyone can suggest a better generic expression I should welcome it and withdraw mine. But I would strongly urge that those interested should take up this question, with a determination to effect a regulation of motor-vehicle nomenclature, so as not to mislead the public, which, until it is first attracted to motoring, is indifferent what the power is—whether steam, oil, or electricity, but may be deterred from taking any real interest if the use of misleading words tends to bring the new power vehicles into discredit.

Yours, etc.

J. H. A. MACDONALD.

15, Abercromby Place, Edinburgh,  
December 12th, 1899.

### EDUCATING THE HORSES.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I notice in last week's issue of *The Motor-Car Journal* that you speak of the police trying to get their horses used to the motor-car. I, too, have had a similar experience. The patrols' horses in this district are the worst ones to manage that I have met anywhere on my journey, so I called at the station and offered to break them in to the motor-car if they liked to send them to my place, or to do the same for anyone else who complained about motor vehicles frightening their horses. Previous to that they (the patrols) used to look very black when passing, but now they have a smile for me. I think it would be better if local motor-drivers were to pass the time of day with the police.

Albany Nurseries,  
Enfield Highway,  
December 11th, 1899.

Yours truly,  
H. SEAL.

### ENGINEERING AND MOTOR-CARS.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR,—I am glad to notice from your issue of the 1st inst. that *Engineering* is taking a more broad-minded view of the

motor-car movement than its contemporary *Engineer*. There is one statement, however, in your quotation of *Engineering's* remark, viz.: "To the hundreds of people who cannot afford a horse and its keep, the car affords a substitute for pleasure or for business, while for continuous work the horse is not in it," which is open to question. Notwithstanding the many advantages of motor-cars, I do not think that even the most ardent supporter and advocate would recommend them "to the hundreds of people who cannot afford a horse and its keep."

Yours, etc.,

Bristol, December 11th, 1899.

SUBSTITUTE.

### THE STANLEY STEAM CARRIAGE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—There is a slight error in the description of this carriage in your last issue, inasmuch as the engine is described as being non-reversing, while the drawing shows it to be fitted with link motion. Of course the drawing is right, as it was only the earlier cars which were fitted as described.

From what I saw I should say the carriage was far too light in every part to be much use in this country; while the entire absence of any guarding appliances, either for the driver or motion work would both render it uncomfortable in wet in the one case, and much shorten the life of the driving gear generally in the other.

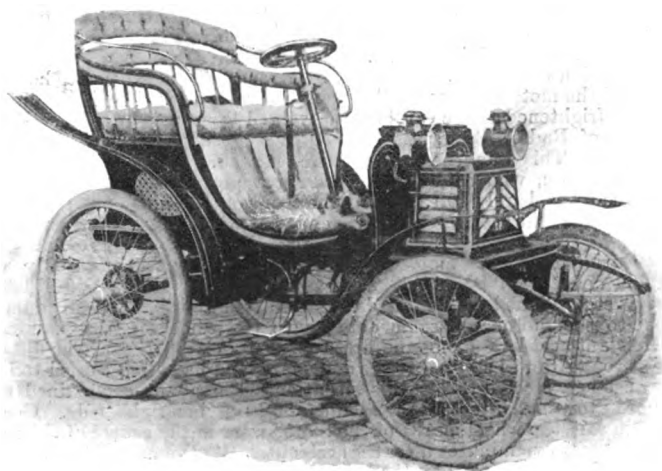
Yours, etc.,

Ross, Galway, December 12th.

C. P. DAWSON.

### THE PIEPER MOTOR-VOITURETTE.

WE are now able to give an illustration of the neat type of two-seated motor-voiturette shown by Les Etablissements Pieper, of Liège, Belgium, at the recent Stanley Cycle Show. The motor—a single-cylinder vertical one of 3 h.p.—is located in a bonnet at the front of the car. It is fitted with a water jacket to the cylinder for cooling purposes and electrical ignition. Two speeds are provided, the power being transmitted by a single belt working on fast and loose pulleys on a



countershaft at the rear. The pulleys are of equal diameter, the variation in speed being obtained by different-sized spur wheels connected with the pulleys, which mesh with corresponding spur wheels on the rear axle. The motor is carried on a movable socket regulated by means of a screw, any slack arising in the belt being taken up in this way. The road wheels of the cycle type, with pneumatic tires. Two brakes, worked by pedals, are provided. The first acts on the differential shaft; the second, on the hubs of the wheels. The car can, it is claimed, attain a speed of about twenty miles per hour and can climb grades of 10 per cent. The weight of the little car is given as 450 lbs. or just over 4 cwt.

### SCOTTISH NOTES.

—8—

#### Incompetent Drivers of Horses.

I WITNESSED a most extraordinary incident the other day, and what was really an object-lesson in the grave risk run by owners of horses allowing their animals to be driven by utterly incompetent hands. I was in a motor-wagonette, which was being driven at a moderate rate along a fairly quiet road on the outskirts of a town not far from Glasgow, when we espied in front a huge baker's van, drawn by a big powerful horse. To use an Irishism, the man in charge of this spirited-looking beast was a small boy of perhaps fourteen years. Immediately the animal caught sight of us it began to dance, and the valiant Jehu tugged for all he was worth at the reins. Anticipating trouble and in response to a signal from the boy we immediately pulled up. This bright youth, who evidently feared a spill, slid down with marvellous dexterity from his high perch on the box seat to the ground, and then—of all things—proceeded to firmly tie the reins round a telegraph pole at the roadside! After retiring to what he considered a safe distance from the horse—which still jumped about in an absolutely idiotic and senseless manner, as some equines will do, for the motor was perfectly still—the inventor of this brilliant idea for horse restraint signed to us to proceed. We moved forward slowly, and with as little noise as possible, and managed to escape being run into by the frightened animal, which was jumping about on the road and backing on to the pavement in a most dangerous fashion. Just as we got safely past we heard a tremendous clatter of hoofs on the granolithic pavement, and on turning round at a further crash saw the horse lying full length on the pavement struggling and kicking violently. To our amazement the boy cried out, "It was not your fault," and told us to get away, and this we did, as the very presence of the motor seemed to strike mortal terror to the heart of that horse. Returning the same road later, we met the valiant driver, who shouted to us to proceed at a slow rate when we got near a certain quarter, as the horse was up at the veterinary surgeon's there being *repaired*, and might take a second fright if it caught sight of us. We have been expecting every day to hear more about this, but up to the present have not done so. Of course, no blame could be attached to us, but it is no unusual thing for *chauffeurs* to get "hauled up" in cases of this kind. The obvious moral of this, however, is that owners of unmanageable horses, or those people who entrust powerful and spirited animals, which want careful handling, to youngsters, as in this case, incur a very grave responsibility. The horse itself, in this instance, appeared to be the only thing damaged, but one does not require to possess a very vivid imagination to guess what might have happened; and had the expected taken place, and publicity been thrown on the incident, the motor-car and nothing but the motor-car would have incurred the blame for the whole occurrence.

#### The Scottish Automobile Club.

THE first meeting of the Provisional Committee of the Scottish Automobile Club, the successful formation of which I reported last week, has been held in the Royal Hotel, Edinburgh. The meeting was of a preliminary character, and there was a fair attendance of the gentlemen who had been invited to act. The first business, of course, that calls for the committee's attention is the selection and appointment of suitable officers; and from the quality of the meeting on the 1st inst., it should not be difficult to obtain gentlemen of influence and enthusiasm in Edinburgh to fill the more important posts. The rules will no doubt follow on the lines of the parent club, and with a good working committee there is little doubt the Scottish Automobile Club will soon acquire a place among the best Scotch clubs.

"BROWN HEATHER."



## THE CRÉANCHE ELECTRICAL VOITURETTE.

**A** FRENCH concern, the Société des Voitures Créanche (Ch. Bruel & Co.), 7, Rue Brunel, Paris, is making a light two seated voiturette in which the motive power is electricity and of which a general view is given in Fig. 1. The electric-motor *M* (Fig. 2) is of the B.G.S. type, and of 4 h.p.; it is suspended from the frame and is geared direct to the intermediary differential shaft *R*, from which the power is transmitted to the rear wheels by the usual set of sprocket wheels and driving chains. The electrical energy is provided by a battery of forty-four B.G.S. cells *A* arranged in two groups, one, consisting of three boxes, being located in front and one of four boxes at the rear.

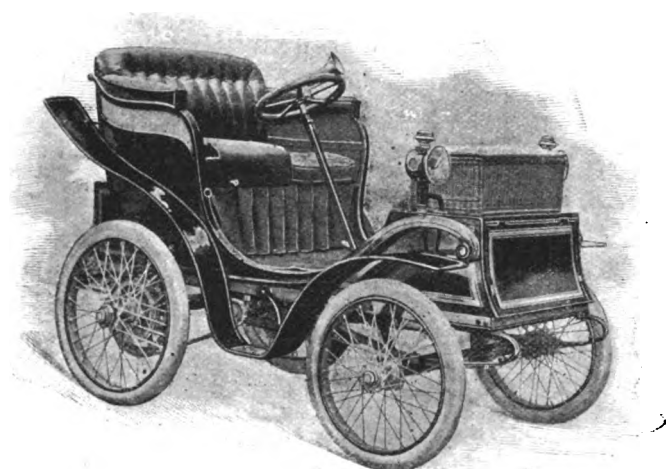


FIG. 1.—GENERAL VIEW OF CRÉANCHE ELECTRICAL CAR.

The boxes are arranged to slide in grooves formed in the bottom of the receptacles, so that they may be readily drawn out for inspection purposes; the cells are, however, arranged to be charged *in situ*. At a fifteen-ampère discharge rate, the capacity of the battery is, according to the makers, sufficient for a run of 3 h. 55 m., the average consumption of current being given as 10 amperes at 90 volts. The controller switch is manoeuvred by means of a small hand wheel *C* at the side of the driver; it is arranged to give a variety of forward speeds, two backward motions, and an electrical brake. The average speed ranges from 20 to 25 kilo-

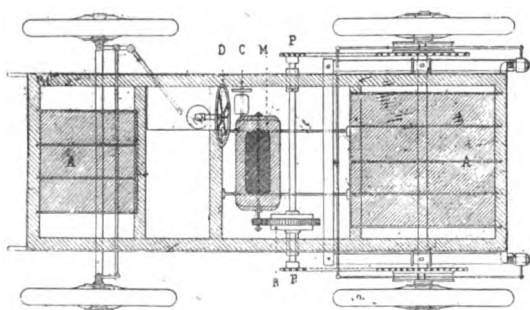


FIG. 2.—PLAN OF CRÉANCHE ELECTRICAL CAR.

mètres per hour. The frame of the car, which is built up of steel and wood, is rectangular in shape and is suspended on the axles by plate springs. The wheels are of the cycle type, 25½ in. in diameter at the front and 29½ in. at the rear; they are fitted with pneumatic tires, while the steering is controlled by a sloping hand wheel *D*. Ample brake power is available, for in addition to the electrical brakes above referred to cord brakes acting on drums on the hubs of the rear wheels are provided. One of the Créanche vehicles took part in the recent Criterium des

Electriques competition, the car being driven by M. Créanche, the manager of the company. Its weight complete was given as 670 kilogrammes, or a little over 13 cwt., while in the trials a distance of 86 kilomètres was run on one charge of the batteries. The car is about 6½ ft. long, while the width between the wheels is 3 ft. 7 in. Messrs. P. Souvestre and Co., Ltd., of Liverpool, are introducing the vehicle into this country.

### A MOTOR-CAR OBSTRUCTION.

AT Wellingborough Police Court last week, Mr. Herbert P. Sanderson, Kingston, was summoned for obstructing the public street by leaving a motor-car without anyone in charge, at Wellingborough on November 23. Inspector Brown said that he saw a motor-car standing near to James's corner unattended. After inquiries they found the defendant having supper at the Clarence. There was a crowd of 200 people round the car, and it was unattended for a quarter of an hour. Defendant said that the crank became hot, and he was obliged to stop for it to cool. He asked if he could put it in the hotel yard, and was told they would take it in if he was staying all night. He endeavoured to put it up somewhere, but could not, and so he left it at the top of the Market Hill. He then went to get refreshment, as he had not had any since morning, and when he came back he found a crowd of about 200 people round the car, and they fairly pestered him, making it difficult for him to get away. He had no idea he was breaking the law. Fined 10s. and costs.

### COLLISION WITH A MOTOR-CAR.

AT the Warwick County Court last week Mr. Charles T. Crowden, of the Motor Car Works, Chapel Street, Leamington, sued Mr. James Mason, butcher, of Brook Street, Leamington, for £4 7s. 6d. for damages sustained through the defendant negligently driving a horse and cart at Radford Hill, on October 5th, and causing a collision with plaintiff's motor-car. Defendant disputed liability, denying negligence, and made a counter-claim for £6 11s. 6d. for damages sustained in the collision, which he attributed to plaintiff's negligence. Mr. Maddocks (Coventry) appeared for the plaintiff, and Mr. C. Humphries defended. — James Alford, of 47, Rushmore Street, Leamington, said he was in the employ of Mr. Crowden, and on the 5th October was testing a motor-car. He was travelling in the direction of Leamington from Southam, and was going at a speed of about seven miles an hour when he met the defendant. When he reached Hortin's cottage defendant's horse suddenly swerved and backed right into the car. Witness had no warning to stop the car, and the horse did not appear to stop until the car got close to it. Witness stopped the car in about 5 or 7 yards. Mr. Mason described the car as a nuisance, and said such things ought to be burnt. Defendant's axle seemed to be bent. The car was considerably damaged. Damage was done to the splash-boards, two brackets were broken, and two spokes were broken. John Lewis, in the employ of Mr. Crowden, said he was with Alford on the 5th October. They were 2ft. from the gutter when the collision took place. Before Mr. Mason left he took his horse in front of the motor to give it a lesson and thrashed it. The horse did not appear frightened at the car, but was walked by it once or twice. George Hortin, of Radford Semele, whose cottage stands on the hill, also gave evidence. This was the case for the plaintiff. Mr. Humphries called James Mason, who said he was driving a gig and six-year-old horse. The road was barely 19ft. wide at the scene of the collision. The motor came round the corner sharply, and he only saw it when about 6 or 7 yards distant. The horse did not swerve, and was not frightened at motor-cars. The car went by rapidly and caught defendant's wheel. The car went a long way down the hill before it was stopped, at least 200 yards. Alford told him that the only damage done to the motor was some damage to the wheel. Cross-examined: Defendant said he was not the first to make a claim, because he did not want to. Alford had been to see defendant, and had almost cried to him, because he expected to lose his situation. Defendant complained that Alford drove much too fast, and did not keep his right side. George Hortin said the wheel marks of the motor were in the centre of the road. He came up five minutes after the accident. His Honour said he thought the accident was caused by the horse swerving, and he saw no negligence on the part of the defendant. He was not satisfied there was any negligence on the part of the plaintiff, and would dismiss both claim and counter-claim.

A MOTOR lorry, built for the Lancashire and Yorkshire Railway Company, was tried in Manchester on Friday last week, and attracted a large amount of attention. It was loaded with twelve casks, weighing two and a half tons, and it conveyed these along a difficult road from Grossman's Chemical Works, Harpurhey, to the city, a distance of three miles, in a thoroughly satisfactory manner.



## THE DAIMLER MOTOR COMPANY (LIMITED).

THE following is the report by the directors to be presented to the third annual meeting of shareholders, to be held in the Throne Room, Hollorn Restaurant, London, on Monday the 18th inst.:—To the Shareholders.—The directors beg to submit the balance sheet and accounts for the fifteen months ending September, 1899. A net profit is shown of £1,045 2s. 10d. Towards the close of last year, owing to slackness of orders, and for financial reasons, a large proportion of the skilled workmen were discharged, and the factory was carried on unprofitably for many months. During the present year energetic measures have been taken to push the business, and the staff of men has been increased as rapidly as possible. Your directors have the pleasure to state that they have booked large orders, and that the full complement of men has been engaged. The factory is now working overtime at its full capacity on profitable orders, and will be so doing through the winter. As shown in the accounts, the company's financial position is now on a sound basis. The debenture interest, including all arrears, has been paid, all engagements are promptly met, and there is a balance of £11,226 18s. 4d. in hand. Mr. H. E. Sherwin Holt retires by rotation from the office of director, and, being eligible, offers himself for re-election. The auditors, Messrs. Monkhouse, Stoneham and Co., also retire, but offer themselves for re-appointment.

By order of the Board,

E. H. BAYLEY, Chairman.

JOHN WARE, Secretary.

Daimler Works, Coventry, December 7th, 1899.

## BALANCE SHEET, 30TH SEPTEMBER, 1899.

|  | £       | s. | d. | £        | s. | d. |
|--|---------|----|----|----------|----|----|
| To Share Capital—  |         |    |    |          |    |    |
| Authorized, subscribed and issued  |         |    |    |          |    |    |
| 10,000 Shares of £10 each, fully called  | 100,000 | 0  | 0  |          |    |    |
| Less—  |         |    |    |          |    |    |
| 37 Shares forfeited  | 370     | 0  | 0  |          |    |    |
| 9,963  |         |    |    | 99,630   | 0  | 0  |
| „ Amount Received on Shares forfeited...   |         |    |    | 55       | 10 | 0  |
| „ Loan on Mortgage   |         |    |    | 10,000   | 0  | 0  |
| Note—Debentures for £10,000 have been issued as collateral security.   |         |    |    |          |    |    |
| „ Creditors—   |         |    |    |          |    |    |
| On open Accounts   | 7,305   | 1  | 6  |          |    |    |
| Directors, for Fees and Travelling Expenses for Quarter ending September 30th, 1899                                      | 214     | 12 | 11 |          |    |    |
| Directors' Fees Suspense Account, Provision for Balance of Directors' Fees, July to December, 1898                       | 312     | 9  | 10 |          |    |    |
| Accrued interest on Mortgage (since paid)  | 645     | 13 | 3  |          |    |    |
|  |         |    |    | 8,477    | 17 | 6  |
| „ Sinking Fund to provide for extinction of expenditure on Coventry Leasehold Land and Buildings on expiration of Leases |         |    |    | 160      | 0  | 0  |
| „ Profit and Loss—   |         |    |    |          |    |    |
| Balance as per last Balance Sheet  | 7,752   | 7  | 6  |          |    |    |
| Add—   |         |    |    |          |    |    |
| Profits for fifteen months, as per Account   | 1,045   | 2  | 10 |          |    |    |
|  |         |    |    | 8,797    | 10 | 4  |
|  |         |    |    | £127,120 | 17 | 10 |

|   | £      | s. | d. | £      | s. | d. |
|---|--------|----|----|--------|----|----|
| By License, Patent Rights and Goodwill—As at June 30th, 1898... |        |    |    | 40,000 | 0  | 0  |
| „ Leasehold Land and Buildings—As at June 30th, 1898            | 14,677 | 9  | 4  |        |    |    |
| Add Additions to date   | 227    | 7  | 3  |        |    |    |
|   |        |    |    | 14,904 | 16 | 7  |
| „ Plant and Machinery—As at June 30th, 1898                     | 19,742 | 7  | 1  |        |    |    |
| Add Transferred from Fire Appliances                            | 95     | 19 | 11 |        |    |    |
| Add Transferred from Tools                                      | 193    | 3  | 10 |        |    |    |
|   | 20,031 | 10 | 10 |        |    |    |
| Less Depreciation, 5 per cent.                                  | 1,001  | 11 | 6  |        |    |    |
|   | 19,029 | 19 | 4  |        |    |    |
| Add Additions to date   | 169    | 2  | 0  |        |    |    |
|   |        |    |    | 19,199 | 1  | 4  |

|  | £       | s. | d. | £      | s. | d. |
|--|---------|----|----|--------|----|----|
| By Standard Tools—As at June 30th, 1898                                  | 4,567   | 7  | 5  |        |    |    |
| Less Transferred to Plant Account  | £193    | 3  | 10 |        |    |    |
| Less Transferred to Loose Tools...                                       | £1,642  | 15 | 1  |        |    |    |
|  | 1,835   | 18 | 11 |        |    |    |
| Less Depreciation, 10 per cent.  | 273     | 2  | 10 |        |    |    |
|  | 2,458   | 5  | 8  |        |    |    |
| Add Additions to date  | 482     | 18 | 2  |        |    |    |
|  |         |    |    | 2,941  | 3  | 10 |
| „ Loose Tools—Transferred from Standard Tools—(as at June 30th, 1898)... | 1,642   | 15 | 1  |        |    |    |
| Add Additions to date, per Work Manager's Valuation                      | 142     | 15 | 5  |        |    |    |
|  |         |    |    | 1,785  | 10 | 6  |
| „ Patterns—As at June 30th, 1898 (part of £1,371 10s. 1d.)               | 750     | 0  | 0  |        |    |    |
| Less Depreciation, 10 per cent.  | 75      | 0  | 0  |        |    |    |
|  | 675     | 0  | 0  |        |    |    |
| Add Additions to Date  | 416     | 3  | 4  |        |    |    |
|  |         |    |    | 1,091  | 3  | 4  |
| „ Drawings—As at June 30th, 1898 (part of £1,371 10s. 1d.)               | 621     | 10 | 1  |        |    |    |
| Less Depreciation, 10 per cent. off £600                                 | 60      | 0  | 0  |        |    |    |
|  | 561     | 10 | 1  |        |    |    |
| Add Additions  | 861     | 2  | 8  |        |    |    |
|  |         |    |    | 1,422  | 12 | 9  |
| „ Furniture, Fixtures, and Fittings—As at June 30th, 1898                | 2,069   | 13 | 8  |        |    |    |
| Less Depreciations, 5 per cent.  | 103     | 9  | 8  |        |    |    |
|  | 1,966   | 4  | 0  |        |    |    |
| Add Additions to date  | 130     | 2  | 2  |        |    |    |
|  |         |    |    | 2,096  | 6  | 2  |
| „ Unexpired proportion of Rates, Insurance, etc.                         |         |    |    | 210    | 5  | 11 |
| „ Stock  |         |    |    |        |    |    |
| Cars, Launches, and finished parts                                       | 11,655  | 15 | 9  |        |    |    |
| Stores   | 6,872   | 3  | 6  |        |    |    |
| Work in progress   | £12,798 | 5  | 5  |        |    |    |
| Less Payments on Account   | 5,311   | 8  | 2  |        |    |    |
|  | 7,486   | 17 | 3  |        |    |    |
|  |         |    |    | 26,014 | 16 | 6  |
| „ Shares Held...   |         |    |    | 110    | 0  | 0  |
| „ Sundry Debtors   | 6,259   | 12 | 7  |        |    |    |
| Less Provision for allowances  | 200     | 0  | 0  |        |    |    |
|  | 6,059   | 12 | 7  |        |    |    |
| „ Deposits made by Company   | 58      | 10 | 0  |        |    |    |
|  |         |    |    | 6,118  | 2  | 7  |
| „ Cash—  |         |    |    |        |    |    |
| On Deposit   | 10,056  | 11 | 2  |        |    |    |
| At Bank on Current Account   | 1,079   | 12 | 0  |        |    |    |
| In Hand  | 90      | 15 | 2  |        |    |    |
|  | 11,226  | 18 | 4  |        |    |    |

E. H. BAYLEY, } Directors.  
E. G. JENKINSON, }

£127,120 17 10

We have audited the books of the Daimler Motor Company (Limited) for the fifteen months ended 30th September, 1899, and certify that in our opinion the above Balance Sheet correctly exhibits the company's affairs at that date.

MONKHOUSE, STONEHAM & CO.,  
Chartered Accountants.

London, E.C., 5th December, 1899.

## PROFIT AND LOSS ACCOUNT from 1st July, 1898, to 30th September, 1899.

## A Period of Fifteen Months.

|   | £ | s. | d. | £     | s. | d. |
|---|---|----|----|-------|----|----|
| To Salaries   |   |    |    | 3,275 | 19 | 4  |
| „ Directors' Fees   |   |    |    | 1,049 | 19 | 10 |
| „ Directors' Fees Suspense Account  |   |    |    | 312   | 9  | 10 |
| „ Auditors' Fees  |   |    |    | 34    | 2  | 6  |
| „ Rents, Rates, Taxes and Insurance   |   |    |    | 729   | 13 | 0  |
| „ Legal and Professional Charges and Patent Fees  |   |    |    | 678   | 12 | 6  |
| „ Compensations, Claims and Allowances, including Legal Charges in connection therewith |   |    |    | 1,612 | 7  | 10 |
| „ Committee of Investigation  |   |    |    | 533   | 13 | 9  |
| „ Launch Daimler  |   |    |    | 680   | 1  | 7  |
| „ Amount paid to obtain release from liability in respect to Mortgage on Eel Pie Island |   |    |    | 71    | 0  | 0  |

|   |         |    |    |
|---|---------|----|----|
| To Printing and Stationery, Postages, Telegrams, and Telephones ... | 315     | 16 | 8  |
| „ Advertising, Exhibition Expenses and Catalogues...                | 944     | 0  | 1  |
| „ Travelling Expenses ...   | 698     | 19 | 0  |
| „ General and Petty Expenses ...                                    | 285     | 1  | 2  |
| „ Bad Debts written off ...   | 422     | 5  | 11 |
| „ Interest on Mortgage and Bank Charges                             | 536     | 1  | 7  |
| „ General Freight and Carriage ...                                  | 234     | 11 | 8  |
| „ Lighting and Heating ...  | 40      | 13 | 4  |
| „ Sinking Fund for Redemption of Coventry Leaseholds ...            | 160     | 9  | 0  |
| „ Depreciations written off—  |         |    |    |
| Stock ...   | 1,161   | 10 | 3  |
| Plant ...   | 1,001   | 11 | 6  |
| Tools ...   | 273     | 2  | 10 |
| Drawings ...  | 60      | 0  | 0  |
| Patterns...   | 75      | 0  | 0  |
| Furniture, Fixtures, and Fittings ...                               | 103     | 9  | 8  |
| Shares held ...   | 262     | 10 | 0  |
|   | 2,937   | 4  | 3  |
| „ Balance, being Net Profit ...                                     | 1,045   | 2  | 10 |
|   | £16,597 | 16 | 8  |
|   | £       | s. | d. |
| By Gross Profits ...  | 15,290  | 1  | 1  |
| „ Rents Received ...  | 372     | 8  | 5  |
| „ Prizes won ...  | 110     | 0  | 0  |
| „ Apprenticeship Premiums and Sundry Receipts                       | 142     | 13 | 0  |
| „ Interests, Dividends, and Cash Discounts                          | 445     | 12 | 0  |
| „ Royalties written back ...  | 225     | 0  | 0  |
| „ Transfer Fees, etc. ...   | 12      | 2  | 2  |
|   | £16,597 | 16 | 8  |

### FURIOUS DRIVING CASES.

At the Brighton Borough Bench on the 7th inst., before the Stipendiary (Mr. C. G. Heathcote) and other magistrates, Mr. Percy Breen, of 14, St. James's Mews, London, W., was summoned for furiously driving a motor-car on the King's Road, on November 28th. Defendant pleaded guilty. P.C. Ranger said about 12.10 in the afternoon he saw defendant driving a motor-wagonette westwards along the King's-road opposite the Hotel Metropole. He was going at a rate of about fifteen miles an hour. There was a lot of traffic. Mr. Hobson corroborated the constable's evidence, but said that the steering of the car was good, and no accident occurred. Defendant denied he was travelling at more than ten miles an hour. Mr. Hobson said he considered the speed at which defendant was driving was dangerous to the public. The Stipendiary fined defendant £5 and costs, and thanked Mr. Hobson for taking the trouble to attend.

MR. CHARLES JARROTT, of 26, Baskerville Road, Wandsworth Common, was also summoned for furiously driving a motor-car on the King's Road on November 28th. Defendant did not appear. P.C. J. Farr deposed to seeing defendant driving a motor-wagonette about 12.45 at the rate of about twelve miles an hour westwards along King's Road. P.C. Miller said the car was travelling at "a furious rate." Defendant said he was not exceeding eight miles an hour. William Hudson said he thought the speed was fourteen miles an hour. He had been a driver—of horses—all his life. The Stipendiary said the defendant had written a long letter to the effect that he was travelling very slowly, almost too slowly, crawling along at 6½ miles an hour, and had suggested that the police had mistaken him for someone else. P.C. Farr, in reply to the Stipendiary, said he was not mistaken. A fine of £5 and costs was imposed.

At the Brighton Police Court last week, before the Stipendiary (Mr. C. G. Heathcote) and other magistrates, Mr. Hugo de Bathe was summoned for driving a light locomotive in North Street at a speed greater than was reasonable on November 27th. Mr. Peck, of London, appeared on behalf of the defendant, who was not in court, and pleaded not guilty. P.C. Henry Nightingale deposed that on November 27th, about 6.40 p.m., he saw defendant driving a motor-car down North Street at a very furious rate. The pace was both dangerous to the public and to himself, being over twelve miles an hour. Shortly afterwards witness saw the defendant on the King's Road, opposite Cannon Place, where he had had a breakdown. He admitted driving down North Street very fast, and added, "I can drive it to the devil." Defendant seemed to take the matter as a joke, and also said he was not "going to have horses' legs in the back of his motor." He had a brake, but said he did not use it going down North Street. There was a lot of traffic, and a great many people were about at the time, and defendant must have been an expert driver to have got through all right. By Mr. Peck: Defendant did not say he was driving to the devil. Witness estimated the speed from his knowledge of bicycle riding. Richard Rowe said he saw defendant go down North Street at a speed of about twelve miles an hour. The pace was rather stiff for North

Street. There were cabs and buses about, but witness did not notice that they had to get out of the way. Mr. Peck, for the defendant, said the real question was whether the pace was reasonable and proper under the circumstances. His instructions were that the brake was on to the full extent, and that the defendant did not endanger anybody. If he had been going at the terrific pace alleged he could not have pulled up, as one of the witnesses stated. The Stipendiary said there was no doubt defendant was going much too fast down North Street, although he might be a skilful driver. He should have to impose a fine of £5 and costs, or twenty-one days, and the penalty would have been much heavier but for the fact that defendant appeared to have had some sort of control over his car.

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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### E. H. CLIFT, Sinclair Motor Car Works, SINOLAIR ROAD, KENSINGTON, W.

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# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, DECEMBER 22, 1899.

[No. 42.]

Published Weekly by CORDINGLEY & CO., 39 & 40, Shoe Lane, London, E.C.

## COMMENTS.



IT is satisfactory to hear that several automobilists are responding to the recent appeal made for the education of county and district councillors and others in automobile matters. By giving facilities for these gentlemen to enjoy the pleasures of a motor-car ride, our readers can do a great deal to further the movement and also to prevent those in authority figuring in the ridiculous light that some local public men have recently done. As Mr. Crompton pointed out in the admirable paper reported in our columns last week, we must convince the public that more attention should be paid to the control exercised by the driver in stopping the car, than to the rate of actual progression. Hence, all efforts to show the public that a motor-car can be promptly stopped in the shortest possible distance should be welcomed. We hope all automobilists will invite friends who have influence on public bodies to ascertain for themselves how reliable the automobile is becoming—in fact, has become.

### The Automobile Club's 1,000-Mile Trial.

THE Sheffield meeting in connection with this important event—or rather series of events—will take place at the Royal Victoria Station Hotel on Wednesday, the 3rd prox., at twelve noon. During the past few days Mr. C. Johnson, the secretary, has been going over the proposed route. He had a decidedly cool time, and on the road from Newbury to Marlborough found the snow was five to six inches deep. He arrived at Bristol with moustache, eyebrows, and hair stiffly frozen, the result of fast travelling through an atmosphere charged with 15 degrees of frost. On the following day Mr. Johnson journeyed to Birmingham, and thence to Coventry, from which town he went seventy-five miles without meeting a single vehicle. Altogether his 8 h.p. Panhard did 322 miles in three days without any breakdown, the only stoppages being (1) for a new wick to a lamp, (2) owing to a puncture of a pneumatic tire by a nail from a horse's shoe, and (3) and (4) by chains coming off the wheels.

### The Liverpool Self-propelled Traffic Association.

THIS association has just started on its fourth session, which, if we may judge from the successful meeting held on Tuesday last promises to be no less important than its predecessors. A full account of the meeting is given on another page. The Earl of Derby in his address pointed out that, while other automobile associations have devoted attention more to the lighter class of vehicle, the Liverpool Association had dealt with the problem of working heavy traffic by specially-constructed motor-wagons. He congratulated the association on the success which had already attended their efforts, and

expressed belief that the movement was bound to succeed. He did not suppose motor-wagons would ever supersede railways or even cartage by horse traction, but they had their own distinct mission, and he believed they would prove of enormous advantage, without in any way displacing existing interests. Having regard to the success which had attended previous trials, he hoped they would be continued, since it was proved that manufacturers and inventors had derived great benefit from them.

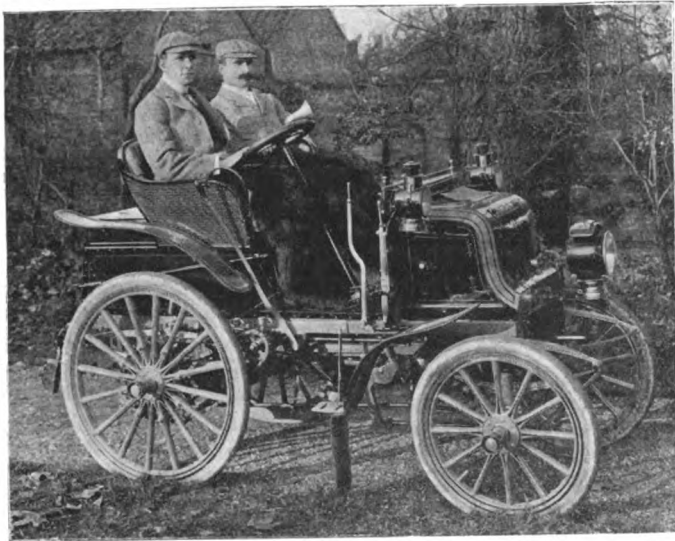
### America and its Automobiles.

THEY have plenty of ideas and plenty of companies in the United States, and apparently both are to be pressed into the service of the automobile industry. We hear that "the automobile room" is now advertised by some estate dealers as a feature likely to attract intending tenants or purchasers of houses, and in one district of Brooklyn where basement houses are built with the dining-room in an extension on the first floor it has been seriously suggested that the basement be re-arranged for the accommodation of horseless carriages, which can be run out to the street on an incline. Evidently the people of the United States should quickly begin to appreciate the motor-car world if the exhortations of journalists are to prove a factor in the conversion of the horse-loving public. According to the *Age of Steel* "it is about as well established as anything can be that the American inventors are determined to produce the right sort of automobile wagons, and at the present time many noted inventors are striving to solve the problem necessary to give the general public an automobile that can be managed as easily as the ordinary conveniences of a household." When will the time come when automobiles are among our ordinary conveniences, and the automobile will be regarded by architects in the design of our houses? And it would also be interesting to know whether German, French, and British genius will have anything to do with the development, for, reading American exchanges, it would appear that the Americans have a monopoly of engineering braininess.

### Caution at Croydon.

LAST week we spoke strongly about the way in which the police at Brighton were interfering with automobilists. That is not the only town in the south, however, where officiousness is attempting to stem the progress of our movement for the speed of motor-cars is also being watched in the neighbourhood of Croydon. At the Croydon Borough Bench, Mr. Baddeley said that a few days ago he called the attention of the police to the danger of racing by omnibuses, and he was glad to see that the police had attended to his observations, and that there had been a material improvement, even if it was not actually stopped. But there was an even worse feature going on. He had had complaints of the dangerous way in which motor-cars passed through the town. Only a few days before he saw three or four running at a very great speed, and it was likely to cause a most terrible accident at some time or other. He knew the difficulty the police had in dealing with the matter, as they could not be stopped in

the same way as horses, but he drew public attention to the matter in the hope that something might be done. Inspector Williams said that the matter should be attended to. So we may expect to have a somewhat similar outbreak of police interference at Croydon as at Brighton.



[Photo by]

[Argent Arc'ier, Kensington.]

MR. S. F. EDGE AND MR. C. JARROTT ON PANHARD CAR.

#### Motor Cars for Municipal Purposes at Birmingham.

THE use of horseless vehicles in municipal work has been brought to the notice of the Birmingham Health Committee, who are considering the expediency of adopting them for the Interception Department, which now employs a large number of horses, particularly at night. The work is particularly trying to horseflesh, and it is believed, from the experience of other bodies, that mechanical power would prove more economical. A deputation, consisting of five gentlemen, including Dr. Hill, the medical officer, has been appointed to visit a London centre where the motor-vehicles are in use to enquire into and report upon the working of the same. Thus another municipal body shows its enterprise in keeping pace with the development of automobilism.

#### The Trade Federation.

At the Daimler Motor Company's meeting on Monday, Mr. E. H. Bayley, J.P., referred to the movement towards federation among those engaged in the sale or manufacture of motor vehicles. He mentioned not only the effort of the Automobile Club and of those who convened the Holborn Viaduct Hotel meeting, but also another proposal that had been made, viz., to the effect that the trade should be organised under the auspices of the London Chamber of Commerce. Without in any way indicating our own views on the subject, we would point out that the latter organisation is of great influence in the commercial world, combining all sections of traders and manufacturers into a common union for mutual protection, while, at the same time, preserving a separate identity for each particular industry. A motor-car section would meet periodically for the discussion of matters concerning inventions, legal matters affecting the trade, the outlook for business, etc., and when questions cropped up in connection with hiring agreements and the dozen other points that will undoubtedly occur as the industry grows, the experience of all the officials of the Chamber and experts in other industries would be available. This suggestion, that of the Automobile Club (which was invited by leading manufacturers), and the effort of Mr. Lawson and his friends, are

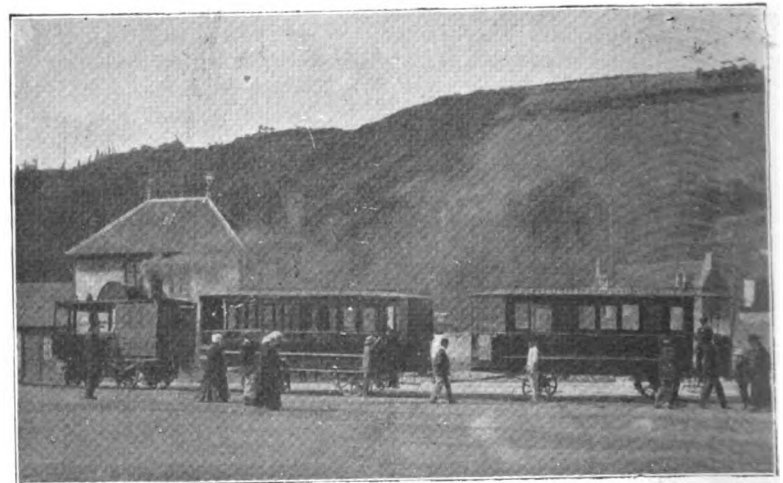
the three attempts to organise the industry that have lately been the subject of discussion.

#### A Comparison of Accidents.

ON several occasions in these columns we have referred to the list of horse and automobile accidents which *Le Velo* publishes monthly, and which with unflinching regularity demonstrate the great increase of safety secured by the employment of motor vehicles. The most recent issue of these statistics is no exception to the rule, and one learns that during the month of November no less than 879 accidents were brought about by the noble steed in France, resulting in 96 deaths and the injury of 783 persons, while the automobile was responsible for only 36 accidents, and claimed but one victim. This unfortunate, a labourer, was knocked down by an automobile in the vicinity of Grasse on the 22nd ultimo, and succumbed to his injuries a few hours afterwards. In the list of horse accidents the average of fatalities is seen to be one in nine, while the figure in the automobile category is merely one in thirty-six. Such is the interest shown in these monthly statistics that the directors of *Le Velo* have expressed the intention of adding a third list, and to this end a record of all bicycle accidents will be kept and published side by side with the mishaps occasioned by the horse and the automobile, their brethren of the road. This additional category will be commenced on the first day of the New Year.

#### Motor-Cars in Australia.

So far little headway appears to have been made with automobiles in Australia, and we learn from Messrs. Phillips, Ormonde, and Co., of Melbourne, that for the time being the Victorian Government has abandoned the idea of using motor mail-vans. In Queensland, however, there is a strong feeling in their favour in some quarters, but the statute stands in the way of the postal authorities adopting them for the present. At Moray Street, South Melbourne, Messrs. O'Farrell and Tarrant are establishing a plant for the manufacture of motor vehicles, Major O'Farrell having imported a first-class model from Germany. A concern has also lately been formed in Melbourne to be known as the Automobile Company of Australia, the object being to act as agents in the Colonies for English and other builders of motor-cars. Mr. H. Thomson, an engineer of Melbourne, has recently



A LE BLANT STEAM ROAD-TRAIN BETWEEN ST. BRIEUC AND ST. QUAY, BRITTANY.

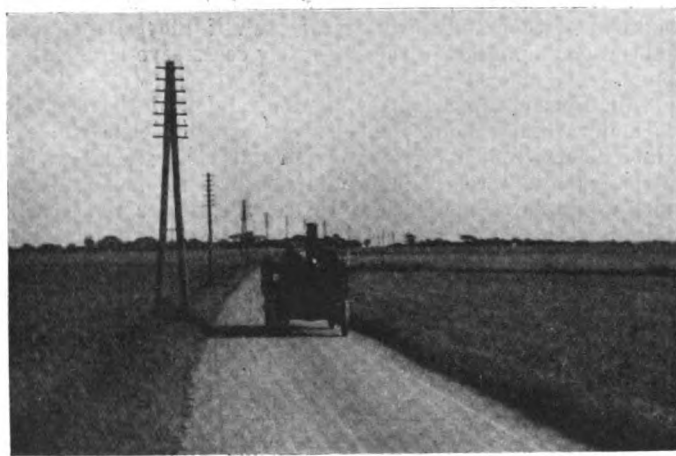
completed a steam car. This vehicle, which is stated to have travelled 850 miles without any serious breakdown, has steam cylinders one and a-half inches and three inches in diameter by three inches stroke, the engine developing 5 h.p. The fuel is kerosine, and the weight of the vehicle is 102 cwt.

### The Werner Motor-Bicycle.

WISHING thoroughly to test the Werner motor-bicycle, Miss N. G. Bacon, accompanied by Mr. Leonard, of the Motor Manufacturing Company, on Friday last, rode to Brighton in three hours and a half. The outward journey, via Redhill, Horley, Crawley, Burgess Hill, etc., despite the indifferent road surfaces and the inclemency of the weather, was fairly enjoyable, but *en route* homewards, in consequence of the density of the fog and darkness, the ride had to be abandoned, and the train was taken at Crawley. In parts the roads were covered three inches deep with frozen snow, rendering the hills difficult of ascent and descent. Handcross Hill on the return trip was found to be practically unridable, and some thrilling episodes were encountered due to the fog and the slippery road surfaces. On one occasion, whilst descending a steep incline, to avoid collision with the horses of a carriage, the hand-brake of the rear wheel had to be suddenly jammed on, but the cycle merely swerved right and left, and did not bring the rider to the ground. The trip was not undertaken to demonstrate any speed possibilities, but rather to prove whether the Werner bicycle was adaptable to the riding powers of an average woman who sought to enjoy motoring as a pastime. In fact, no better opportunity could have been afforded to put to a crucial test the non-skidding proclivities of the cycle, and its advantages for negotiating traffic and bad riding conditions.

### Electrical Cars and Long Journeys.

WITH reference to the recent trip to Brighton by Mr. A. Jordan, of the Electrical Undertakings, Limited, referred to in our last issue, we have obtained a few particulars of the electrical game cart used on the occasion. It seems that the weight of the cart with two passengers was about 22cwt., of which the accumulators used accounted for about 10cwt., so that the proportion of accumulators to the total weight approaches 50 per cent. The accumulators in question consisted of forty four-plate cells of the Leitner type, having an ampère-hour capacity of about 180. The trip to Brighton was made without recharging the batteries, and it is interesting to know that the voltage on open circuit on arrival at Brighton was as high as 84 volts, which is equivalent to two volts per cell. This voltage was taken on



SNAPSHOT FROM "LIFE" BUS, NEAR DOVER.

open circuit, and we are informed that the open-circuit voltage on the cart's starting in Piccadilly was 94 volts. The cart is propelled by two motors, which drive the rear wheels independently, and a series-parallel controller is arranged to vary connections between the motors and the battery. The accumulators, however, are always kept in series. The controller gives six speeds forward and two in the backward direction. The motors are also used to brake the cart, and in this way a considerable amount of energy is restored to the battery when going downhill. The average current throughout the journey of four and a half hours was 25 ampères, from which it will be seen that the ampère-hours taken out were considerably below the rated capacity of the accumulators.

### The Latest Vallée Motor-Car.

THE accompanying illustration shows the latest type of car turned out from the works of M. Vallée at Le Mans, France, and introduced into this country by the Automobile Association of Princes Road, Holland Park Avenue, Notting Hill W. The car, which can accommodate four persons, is fitted with a two-cylinder horizontal motor, and is provided with three speeds, the power of the motor being transmitted from the motor-shaft by belts working on fast and loose pulleys to a counter-shaft, and from the latter to the rear axle by the usual sprocket wheels and



THE LATEST VALLÉE MOTOR-CAR.

chains. This type of car can also be fitted with a four-cylinder motor with direct transmission by one loose belt only to a "live" axle without any chains or toothed wheels. The car is comfortably upholstered, and is claimed to be an excellent hill-climber.

### Motor-Cars in the American Postal Service.

A REPRESENTATIVE of the *Horseless Age*, of New York, recently interviewed the superintendent of the free deliveries division of the U.S. Post Office Dept. at Washington, Mr. A. W. Machen, regarding what is being done with motors in the American postal service. "We are interested," said Mr. Machen, "in the motor vehicle because we make it a policy to be alive to every innovation which may in any way tend to improve the service. I believe in the motor vehicle, and have encouraged experiments with it. We are going to keep on with these experiments. Detroit and Brooklyn are to have tests shortly, and manufacturers in other cities will doubtless want to have their machines tried. However, I am persuaded that the automobile is yet in a crude state compared with the high development it will soon reach. The department, therefore, does not contemplate any immediate purchases in this line. When we find an automobile that will run up hill and over rough roads well, that can be operated at a low cost and does not cost a small fortune in the first place, then will the motor vehicle surely supplant the horse in the postal service. We will gladly give the manufacturers opportunity to demonstrate their machines."

A SERVICE of motor-cabs is to be started in Karlsruhe, Germany, during the course of next year.

ACCORDING to a Berlin contemporary an English company proposes to establish a service of motor-cars between Memel and the Russian port of Libau.

*L'Avenir de l'Automobile et du Cycle* does not like the term *chauffeur*, now so largely employed in France. It prefers and suggests the use of the word *motoriste*.

The Yeovil Rural District Council has asked the District Council of South Molton, Devon, to join in the memorial to alter the order relating to the speed of light locomotives. It has, however been decided to take no action in the matter.



## THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.



THE Liverpool Self-propelled Traffic Association held the opening meeting of the fourth session in the Royal Institution, Colquitt-street, Liverpool, on Tuesday night. The proceedings opened with a reception in the upper hall of the building by the president, the Earl of Derby, which was attended by a

large number of ladies and gentlemen interested in the object of the association. The Earl of Derby afterwards presided at a meeting in the lecture-hall, at which reports were presented upon the results of the trials held under the auspices of the association during the year. Amongst those supporting the president on the platform were Professor H. S. Hele-Shaw, Messrs. A. L. Jones, H. W. West, E. R. Calthrop, E. C. Danson, Shrapnell Smith (hon. secretary), and others.

Mr. Calthrop gave a short address on the subject of the tare regulations. One of the most important results of the trials was the demonstration of the very great difficulties under which British manufacturers laboured in the effort to produce motor-wagons which were, on the one hand, a mechanical and commercial success, and, on the other, which conformed with the law. There were immense improvements in the vehicles assembled at the trials this year compared with last year. The judges made three main deductions. The motor-wagon must be capable of carrying on one platform at least the same weights and bulk of goods as those drawn by horses now, namely six, eight, and ten tons, and so long as the legal restriction of three tons tare was maintained a wagon could not be constructed to do that. The restriction in 1896 of the tare weight to the purely arbitrary limit of three tons had not been justified by experience since, or supported by any valuable considerations of public policy or safety. It was the duty of the association to do what it could to secure reform in that respect, and by raising the tare from three tons to four tons, to give fair play to the manufacturers.

Professor Hele-Shaw gave a bright and interesting description of the recent trials in Liverpool, illustrated by lantern slides, with very important and instructive deductions from the experiments, and explanations as to the varying systems. All the exhibited vehicles were, he considered, deserving of awards for the excellent results they had in one way or another been able to achieve.

The Earl of Derby moved the adoption of the judges' report, and a hearty vote of thanks to those gentlemen who assisted in the trials, especially mentioning the hard-working honorary secretary, Mr. Shrapnell Smith. It seemed that by the doctrine of natural selection their northern branch of the central association had developed its own line of growth, and whereas in the south attention had been more directed to the lighter class of vehicles and quick running, they in the north had endeavoured to work out the very practical problem how to deal with their heavy loads without the intervention of horse traction, which was becoming every day more and more a necessity in the country. They were intersected by railways in every direction, but anyone who had had heavy goods to deliver or be delivered in any large quantities along the line would tell them that there were causes which appeared to be beyond the control of anyone, and which varied very much in detail, which delayed the rapid transit of goods over even short distances. The great fight about the division of the railway rates, and the subsequent separation of the railway rates of carriage from the terminal charges for cartage, led people to cast about for means to see whether they could not cut down some of the terminal charges. It was within his own knowledge that in some of the districts of Lancashire where there were very heavy cartage and good roads, traffic in many cases formerly carried by rail over short distances was now carried by hurries. That appeared to their

association to be a subject into which they could make very careful and exhaustive inquiries as to the best mode of carrying the traffic to which they were accustomed in all their Lancashire towns, and that was the object of their first and subsequent experiments, though they did not leave out of sight the light traffic. It was very much to their honour that the manufacturers and inventors had obviously endeavoured to learn by the result of the trials that had been made, and to make sacrifices for the sake of improving by those experimental trials, which he trusted would be continued. A great many defects had been found out and remedied. Upgrades had been mounted and downgrades descended, and the machines now appeared to be entirely under control, and to have been worked out on very practical lines. Referring to the important question of tare allowance, his lordship said it was a little doubtful whether they could expect a Government to consent to the alteration of one of the clauses of the Act concerned without the risk of disturbing others as well, but it was a question whether or not an amendment bill could be introduced to the one clause. He would be very glad to assist anything in that direction. It would be well to feel the ground first in that matter, and to ascertain what measure of support could be obtained. The question of self-propelled traffic was one that must and would come to the front and make its way. He did not suppose it would ever supersede railways or carriage by horse traction, but it had a distinct work to perform. Without the slightest displacement of existing interests, he believed there was room for the development of self-propelled traffic alongside of them, and that greater circulation of the goods of the country would take place, under conditions far more favourable to intercourse and to the maintenance of the state of their roads than at the present time was the case.

Mr. A. L. Jones seconded the motion, and claimed that up to the present time they had succeeded remarkably well in their work. The Act as it now stood with regard to tare weight was really a most ridiculous thing, and prevented them making a wagon which was of commercial value. He contended that the railway companies were the people who should support them, because their success would facilitate the work and increase the traffic of the railway companies themselves. In Liverpool they looked at the interest of the port, and they knew the arrangement of their docks and the present system handicapped the port very much. They were losing he would be afraid to say how many hundreds of thousands every year, and if they could take a motor-wagon alongside of the ships they could save large sums of money.

Mr. Danson supported the motion, and said the one thing which debarred a motor-vehicle from carrying that which an ordinary horse vehicle carried every day in their streets was the restriction as to tare. They could not produce a motor-wagon which would be strong enough to carry eight or ten tons, in addition to the engine and boiler, and keep within the restricted tare limit.

The vote was carried with applause, and responded to by Mr. Shrapnell Smith and Mr. Thornycroft. The awards were afterwards distributed to the successful competitors by the Earl of Derby, who was cordially thanked for his services at the conclusion of the meeting.

NEW works for the construction of automobiles have just been completed at St. Dizier, France.

THE Hereford District Council has resolved to support the Yeovil Council's petition to the Local Government Board.

DURING the present month a service of electrical omnibuses is, it is reported, to be started between the Green and East Rock Park at Newhaven, Conn., U.S.A.

THE Settle District Council has decided to support the recommendations of the Yeovil Rural District Council respecting the speed of motor-cars.

THE Baltimore and Ohio Railroad Co. is reported to be contemplating the establishment of an automobile cab system, to be operated in connection with its trains.

## A NEW BOLLÉE VOITURETTE.

WITH the view of meeting the requirements of those automobilists who prefer four wheels to three, the Société des Voiturettes Automobiles, of 163 Avenue Victor Hugo, Paris, has lately put on the market the four-

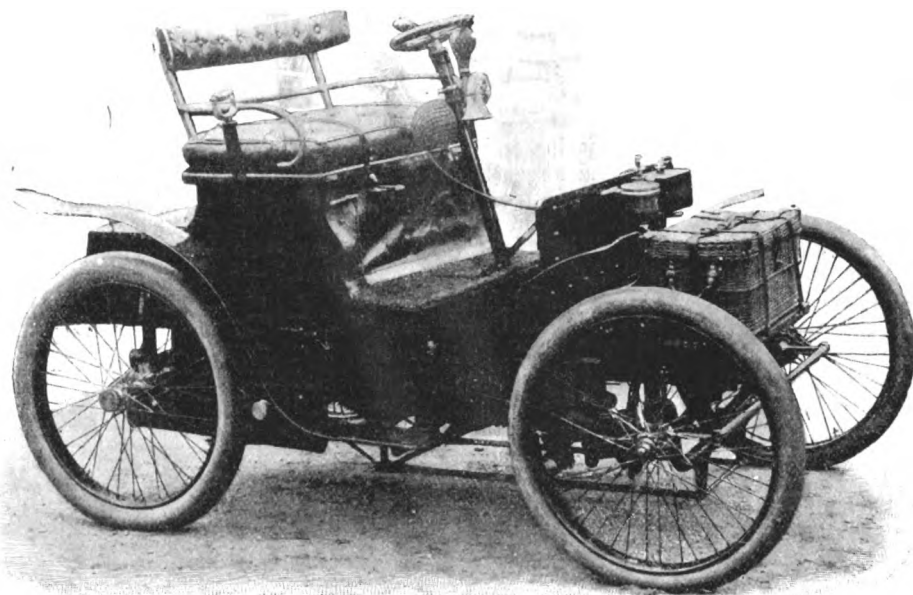


FIG. 1.—GENERAL VIEW OF NEW BOLLÉE FOUR-WHEEL MOTOR-VOITURETTE.

wheel Bollée voiturette illustrated herewith in Figs. 1 and 2. A noticeable feature in the new car is that the two passengers are arranged to sit side by side instead of tandem fashion. An examination of the plan (Fig. 2) will show that although at first sight it would appear that considerable changes have been made in the arrangements of the motor and of the power-transmission mechanism, yet, practically all that has been done has been to take the existing frame, with motor, petrol tank and speed-change gear fixed, and reversing it, making the rear of the three-wheel the front of the four-wheel car. The frame is of tubular construction, the motor being located at *B*, on the right-hand forward side of the car, *E* being the carburettor, *E'* the silencer, *G* the fly-wheel, *U* the starting handle. The rear road wheels are mounted on a hollow differential axle *O*, supported by special links *Y* from a bridge *R* in such a way that, as in the well-known three-wheel machine, the rear wheels may be moved slightly forward, so slackening the driving belt and consequently cutting out the motor; this device taking the place of a friction clutch. Three speeds, 10, 20, and 30 kilomètres per hour are provided, the power being transmitted from the intermediary shaft *Q* direct to the back axle by a single driving belt working on the pulleys *O* and *S*. The variable speed gear and the tightening and slackening of the driving belt is controlled by a handle, similar to that in the three-wheel voiturette, which is, however, in the new car controlled by the right instead of the left hand. Steering is controlled through the front wheels by a hand-wheel *G* arranged conveniently at the rider's left hand. A foot-pedal controls a Lemoine brake acting on the drum *x* on the back axle. The wheels are of the cycle type, shod with pneumatic tires. The pressure tanks for the burner and the lubricator are arranged in the front portion of the car. The motor is of slightly greater power than that employed in the three-wheeled voiturette, its new position enabling the air to have freer access

to the cooling ribs. The car is comfortably upholstered, is 7½ ft. long, 4½ ft. wide, and 4 ft. 7 in. high, while its weight is given as 660 lbs., or half as much again as the three-wheeled vehicle.

AN accident of a nature which has hitherto been unusual in Swansea occurred about nine o'clock last Friday night in Gorse Lane. A hansom had just driven round the corner from Brynymor Road, and was proceeding westward, the driver, according to his own version, keeping to his proper side of the road. From the opposite direction came a motor-car. The automobile also, according to its driver, was on its right side of the road; but at a critical moment both vehicles must have accidentally converged to the centre of the road. Whatever the cause, a collision took place, resulting in the hansom being completely capsized. The cab was considerably damaged, but the motor-car, with its driver and passengers, escaped without a scratch.

THE Lanchester Engine Company has been registered with a capital of £100,000 to acquire certain inventions of Mr. Frederick W. Lanchester relating to gas and oil motor or other engines, to power-propelled and other vehicles, and to couplings and other purposes. The subscribers are Joseph S. Taylor, Acock's Green, Birmingham, engineer; Allan Whitfield, Birmingham, manufacturer; James Whitfield, Moseley, Birmingham, manufacturer; Hamilton Barnsley, Edgbaston, manufacturer; Charles V. Pugh, Coventry, engineer; John V. Pugh, Coventry, engineer; Frederick W. Lanchester, Birmingham, engineer.

As a result of Messrs. Dennis Bros.' exhibit of their Speed-King motor-cars, motor-cycles, and cycles at the recent National Cycle Show at the Crystal Palace, and the general increase in

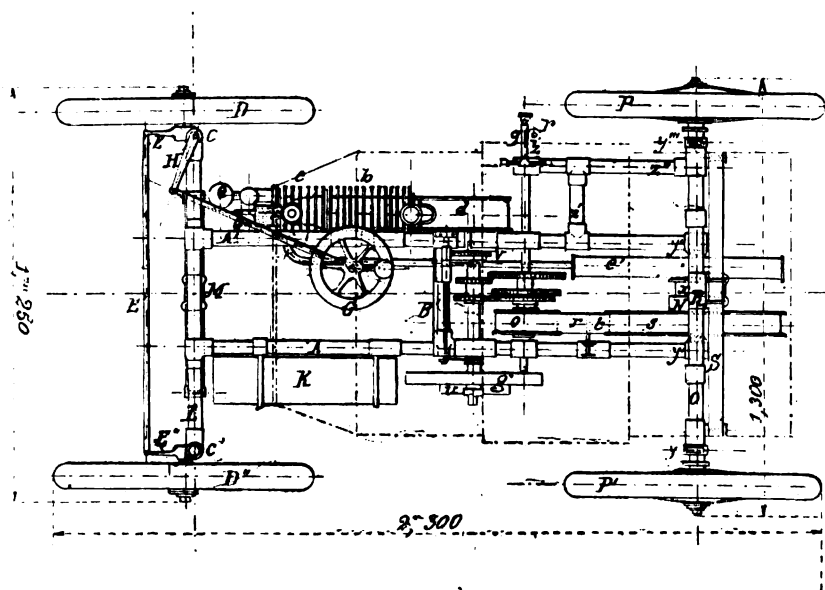


FIG. 2.—PLAN OF NEW BOLLÉE FOUR-WHEEL MOTOR-VOITURETTE.

their already large business, their present factory in Guildford, "The Barracks," has proved inadequate for their requirements, and they have purchased two corner plots of ground abutting Onslow and Bridge-street in the same town, on which they intend building a large factory and fitting it up with all the latest automatic machinery for the production of cycles and automobiles.

## MOTOR-CARS ON THE CONTINENT.

(From our Own Correspondent.)

### A New German Company.

DIE MOTORWAGEN GESELLSCHAFT BERLIN is the title of a new company, which has just been formed in Berlin with a capital of £21,000 to undertake the sale and letting out for hire of motor-vehicles. The new company will acquire the "Motor-Kutcheri" of the Allgemeine Motorwagen Gesellschaft and will enlarge the same by the addition of a number of electrical and petroleum-spirit motor-vehicles.

### The French Automobile Club.

WITH the close of the year new members of the French Automobile Club are flocking in, and the secretary has notified members of the committee that during this month meetings will be held every week, and oftener if necessary, for the purpose of dealing with these applications. Last week ninety-nine new names were enrolled on the books, bringing up the grand total to 2,173. Another attractive feature has been added to the club house by the installation of a fencing saloon, and members fond of a bout with the foils can now practise the art in a spacious room set apart for their use. The committee welcome every suggestion that tends to make the club house more attractive, and endeavour to meet the members' wishes in every respect.

### A New Club at Bologna.

AUTOMOBILISM is marching apace in Italy, and no sooner does a town boast of a few *chasseurs* than the sport catches on, and a demand for motor-vehicles is created. Nor is the social aspect of the question overlooked, and clubs are springing up in a number of provincial towns. In the case of Bologna, the movement has been initiated and fostered by some leading members of the Italian Cyclists' Touring Club residing in the neighbourhood, and it is as a section of the older institution that the automobilists have banded themselves together. The framing of the necessary regulations has been placed in the hands of a committee consisting of Signors Rosatti, Bessani, Rossi, and Sossi, and hopes are expressed that it will be possible to promote several automobile races early next year.

### The Nice Automobile Club.

ON the 10th instant a considerable number of members took part in the second of that delightful series of excursions which the Automobile Club of Nice is promoting this season, and which bids fair to be one of the most interesting features of the club's programme. The drive extended as far as Cape Ferrat, where lunch was partaken of, the party then returning to Nice by way of Cimiez.

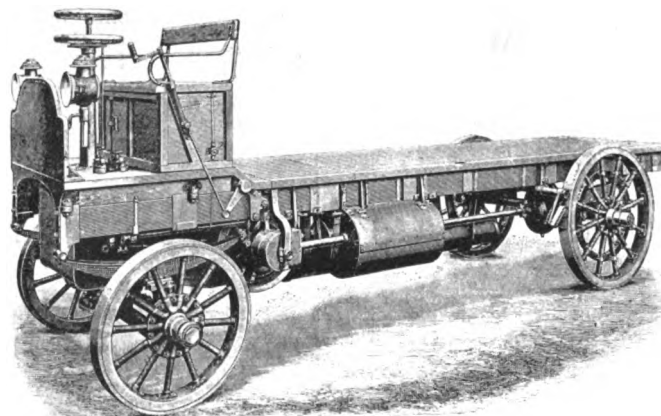
### Fast Driving in Rome.

FROM recent reports it would appear that for some time past the Roman authorities have been much perturbed by reason of the furious speed at which certain automobilists drive their vehicles in the Italian capital, and that they have now decided to put a stop to the nuisance by restricting the legal speed limits and by dealing very severely with all *chasseurs* transgressing the regulations. And so, by reason of the selfishness and recklessness of some few automobilists, one continental town after another is compelled to protect its inhabitants by means of stringent regulations, and the progress of the whole industry is impeded. When will these drivers become wiser and cease to render themselves a dangerous pest? Unfortunately an accident to himself has, generally speaking, but little effect upon a man of this class, and he is only awakened to a full sense of his responsibilities when he has made a fellow creature suffer. To

be the direct cause of the maiming, or, perhaps, even the death of some unfortunate being is more than sufficient to cure for ever the recklessness of the wildest of drivers, and it is not until this arrives that he ceases to conduct his car thoughtless of all consequences.

### A German Heavy Motor-Wagon.

THE Eisenach Fahrzeugfabrik, of Eisenach, Germany, have lately completed the heavy motor-wagon depicted in the accompanying illustration. The motor, which is located in the fore part of the frame, is of 12-h.p. It is fitted with water jacket and tube ignition. Three forward speeds of five, ten, and fifteen kilometres per hour, as also a reverse motion of four kilometres, are provided, the power of the motor being transmitted by a longitudinal shaft, through bevel gearing, to a



counter-shaft at the rear and from the latter by pinions gearing with internally-toothed rings bolted to the rear road wheels. The frame of the wagon is built up of steel tubing, the tubes being also made to serve for the circulation of the cylinder-cooling water. The road wheels are of strong construction, being of metal with tubular steel spokes. The wagon is claimed to be capable of carrying a load of seven tons, and of mounting 12 per cent. gradients.

### The Exposition Internationale du Cycle et de l'Automobile.

THE Exposition Internationale du Cycle et de l'Automobile was opened on Tuesday last week at the Salle Wagram, Paris, the official opening taking place on Thursday, the 14th inst. The greater part of the exhibition is made up of motor-cycles and motor-cars, no fewer than forty different types of motor-voitures being exhibited. Bicycles are not so prominently to be seen and are more or less a subordinate part of the show. Among the exhibitors in the motor section I notice Messrs. Delahaye, Messrs. Gobron et Brillié, Messrs. Darracq, la Maison Parisienne, Stanley, Messrs. De Dion-Bouton, the Decauville Company, Messrs. Renault, the Gladiator Company, and the Georges Richard Company. The exhibition remains open until the 27th inst.

### The A.C.F.'s Defenders of the Gordon Bennett Cup.

It was on Wednesday, the 13th inst., that the Committee of the Automobile Club of France had under consideration the appointment of the team to do battle on the Club's behalf in next year's contests for the challenge cup presented by Mr. Gordon Bennett, and the result of their deliberations and ballot has been the nomination of two teams, comprising in all seven of the finest *chasseurs* in France. In the first line there are MM. René de Knyff, Charron and Girardot, the votes recorded in their favour being thirty-two, twenty-five, and fifteen respectively. In the second rank the nominees are MM. Chasseloup-Laubat, Gilles Hourgières, Albert Lemaitre, and Lavegh. These gentlemen are all veritable kings of the road,

as a glance at a very few of their achievements will prove. M. de Knyff has figured prominently in all of the many races in which he has competed, and his two principal victories have been those scored in the Paris-Bordeaux race, 1898, and Le Tour de France, 1899. M. Charron has had a wonderfully successful career, and among many performances his wins in the Marseilles-Nice, 1898, Paris-Amsterdam, 1898, and Paris-Bordeaux, 1899, are all particularly noteworthy. M. Girardot has always been one of the most consistent drivers in the racing world, and enjoys the distinction of having been second in big races more frequently than any other *chouffeur*. A sort of fatality seemed to follow his steps, and "seconds" in Paris-Amsterdam, 1898, Nice-Castellane, 1899, and Le Tour de France, 1899, may be instanced as his near approaches to victory. More recently he has succeeded in passing the winning-post first, as witness Paris-Ostend and Paris-Boulogne. In the former he "dead-heated" with M. Levegh. The Count of Chasseloup-Laubat will always be remembered as the adversary of M. Jenatzy in the series of electromobile speed tests which took place in the early spring of this year. Previous to this he had won the Marseilles-Nice race in 1897, and this summer he took third prize in Le Tour de France. M. Gilles Hourgières has experienced a lengthy career, as in 1897 he won both the Paris-Dieppe and the Paris-Trouville races. In 1898 he finished second in the Marseilles-Nice event, and gave a phenomenal performance in the Paris-Amsterdam *course*, after experiencing a breakdown in the early stages of the race. This year he has only raced once, viz., in the Paris-Bordeaux, when he was placed fifth. M. Albert Lemaitre has scored victories in Marseilles-Nice, 1897, and in Nice-Castellane, the Nice mile race, and the de la Turbie and Pau-Bayonne races, 1899. M. Levegh gained two brilliant victories this year in the Paris-Ostend and the Bordeaux-Biarritz events, his average time in the latter race being altogether exceptional. Such, then, are the teams as selected by the French Automobile Club, a selection which has been already productive of a considerable amount of newspaper correspondence. Both Debray, who races as "Antony," and Velghe, known in automobile courses as Levegh, have lodged protests against the club's selection, claiming that their own performances in this year's races place them on, at any rate, an equal standing with the present members of the first team. Lemaitre has also stated that he will not accept the position of understudy, and it would appear that the only method of giving satisfaction to the various interested parties is to hold a race among the nominees, and on the result of that race to appoint the two teams. As at present selected the teams emphasise the confidence placed in the Panhard car, for out of the seven names mentioned the first five are drivers of this type of vehicle, the remaining two, viz., Lemaitre and Levegh, conducting automobiles by Peugeot and Mors respectively. The course adopted by the A.C.F. will be watched with interest, as it is, of course, open to question whether they will in any way go back on the original selection.

#### M. Lemaitre's New Racing Car.

IN the course of a conversation that I had with M. Albert Lemaitre the other evening, he told me that the two Peugeot cars now in course of construction for him are of 50 and 100 horse-power respectively, the latter rejoicing in eight cylinders. This will give intending English competitors some idea as to the class of vehicle they are likely to encounter in next year's French races.

#### Public Motor- Vehicle Services in Germany.

*Die Automobile*, of Berlin, announces that a service of motor-cars is about to be started between Veckerhagen and Münden, as also a service of motor-omnibuses between Eichwalde and Smöckwitz, two suburbs of Berlin. At Speyer, too, a company is being formed for a similar purpose, while on April 1st next a service of motor-omnibuses is to be inaugurated between Ilmenau and a number of places in the district.

#### Motor-Car Exhibitions in Germany.

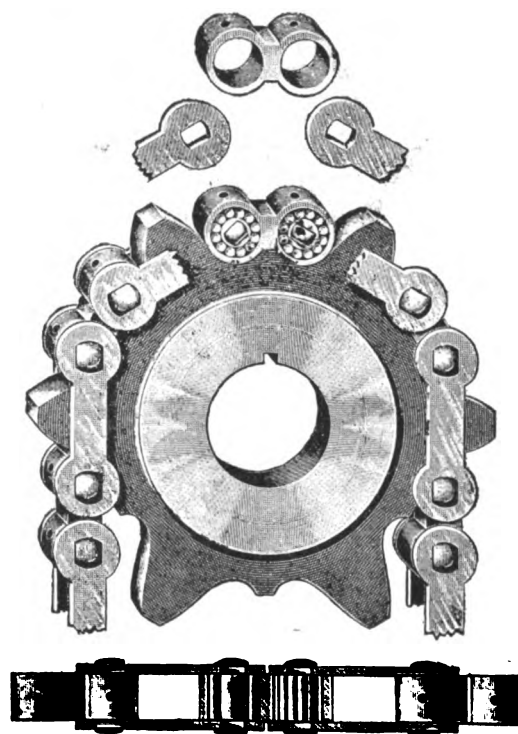
ARRANGEMENTS are in hand for the holding of a motor-car exhibition in Nurembourg in May next year, under the auspices of the Fränkische Automobile Club. The Mid-European Motor-car Club is also contemplating the holding of a second International Automobile Exhibition in Berlin in 1901.

#### Motor-Omnibuses in St. Petersburg.

Two proposals to introduce a service of motor-omnibuses in St. Petersburg have been brought before the municipal authorities of that city. One syndicate projects the starting of services of fifteen-seated petroleum-spirit motor-omnibuses over four different routes - one to be started within a year, and the other three within the following two years. The other applicants propose to introduce fourteen-seated vehicles, also propelled by petroleum-spirit motors, over no less than twelve routes.

#### A ROLLER-BEARING DRIVING CHAIN.

THE "Kaiser" is the name of a new driving chain which has lately been introduced by Herr Robert Kaiser, of the Maschinenfabrik, Barmen, Germany, the feature of which is that interposed between the block and the rivet is a roller-bearing built up of a number of small steel pins, a reduction in the friction and wear on the rivets being of course claimed. The rivets, although round in the centre, have oblong ends, fitting into similarly-shaped holes in the side plates in such a way that



it is claimed the rivets cannot work loose in the side plates. The blocks are of a special form, having a deep central groove into which fit short auxiliary teeth on the chain wheel, arranged between the ordinary teeth. The rollers are not carried in a cage, but are all in contact with each other; provision for lubricating them is made by two small holes drilled in the blocks. The chain is made in a number of pitches ranging from 2 in. to 5 8 in., the diameter of the rollers of the roller bearings increasing with the pitch.

A COMPANY has just been formed in Paris (30, Avenue Niel), with a capital of £20,000, to be known as La Société d'Automobiles et de Traction (système Bardon).

## CORRESPONDENCE.

## THE BENZ MOTOR-CAR.

TO THE EDITOR OF THE *Motor-Car Journal*.

SIR, - Messrs. Hewetson, in your issue of December 16th, advertise "beware of spurious Benz cars." We have little doubt that this is in answer to our advertisement that we are prepared to supply genuine Benz Ideals for £150, delivered in London. We beg to call the attention of your readers to the fact that our cars are genuine Benz cars of the latest pattern made by Messrs. Benz and Co., of Mannheim. We do not in any way contend that Messrs. Hewetson may be sole agents for Messrs. Benz and Co., but they are not the only people who can buy Benz cars, and if we can buy them cheaper, or at least sell them cheaper, it is not Messrs. Hewetson's place to warn the public to beware of spurious articles, which undoubtedly they are doing as a reply to our advertisement. On the contrary, Messrs. Hewetson, who are advertising that they are making certain parts in England, are "on the wrong side of the fence," as it is very questionable whether they have the right to call their cars "genuine Benz cars" when the greater part of the accessories, according to their own advertisement, is fitted by themselves. We, as regards the cars we are supplying, distinctly state that every part



THE P.T.S. CO.'S MOTOR-TRICYCLE WITH LIGHT GOODS TRAILER.  
(For description see issue November 24th, 1899.)

absolutely is made by Messrs. Benz, and in no way touched or spoilt by being handled or patched up in London. Messrs. Hewetson try to contend that their years of experience have made them alter certain parts of the Benz car; we, on the contrary, contend that Messrs. Benz have a better experience than Messrs. Hewetson, and it is far better to have the genuine article as made by Messrs. Benz, which is the outcome of their (Benz's) experience. We, therefore, desire to state we are quite prepared to give any of our customers a written guarantee to the effect that our cars are genuine Benz cars.

Princes Road, Holland Park Avenue,  
London, W.,  
December 16th.

Yours faithfully,  
*The Automobile Association,*  
Limited,  
D. M. WEIGEL.

## MOTOR-VEHICLES IN THE GERMAN ARMY.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR, - As it will no doubt be of interest to your readers, we enclose herewith a translation of an article which appeared in the *Schwabischer Merkur*, Stuttgart, of October 30th last, with reference to trials by the German War Office of motor-vehicles for military purposes. After the extensive trials referred to,

the German War Office has ordered from the Daimler Motoren Gesellschaft five motor-lorries for transport services.

In contrast to the enterprise of the German War Department we would compare our own War Office, to whom we offered in a patriotic spirit to allow a free trial of our two Cannstatt-Daimler lorries, which obtained a gold medal at the heavy trials in connection with the Automobile Club at Richmond in June last, but, we regret to say, our offer was rejected without comment.

We are, yours faithfully,

THE MOTOR-CARRIAGE SUPPLY COMPANY, LIMITED,  
Donington House, Norfolk E. G. LEFEBURE,  
Street, Strand, London, W.C.,  
December 20th, 1899. *Manager.*

[TRANSLATION.]

(From the *Schwabischer Merkur*, Stuttgart, October 30th, 1899.)

## MOTOR-CARRIAGES FOR MILITARY PURPOSES.

"OUR Swabian industry has a gratifying success to record. The military motor-waggons manufactured by the Daimler Motor Company, at Cannstatt, with which exhaustive tests were made with various kinds of weapons by the Ministry of War in the presence of officers of high rank, in the neighbourhood of Quedlinburg and on the Brocken, were also exhibited to the Emperor. The Berlin local paper reports as follows: We congratulate the Daimler Motor Company, which, as is well known, is bringing out the patents of G. Daimler, on this new and grand success. Four benzine motor-waggons have been built experimentally for the conveyance of the baggage of the troops and the speedy conveyance of the latter. They were brought to notice by Major Madlung of the Ministry of War. Before exhibiting them to the Emperor they were carefully tested in the country. The trials began at Quedlinburg and extended over the Hartz territory to Gernrode, Suderode, Thale, and Blakenburg. The baggage-waggons, the largest of which was loaded with 45 cwt., had not only to travel over the good but steep mountain roads to Harzgerode, Hexentanzplatz and Friedrichsbrunn, but had also to go over stony and sandy field roads and loose ploughed land for long distances. The baggage and two passenger-waggons, heavily loaded, undertook the daring feat of crossing the Brocken from Quedlinburg over Hexentanzplatz, Treseburg and Schierke, in which they successfully competed with the Brocken Railway. From the summit of the Brocken the four waggons performed the journey over Ilseburg and Halberstadt to Magdeburg in six hours. On the second day, at midday, they reached Berlin. A large number of officers accompanied the trial journey from the beginning to the end. As already mentioned above, the driving power was a benzine motor. The baggage-waggon has the appearance of the goods van of a train. The passenger-waggon is similar to the motor-cabs in use in Berlin. The Emperor ordered the waggons to drive in front of the New Palace and made enquiries of Major Madlung as to their construction. It is said that the troop-waggon intended for quick service can travel forty kilometres per hour. Mr. von Gossler, the Minister of War, and General von Hahnke were present at the inspection. The Emperor was not sparing in his praise of the unusual performance."

A MOTOR-CAR EXHIBITION is, it is announced, to be held in Amsterdam from the 9th to the 18th March next.

Mr. EDGE's resolution at the meeting of manufacturers at the Holborn Viaduct Hotel, E.C., was seconded by Mr. McTaggart not by Mr. McLachlan, as given in our report last week.

MESSRS. DE DION, BOUTON, AND CO., of Puteaux, Paris, are about to issue an excellent map of the roads in France. It will give the distances in kilometres and height of the hills, and should prove useful to all motor-cycle tourists in France.

THE German postal authorities are experimenting with an electrical postal van, built by the Gesellschaft für Verkehrsunternehmen, of Berlin. The van is running a distance of 30 kilometres per day, and is said to be giving satisfactory results.

ACCORDING to a telegraphic dispatch Fire Commissioner Seammell has sailed from New York for Cuba, taking with him Fire-Chief Croker's now famous automobile, which for a week has been used in going to fires. It is the first vehicle of the kind ever shipped to Cuba.



## THE FIRST MOTOR-CAR RIDE.\*



SIR GOLDSWORTHY GURNEY, the well known English inventor, early in the century succeeded in perfecting a motor-carriage, run by steam, to the point of exciting serious attention and comment. Even the *Britannic Review*, in one of its issues of 1829, acknowledged a discreet possibility in the new idea, in the following measured terms:—“This

carriage, now perfected in all its parts, has been examined by a large number of enlightened persons. It has been put in movement in their presence. The simplicity of construction, its rapidity, the facility with which it is guided, and, above all, the evident security, have all been noted. The result of this experiment has convinced the most incredulous that the new invention will obtain the favour of the public; and that the application of the principle on which the vehicle rests will soon extend to all sorts of carriages, and thus become a universal usage.”

But in 1830 the same *Review* questioned in less general terms the particular difficulties of the scheme. “The great obstacle to the introduction of steam carriages was the weight of the machinery and the resistance opposed thereto by the inequalities in the surface of roadways. Our best roads present a resistance to the progress of these vehicles, because at each rise in the ground a double or triple expenditure of force is necessary to preserve headway. We should have machines of great energy which do not create a resistance equal to their weight.”

An account of a ride in the Gurney stage coach was published by *The United Service Journal* (1829). The impressions of one of those who took part in this unique journey are set down as one might who made his first voyage in an air-ship or submarine boat at the present time. Here is the thrilling story:

“We numbered four in a coach attached to the steam carriage, and we had travelled without experiencing any difficulty or mishap as far as Longford, where they were repairing the bridge built over the Cambria.

“On this bridge was a large pile of bricks, so high as to conceal what was happening on the other side. Precisely at the moment we began to cross the bridge the mail-coach from Bath arrived at a brisk trot on the other end. As soon as we perceived it we shouted to the driver to take care; but, as he was not aware of the extraordinary vehicle he was going to meet, he paid no attention to our warning and did not slacken speed. To avoid a collision, Mr. Gurney guided our steam carriage into the pile of bricks. Some damage to our apparatus resulted, but was repaired in less than a quarter of an hour. As to the horses of the coach, they had taken the bit between their teeth, and had to be cut loose.

“When we entered Reading it was 8.20, and we remained two hours to repair one of our wheels. Mr. Gurney had noticed that a certain small chain of the action was broken; this accident was, without doubt, the result of what had happened on the bridge at Longford.

“We left Reading only at 10.30, and arrived at Melksham toward eight o'clock in the evening. We had made about six miles an hour, including stops.

“It must be remembered that our principal object had been to avoid mishap; and to that end we had provided in advance an abundant water supply. In order to incur no risk, we had made a rule to run no more than four miles without taking water. Thus we stopped whenever we noticed water facilities on the route, often when we had made but two or three miles, in the fear of missing it farther on. We were altogether eight travellers, and as many engineers and workmen, for we were followed by a wagon which carried our fuel.

“No smoke was visible when we burned coke, though coal,

which otherwise made a good fire, gave it out in a large amount. At Devizes the coke which we procured proved to be of so bad a quality that we were obliged to use coal. Smoke began to pour out, and, as night was falling on our arrival at Melksham, bright sparks were seen flying from the smokestack. We were agreed that these sparks might be of danger along the way if we should meet a load of straw or a hay-wagon, but we were able to avoid danger by returning to the use of coke.

“Upon our arrival at Melksham, we found that there was a fair in progress, and the streets were full of people. Mr. Gurney, who combines with his inventive genius the most amiable qualities of heart, made the carriages travel as slowly as possible, in order to injure no one. Unfortunately, in that town the lower classes are strongly opposed to the new method of transportation. Excited by the postillions, who imagined that the adoption of Mr. Gurney's steam carriage would compromise their means of livelihood, the multitude that encumbered the streets arose against us, heaped us with insults, and attacked us with stones. The chief engineer and another man were seriously injured in the head. Mr. Gurney feared we could not pursue our journey, as two of his best mechanics had need of surgical aid. He turned the carriage into the court of a brewer named Ales, and during the night it was guarded by constables with the authorisation of magistrates. The next day we resumed the journey to Bath under escort.



SIR GOLDSWORTHY GURNEY'S VEHICLE.

“In Mr. Gurney's opinion, the machine was in better condition and made more headway on our return journey, which is proved by the fact that we made it in four hours' less time. The nearer we approached to the end of our journey, the more rapid became our speed. The road was, however, exceedingly muddy from a heavy rainfall.”

A few notes taken on the return journey shows us to what subterfuges the inventor was driven to avoid a recurrence of the disagreeable events of the first day:

“We were six miles from Devizes at three o'clock in the morning. . . . Mr. Gurney had passed through the town of Melksham in the night with horses, so as to give the roughs no excuse for rioting. The machinery was set to work as soon as we were well on the outskirts. At Devizes Mr. Gurney put on all his speed to escape the popular aggression of the manufacturing districts. Our course was so rapid that the horses of the post carriage which accompanied us were quite winded.

“At the foot of the hill of Devizes we met the mail-coach and another carriage, which stopped to see us ascend the steep height. We mounted rapidly. The travellers in the coach, delighted at the unusual spectacle, encouraged us with shouts of applause.”

To have assisted at the experiment of Gurney's steam carriage was, in those days, almost a title to glory. These carriages became speedily one of the curiosities of London.

\* By John Grand Cartaret, in the *Automobile Magazine*.

Foreign travellers who crossed the Channel and printed accounts of their journeys, did not fail to devote a chapter to the new means of locomotion. Jean Baptiste Jobard, a Belgian savant and economist, was of the number, and so were Mr. Cuchetot, St. Germain Leduc, and C. G. Simon, three prominent scientific writers of that time. M. Jobard's impressions, as noted down at the time, are worthy of record:

"My first visit in England was to the starting station of Sir Goldsworth Gurney's steam omnibus, which, during the last fortnight, has been running between London and Bath. This carriage, which can accommodate thirteen persons, does not differ materially from other stage-coaches, nor has it had any serious mishap as yet. For my benefit it manœuvred back and forth over the street pavement and later on the smooth macadam of the highway, without any apparent difficulties of guiding. The drivers of other stage-coaches are agreed that the thing is a success and that before long it will do them much harm. After the coach had ceased running for the day, the engineer, Mr. Gordon, showed me the mechanism in detail. When he showed the engine and boiler I saw that they had been injured by the excessive heat of the fire, and that the front wheels had suffered so much from the same cause that it was necessary to make repairs.

"A common reproach against these carriages is that they frighten horses, but a Parliamentary enquiry has proved that this reproach is not well founded and that most accidents were due to the carelessness of the coachman. A curious thing is that the Society for the Prevention of Cruelty to Animals has espoused the cause of this new system of locomotion for the purpose, so it is said, of protecting horses against the great strain that has been put upon them by the increased speed demanded from the stage coaches of to-day." The concluding words of the author are as effective to-day as they were then: "Napoleon made fun of Fulton and his steamships. Our present rules would do well to avoid falling into a similar contempt of the modern steam carriage."

MESSRS. ADAMS AND CO., of Lowestoft, are making a speciality of motor parts, including sets of castings, friction clutches, forgings, etc.

MR. J. S. CRITCHLEY, manager of the Daimler Motor Co., presided at the Fourth Annual Dinner of Yorkshiremen in Coventry on Saturday last.

THE Hull and District Cycle Trades Association, Limited, will hold a cycle and motor show in the Assembly Rooms, Hull, from February 5th to 10th next.

THE dissolution is announced of the firm of C. Rouxel and Co., 50, Rue du Château, Boulogne (Seine), makers of the Rouxel motor-voiturette recently described in this journal.

THE Spalding-Bidwell Company, 29, West Forty-second Street, New York, are, according to the *Wheel* of New York, in the market for a line of motor-tricycles. This company is located on one of the leading thoroughfares of the city, and wants to connect with either American or European houses.

THE Rural Council of Hollingbourne (Kent) is the latest body to resolve to support the recommendations of the Yeovil Rural District Council relating to the reduction of the maximum legal speed of motor-cars from twelve to ten miles an hour, and when turning sharp corners to six and four miles according to weight.

MR. C. E. SHAW, M.P., who presided at the annual meeting of the Star Cycle Co., Limited, at Wolverhampton, last week, stated, with regard to the motor-car business, that it was satisfactorily developing, and, as far as could be seen, there would be a fair rate of profit per motor-car turned out.

THE Woods Motor Cab Co., of Chicago, has filed articles of incorporation at Springfield, Ill., and has been granted a license by the U.S. Secretary of State. The capital is £100,000. The company will manufacture and operate automobiles. A company is also being organised at Wilmington, Del., to operate an automobile cab service through the principal parts of the city. It is expected that six cabs will be in service by the 1st of the year.

## THE NEW COURIER "MOTORET."

WE are enabled this week to illustrate the New Courier "Motoret" exhibited at the recent National Cycle Show, by the New Courier Cycle Co., Ltd., of Alexandra-street, Wolverhampton. Fig. 1 shows the vehicle adapted to carry two persons; and Fig. 2 illustrates the same arranged as a parcels carrier. The two machines are identical, so far as the motor and transmission gear are concerned. The frame is of rectangular tubular construction; the motor—a 2½-h.p. De Dion—which is located about the centre, drives, by spur wheels, a

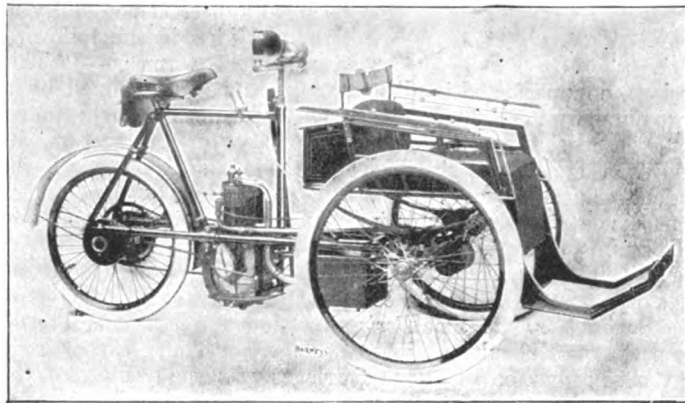


FIG. 1.

small counter-shaft, which is connected to the rear axle by chain gearing. A feature of the machine is that no pedals are provided. At the rear hub a special band brake free-wheel device is provided. This is operated by the left-hand foot rest, which is also connected with a hand lever. By means of this device the engine can be instantly put out of gear with the single rear road wheel, thus enabling hills to be "coasted." To start the motor, the band brake of the drum is applied, the electrical current switched on, and the machine pushed a short distance; immediately the motor is in operation the band brake is released, thus allowing the engine to run free until the driver is ready to start. After mounting, the left foot pedal is pressed down, applying the band brake device at the rear, and completing the connection between the motor and the rear wheel.

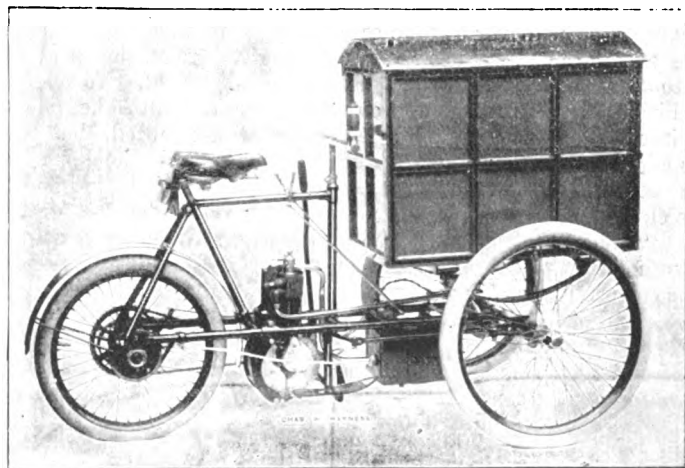


FIG. 2.

In descending hills the gear provides an exceedingly simple form of "free wheel," and thus both motor-car spirit and electricity can be largely economised, as the motor under such circumstances is entirely at rest.

In view of the fact that the law limits the speed at which automobiles may travel upon English roads, the company sees no object in producing a car capable of a very high rate. The "Motoret" is therefore arranged to attain a speed of from

fifteen to sixteen miles per hour if desired. Down inclines the rate is practically in the hands of the driver, and up any but the worst hills the speed does not, the makers claim, seriously slacken. The brake arrangements are ample, so that coasting can be indulged in with absolute safety. Steering is controlled by a bar with vertical grips, on the top of the right one of which the contact breaker is mounted in such a way that it can be moved by the thumb, thus affording a rigid grip in place of the one usually employed on tricycles. The weight of the machine is stated to be a little over 2 cwt.

## MIDLAND MOTOR NOTES.

By "HERCULES."



### The Visit of the Chinese Minister to Coventry.

THE motor-car demonstration at Coventry, on the occasion of the visit of the Chinese Minister last week, has been most favourably commented upon by the Press in the Midlands. As I stated last week, the ride through the city in which Sir Chihchen Lofengluh participated was a convincing proof of the capabilities of the various types of motor-vehicles, the ease with which they can be driven, and the enjoyment which can be obtained even from the first ride. I venture to quote the following reference to the trip. "Our visitors were quite delighted with their motor-car ride. All those who took part in the ceremony were afforded an opportunity of appreciating the great control which the drivers have over the cars. The brake power is enormous, and is easily applied, and the vehicles appear to respond to the slightest touch. It was an object lesson for many who may previously have entertained some amount of prejudice against what is certainly the coming form of locomotion."

### The Skill of Motor-Car Drivers.

As to the skill of drivers of motor-vehicles, I had an experience which has strengthened my confidence not only in the ability of the drivers, but in the ease with which the cars can be controlled. Whilst driving through Coventry in one of the Motor Manufacturing Company's cars last week, we encountered a large provision van which was proceeding in the same direction as our car. The van was running along the centre of the road, and there was just room on either side to pass. Our driver veered the car round with the idea of passing the van, and we had just got level with the back wheel when the driver of the van pulled his horse round in front of the car. With remarkable promptness, our driver put on the brake, and the car was brought to a dead stop. Everyone who saw the occurrence, as well as those in the car, expected to see an upset, and the result was an agreeable surprise.

### An Enterprising Birmingham Concern.

MESSRS. RALPH GILBERT AND SON, of John Bridge Street, Birmingham, are among the few firms who are able to build carriages and motors throughout. Mr. Gilbert has been connected with the motor industry for the past seven years. For three or four years he was in the United States, and became acquainted with many of the labour-saving methods employed by our enterprising cousins across the seas, and the special machinery employed by them. As a result, he has introduced special automatic machinery into his extensive works. Recently Messrs. Gilbert and Son had a dozen motor charrs-à-banc in hand for London, and when I called I saw a number of motor-cars in the course of completion. The firm are now reaping the benefit of their extensive experiments in motor-propulsion, for they have been very busy for the past year both in the construction of motor cars and other vehicles.

### Motor-Cars in Leicester.

THE public motor-car service at Leicester has become very popular, and the competition with the tram and bus services is being carried on with great success. Further, the daily object lessons of the motor-vehicle as a speedy and easy "carrier" have greatly impressed the heads of one or two large business houses, and I should not be surprised at any time to see them adopt motor-vehicles for trade purposes. I believe that it only wants one or two houses to do so, when their example will be quickly followed by others.

### Technical Classes in Coventry.

IN their annual report the Coventry Technical Instruction Committee state:—"Concerning the immediate needs of the locality, your committee may mention that they have recently been asked to provide instruction in the subject of road carriage building, with a view of assisting the motor-car industry. After most careful consideration, however, it has been felt to be imperative to relegate the matter to a period when the financial position is more sound." I hope that period will be not long delayed.

THE Canda Mfg. Co., of Cartaret, N.J., is preparing to go into the manufacture of motor-cycles extensively, using the well-known French De Dion motor.

THE Hasbrouck Motor Company, 68, Broad Street, New York, are now placing on the market petroleum-spirit motors for vehicle and stationary uses in sizes of 2, 4, 6, 8, and 10 h.p. The Hasbrouck motor is described by the makers as having no air valves, as compact, balanced, noiseless, simple, and odourless. At present the company are also building two styles of automobiles, a runabout and a surrey, speeded to 20 miles per hour, and capable of climbing a 20 per cent. grade.

THE Daimler Manufacturing Company, Steinway, L. I., have secured the American rights under the Panhard-Levassor patents, and will manufacture Daimler and Daimler-Phenix motors and vehicles under the well-known Daimler and Panhard-Levassor systems, including petroleum-spirit cabs, which will be operated in New York and other cities in connection with the electric cabs of the Electric Vehicle Company and their allied transportation companies.

AN experiment was made on November 17th in the vicinity of Atlantic City, N.J., which will interest those watching the development of the automobile, and especially the electric vehicle. An automobile in charge of Messrs. Hiram T. Maxim and J. B. Entz is asserted to have covered a distance of 100 miles in 7h. and 44½min., including rests and stops, which amounted to about 20min., with but one charge of the battery. It is said that, so far as known, this beats the record claimed in France. Including the passengers, the total weight of the vehicle was 2,500lb.

ACCORDING to a report received through the Foreign Office from H.M. Embassy at St. Petersburg, the Russian Customs Department has issued a supplement to the Circular, No. 11,664 of the 14/26 June, to the effect that two-wheeled vehicles, used either as bicycles or motors, are to be cleared under point 3 of section 173 of the Customs Tariff, duty Rs. 18 each. If the vehicles are completed with finished upholster work, an additional 20 per cent. will be charged in accordance with the observation to section 173.

THE Board of Governors of the Automobile Club of America has decided to secure headquarters at the Waldorf-Astoria, New York. Accordingly a suite of rooms has been leased for a year, until the arrangements for a permanent club house are made. Propositions from various parties scattered about the city who wish to store and care for automobiles have been accepted, so that the motor house will not be necessary for the present. Permission has been given the Club to use Astor Court, a private way, where hansoms and other vehicles are excluded, thus giving the members of the club the advantages of a private entrance to the Waldorf.

## THE JUDGES' REPORT ON THE 1899 TRIALS OF HEAVY MOTOR-VEHICLES AT LIVERPOOL.



THE copy of the report of the judges appointed by the Liverpool Self Propelled Traffic Association in connection with the trials of heavy motor-vehicles in July and August last, has come to hand this week. The report, which was presented at a meeting of the Association on Tuesday evening—an account of which appears on another page of the present issue—is a bulky volume of over 130 pages, and, under the editorship of Mr. E. Shrapnell Smith, the hon. secretary, has been drawn up in good style, accompanied as it is by numerous illustrations and diagrams of the vehicles which took part in the trials. The report opens with an account of the origin of the competition, followed by the conditions and general arrangements regarding the same. The next forty pages are devoted to a very complete illustrated description of the competing vehicles, while the account of the trials themselves and of the results obtained, which were fully dealt with in these columns at the time, occupies over fifty pages. The report ends with the "conclusions" of the judges—Messrs. M. C. Bannister, E. R. Calthrop, S. B. Cottrell, H. S. Hele-Shaw, and Boyerton Redwood, which we reproduce below.

### General Efficiency.

The vehicles were generally superior to those submitted for trial last year, and can be regarded as having arrived at such degrees of mechanical excellence and efficiency that their use, in practical trade operations, will be attended with success and economy as compared with horse traction.

**Town Haulage.** The vehicles were suitable for trade purposes in Liverpool and neighbourhood, and merit recommendation to cart and team owners, and to others requiring to transport heavy loads. The effective speed, on sett-pavement, should be double that of horse-drawn lorries carrying equal loads, and the difficulties at present experienced in ascending or descending hills are overcome by the motor-wagon.

**Distance Haulage.**—The vehicles were capable of competing advantageously for the transport of loads varying from four up to six-and-a-half tons, over distances up to forty miles, over which distance a working day of twelve hours should suffice for collection, transport, and delivery. This assumes railway rates to correspond with those in the Liverpool district.

**Maintenance.** It seems necessary at present, where work is conducted over roads similar to those traversed during the trials

and at speeds of from five to six miles an hour, to allow about 15 per cent. per annum on the prime cost of motor-wagons of the admirable design, workmanship, and material exhibited in the two to which gold medals were awarded. The allowance may rise to 30 per cent. for vehicles the construction of which has not been carried out in the same adequate manner. Many sources of temporary breakdown which gave considerable trouble during the 1898 trials have been removed, and the uncertainty of service consequent on these referred to in the first report has been decreased. The judges suggest still better and more thorough attention to lock-nuts, collars, split-pins, and the effective keying of wheels, all of which, in view of continued service, are well worthy of a certain expenditure of time and money. Such expenditure might prevent the breakdowns which at present are more likely to occur in self-propelled vehicles running on common roads than under any other mechanical conditions. The vehicles which competed could be relied on for regular working subject to periodic examination, maintenance in thorough working order, and to small improvements in the details above remarked upon. This is, of course, only adopting the recognised principles of all

locomotive practice. The imperfections of common roads are the principal causes of the heavy depreciation and maintenance charges, and of whatever element of uncertainty remains attached to any service of motor-vehicles.

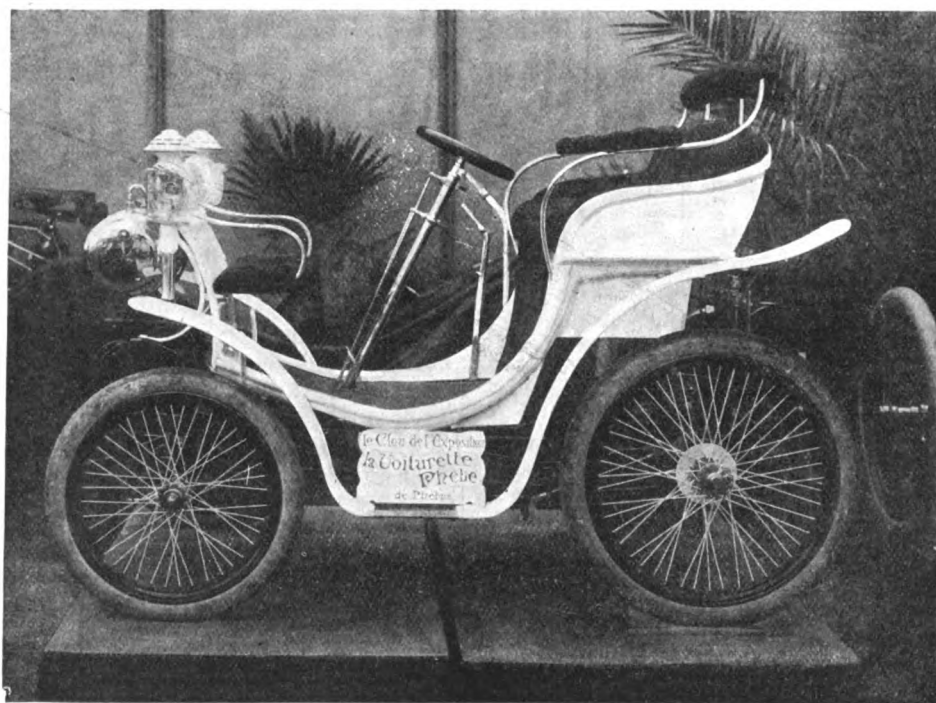
**Control.**—The general control, starting, steering, and stopping of the vehicles, when working on the road and amongst traffic, was superior to the best types of horse-drawn vehicles.

**Manœuvring.**—The facility with which motor-vehicles reverse is of considerable importance, and in this respect the competing vehicles proved to be quite satisfactory. They were able to work into and out of an en-

bayment of one and a-half times their own length and draw up close to and parallel with the wall of the bay, but this particular manœuvre proved, in the case of some of the vehicles, slightly more tedious in its performance than with horse-drawn vehicles. They are capable of going anywhere that horse vehicles are ordinarily required to go.

**Hill-climbing.**—The tests at Everton demonstrated that the hill-climbing powers of the vehicles, including stopping and starting on a grade of 1 in 9 (up and down), were greatly superior to those of horse-drawn vehicles.

**Weight Distribution for Adhesion.**—The importance of placing as much as possible of the weight of the vehicle upon the driving axle cannot be magnified, and is seriously commended to the immediate attention of manufacturers. No vehicle has yet come before the judges which would not, under some conditions, have been more efficient had more adhesion been available. The greater propulsive effort which the engines were in all cases capable of providing could not be effectively applied, in several instances, because the distribution of weight, when the wagon was light or when it was laden, and sometimes in both cases, was not sufficiently concentrated upon the driving wheels.



MR. F. F. WELLINGTON'S PHÉBUS AUTOMOBILETTE.  
(For description see issue November 24th, 1899.)



*Operating Gear.*—The number of operations requiring attention from the drivers were generally less than last year, and there were more satisfactory arrangements of an automatic nature for regulating and controlling the vehicles. All taps, levers, valves, etc., should be either in front or to one side of, and not behind, the driver, and should be simplified and disposed for convenient manipulation. It is satisfactory to note that several of the vehicles were so well designed and arranged as to admit of an unskilled driver being entrusted with their management.

*Steering.*—It is highly important to have absolute control of steering by means of a wheel and gear, and to have no play or slackness in the connections. Although direct tiller steering is inadvisable for heavy motor-traffic, the judges had occasion to observe that, on the other hand, evils might arise from the action of a wheel steering-gear if it were too slow. Such gear should therefore be as rapid in action as is consistent with reasonable physical exertion on the part of the driver.

*Gearing and Transmission.*—Both chain and tooth transmission were employed, and each has special advantages. It is undesirable to pronounce in favour of either system. Duplicate gear wheels should be carried by all motor-vehicles for heavy loads which use tooth transmission. The conclusion arrived at in the first Report, that "at least two speed gears, or an equivalent reserve of power, are essential to successful working," received ample confirmation.

*Fuel.*—Solid fuel, particularly coke, is at present more economical, liquid fuel being at a serious disadvantage where costs per net ton-mile are a determining factor. Some better means should be adopted to prevent or intercept the particles of dust and soot which up to the present cause considerable nuisance, particularly when the boiler is steaming hard.

*Condensers.*—Where water is easily obtainable at points not more than fifteen miles apart, it is questionable if a condenser is of any advantage unless its efficiency is very high. It is to be noted that three of the vehicles using condensers did not lubricate their cylinders, and this might prove a source of excessive wear in the cylinders. Probably, the introduction of effective filtration or graphite lubrication will meet this objection. Filtration cannot, apparently, with motor-vehicles, be yet relied upon as effective in preventing lubricants passing into the boiler.

*Speed.*—Five miles an hour, as permitted by law, seems at present a suitable limit for very heavy traffic, since at higher speeds deterioration of the frame-work and wheels through vibration and shock rapidly occurs. If new inventions permit of higher speeds being attained without injury to the vehicle, or risk of endangering the safety of the public, the possibilities in the development of motor-traffic for cheap, regular, and fast transport of goods appear to have scarcely any limit.

*Future Competitions.*—In any future competition, it is advisable to stipulate—(a) that no vehicle carrying less than four tons of freight be allowed to take part; (b) that the boiler, tanks, and oil baths shall be fitted with drain-plugs at their lowest points; (c) that the cross-section of any pipe connecting two tanks shall be not less than that of the pipe provided for filling the first tank of the two; (d) that provision be made to lock the compensating gear.

*Performance.*—Four tons of load, carried on the legal tare of three tons at the legal speed of five miles an hour, is the maximum performance that has so far been obtained satisfactorily by a four-wheeled vehicle, but a load of seven tons can be carried if a single trailer be used.

*Wheels.*—The wheels and tires were generally efficient, but concentration of heavy loads upon the present small area of wheel contact is a serious difficulty in the problem of goods transport by motor-vehicles, and constitutes probably the chief mechanical cause of the slow progress made.

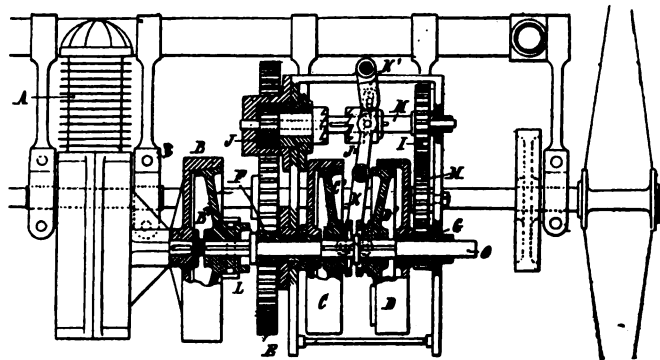
*Legal Restrictions.*—The difficulties imposed by meeting the limit of three tons tare under the Locomotives on Highways Act, 1896, were again serious drawbacks to ideal construction. The strength of frames and working parts, the area of bearing surfaces, the width of wheel-tires, the available platform area, the stoutness of the platforms and wood-work generally, and the diameters of axles and shafts, were consequently reduced below what is compatible with a satisfactory life in commercial work. The judges are unanimously

of opinion that the raising of the limit of tare to four tons is eminently desirable in the interests of proper economy and efficiency, and they are further of opinion that such an increase in the tare weight is for the safety of the public and in their interests.

*Commercial Requirements.*—The judges hold strong views that the requirements of trade in large manufacturing and distributing centres cannot be met with the load limit of four tons, which these and the previous trials clearly indicate as the working maximum. To satisfy such requirements fully, it is necessary to carry from six to ten tons on one platform. It is clear to them that the heavy motor-waggon industry cannot, in this country, attain its legitimate proportions until the present restrictions are modified so as to enable manufacturers to supply vehicles capable of carrying loads of the same weight and bulk as those now drawn by horses. Self-contained vehicles capable of transporting regularly loads of from six to eight tons at from four to five miles an hour, and up to ten or twelve tons at reduced speeds, would shortly be available were a four-ton tare sanctioned.

## THE CHERRIER TWO-SPEED GEAR.

THE latest two-speed gear to be brought before the notice of builders of motor-tricycles and quadricycles and users of the same, is the "Cherrier," introduced by Messrs. Dalifol and Thomas, of 18 bis, Faubourg Poissonnière, Paris, and of which detail an illustration is given herewith. The motor-shaft terminates in the female portion of a friction clutch *B*, the male part of the same *B'* being carried on the end of a shaft *O* in the same line. On this latter shaft are mounted two friction clutches



(*C*, *D*), the male portions of which *C'*, *D'* are controlled by a single lever *K* in such a way that only one of the clutches can be in gear at a time. For the high gear, the two parts of the clutch *C* are brought into contact, the power of the motor being then transmitted through the pinion *F* to the large gear wheel *E* on the tricycle axle. For the low gear the lever *K* is pulled over to the opposite side, thus throwing out the clutch *C* and bringing the two parts of the clutch *D* into engagement. In this position the power is transmitted to the wheel *E* through the pinions *G*, *H*, *I*, and *J*. The spur wheels *F* and *J* are always in mesh with the wheel *E*, they being so arranged that as one is driving the other runs free, and *vice versa*. The gear is entirely enclosed, and is said to occupy but a very small space.

WE have had the privilege of seeing a new motor-vehicle which is being built for the Automobile Club's 1,000-mile trial. The motor has only one cylinder, but is capable of giving 12 h.p. The car weighs less than 6 cwt., and has many remarkably novel features.

THE *Horseless Age* of New York has just got out a special "Steam Boiler" issue. The entire issue is devoted to a consideration of steam-driven vehicles, especially to boilers suitable therefor, and is well worthy of the perusal of all interested in steam automobiles.



## THE DAIMLER MOTOR COMPANY.



THE third annual meeting of the shareholders of the Daimler Motor Company, Limited, was held on Monday, at the Holborn Restaurant, E.C., under the presidency of Mr. E. H. Bayley, J.P. (the chairman of the company).

The Secretary (Mr. John Ware) having read the notice convening the meeting,

The Chairman said: I have now to move the adoption of the report. I do so with some satisfaction, as this is the first report that has been presented to you which shows a profit on the trading. The report presented to you in June, 1898, showed a loss of £1,423, and the one for the previous year a loss of £4,525. We now show a net profit of £1,045, and I hope to satisfy you, from the facts and figures I shall submit, that now that the corner has been turned the business will be worked at a substantial profit. When looked into carefully, the profit and loss account will be found to be more encouraging than appears at the first glance. There are four items of expenditure, amounting to £2,896, which are quite exceptional, and will certainly not recur. The shareholders are entitled to the fullest explanation of these items. In the first place, you will find in the account a sum of £1,612 for compensation claims and allowances. Of this sum £816 is in connection with a deplorable accident that occurred in the Harrow Road, when one of our cars turned over, killing the driver and a Major Riches, and injuring three other passengers. Damages to the amount of £1,470 were claimed. No fault was to be found with our carriage, and the question was solely whether our driver was to blame or not. A gentleman who was at that time a member of your board promptly printed and circulated an article headed, "A Terrible Object Lesson," in which he laid the entire responsibility on the shoulders of our driver, Mr. Sewell. Our solicitors at once advised us that, after this admission by one of your directors, it would only be incurring useless expense to defend the action, and the only course open to us was to compromise on the most favourable terms we could obtain. I was deputed to confer with the other side, and settle on the best possible terms. I met the opposing solicitors in a conference with our own solicitors, and settled the action for £655, being less than half the amount claimed. Another part of this item is £386 paid in connection with a collision between one of our cars, being driven by our works manager, Mr. Critchley, and another car. The question was simply whether our manager was to blame or the driver of the other car. The case went into court, and the same director to whom I have already referred went into the witness-box and stated that, in his opinion, our manager was to blame. I need not say that the verdict was given against the company; it cost us £386. Accidents of this sort are not likely to recur, and, if they do, the directors are not likely to commence the proceedings by giving the company away. The rest of this item of £1,612 consists of £410, being claims for alleged bad workmanship and breakdowns.

After the great attention which has been given this year to improving the manufacture of our carriages, to which I shall refer more fully later on, this item is not likely to occur again. Another exceptional item is £533 for the committee of investigation. The labours of these gentlemen were extremely valuable, and extended over a long period, and it was of course necessary for them to engage legal and professional assistance. No necessity will arise for another committee of investigation. The next item is the launch "Daimler," £680. This was a large launch built on speculation, and placed on the Clyde, costing £1,200. It was destroyed by fire, and the amount was recovered from the insurance company. This £680 was for the wages of the men employed in working the boat. This was altogether a bad speculation, and will not be repeated. The rest of this item is £71, being the balance of the total loss of £800 on the Eel Pie Island, to which must be added £55 for law expenses. The company is not likely again to indulge in such expensive luxuries as Eel Pie Island. Had it not been for those four items of expenditure of an exceptional and accidental character, for which the present board are in no way responsible, the net profit would have been £4,000, a sum sufficient to have enabled us to pay you a dividend of 4 per cent. The main reason, however, for the net profit not being larger still is set forth in the report. Towards the close of last year the late board discharged more than one-half of the skilled men, and worked the factory at half-time. Heavy establishment charges were going on all the time. Very few orders were coming in, and no special effort was apparently being made to obtain them. The consequence of this was that in the spring, when the busy season commenced, there was no stock of carriages to submit to customers, and, what made the matter worse, there were no catalogues from which to obtain orders. This was the critical position of affairs which the present board found when they came into office. The opportunity of turning the busy season to profitable account was gone for the present year. We lost no time in at once engaging more competent travellers and representatives, and got out two new catalogues and circulated them widely. The result of the changes made was that the orders went up by leaps and bounds. In the month of March the orders had dropped to the miserable amount of £691. In the month of July they had risen to £10,247, and this satisfactory increase is still maintained. The orders now coming in are more than double the average for the corresponding period of last year. Unfortunately, motor carriages take many months to build; so that the benefit of this increase of prosperity has not been felt in the financial period we are now reporting on, but will be manifest in the next.

In order to cope with the large access of orders strenuous efforts have been made to get back the men who had been discharged, and who, in

consequence of the engineering boom causing a great demand for skilled labour, had obtained work in all parts of the country; and it has taken us eight months to get them back. We have at last succeeded, however, and we hope that, by working as far as practicable both night and day, we shall work off the orders and be prepared for a still more prosperous result next year. It is right to mention, also, that improvements in the design and workmanship have had much to do with increased demand for our carriages. Acting under the advice of our consulting engineer (Mr. Straker) the design of the larger carriages, which in the past has led to building of costly failures, has been radically altered, and many minor, but valuable, improvements have been introduced into the construction of the smaller chain cars. The public have been quick to appreciate the advance that has been made. Up to recently, it has been generally admitted that the French cars were superior to those built in this country, but this can no longer be truthfully asserted. As an interesting illustration of this fact, it may be mentioned that a gentleman of great influence, and an expert of considerable experience, who had ordered a French car, after a trial of our latest machine cancelled his order for the French carriage, and ordered one of ours instead, expressing the opinion that our carriage was the best. As our carriages are lower in price than the French ones, there is reason to hope that the large orders at high prices which now go to France will in future be diverted to the Daimler Company. As a further illustration, I may mention that we are now for the first time receiving orders for racing cars to run in competition with the best foreign vehicles in the Continental trials, and both we and the owners are sanguine as to the result.

To return to the accounts, you will probably have noticed an item of £312 for directors' fees. This is an amount standing to the credit of the late board, which has not been claimed by them, but in the meantime is placed to a suspense account. I refer to this especially, as an honourable proprietor, misled by his want of acquaintance with book-keeping, has written denouncing the present board for their rapacity in receiving such an amount. All that we have received is a modest portion of the preceding item in the account. The next item is £34 for auditors' fees. The auditors' fees are only thirty guineas per annum, which is too low a figure for the large amount of work that has to be done. A proposal will come before you for an increase of the remuneration, which it is hoped that you will favourably consider. I may also call your attention to the item of £944 for advertising, exhibition expenses, and catalogues. The expenses of attending exhibitions is becoming constantly more onerous. Town councils and others, not connected with the trade, arrange for exhibitions, which we are obliged to attend at considerable expense if our competitors do so. It has been felt that the manufacturers should be organised so that united action, both as to exhibitions and the prevention of undue competition, and other matters for the good of the industry generally, may be taken. The Automobile Club, which has done good service to the cause, kindly called a meeting to consider this matter, and an independent meeting, called by a committee of the manufacturers themselves, has also been held. I attended both meetings, in order to be in touch with what was going on, stating, however, that I did so as an individual and not as representing this company. Another proposal has been made to the effect that the trade should be organised under the auspices of the London Chamber of Commerce. The matter has not yet come before us officially. A foolish rumour—too absurd for contradiction—has been circulated to the effect that this company had in this matter identified itself with some scheme, of which personally I have no knowledge, for company promotion. I need only say that when a proposal for a federation or association comes officially before us the various schemes will be carefully considered on their merits, and you may rest assured that the subject will be dealt with by your board solely in the interest of the Daimler Company. I may also call your attention to the item of £160 sinking fund, for the redemption of Coventry leases. Our leases have sixty years to run, and an investment of £80 per annum would suffice, according to the actuarial calculation, to extinguish the sum. We have, however, thought it prudent to set aside £160 per annum to be on the safe side, and provide for possible dilapidations. The sums written off for depreciation of £2,937 are ample, being £1,000 more than the amount for the previous year. The Leather-shod Wheel Company's shares have been written off altogether, and the British Motor Company's shares have been written down to five shillings per share. As the latter shares are to-day quoted at ten shillings per share, we are £100 better off than we estimated for.

I think that I have now touched upon every important point in connection with the report, but shall be glad to give any further information that may be required. We refer in the report to the improved financial position of the company. It will be remembered that a year ago, when the company was almost on the rocks, you were informed that to save it an issue of £40,000 debentures would probably be required. This measure would have placed your shares in a very disadvantageous position, and we rejoice that the necessity for such a course has passed away. At the meeting in June I referred to a debt due to this company of £2,600, which had been outstanding for a long period, and had threatened to become a bad debt. I am happy to state that, owing to the energetic measures taken to recover it, £1,800 was recovered some time ago, and that within the last fortnight the balance, together with all our costs, has been paid into the coffers of the company. It is with much regret that I have to announce that Sir Edward Jenkinson has resigned his seat on the board as from the end of this month, owing to the severe strain upon his health. When he wrote to me I ventured to make as strong an appeal to him as I could to reconsider the matter. He kindly did so, but adhered to his decision. Knowing as I do the worry connected with this business, and the fact that it must increase as the business

progresses, I felt, as you will do, that it would be unfair to ask him to disregard the strong advice of his medical adviser. Sir Edward is entitled to the gratitude of the shareholders for the zeal he has shown in their interest, and the extraordinary amount of his valuable time which he has devoted, sometimes for several days in succession, to the investigation of the accounts. The board do not propose to ask you to elect another director at present, as this is a matter which demands the most careful and serious consideration. Should an honourable proprietor possessing the requisite stake in the company, commercial training, and experience, and willingness to serve be found, the board will elect him, subject to your subsequent approval and confirmation. I think it right to conclude these remarks by calling your attention to the great zeal which has been shown by the secretary and staff in their labours during the past months. Owing to the reorganisation of the work entailed by the removal of the works to Coventry they have had to work for some months up to nine, ten, and eleven o'clock at night, and I feel sure that you will be willing to give their services a hearty recognition.

Mr. H. E. Sherwin Holt, M.I.E.E., seconded the motion.

Mr. J. J. H. Sturmev contested several of the statements in the chairman's speech, reflecting on the late board, of which he was the chairman. He denied that in the legal action to which reference had been made he went into the witness-box and swore that the accident was due to Mr. Critchley. According to his information the company's own counsel threw the case away. Anyone would imagine from reading the report that the new board found matters in a perfectly chaotic condition, and that the present results showed the character of their work. The staff at the works was reduced in the autumn of last year partly because of the slackness of funds, but mainly because the demand for cars fell off, and they experienced a dead season, which was not likely to occur again, he was glad to say. The less skilful hands were discharged, and the more skilful put on short time. Many of the latter came to him to know what chance there was of full time again, and his answer was that he thought as soon as the year turned the difficulties at the board would be overcome, and the financial difficulty also, and they would be put on full time again. He declared that he had made various suggestions as to things it was necessary to do in the interests of the company, and that if they had been acted upon the company would be £4,000 better off to-day, apart from the four items to which the chairman had referred.

Sir Edward G. Jenkinson, K.C.B., said he felt it would not be right of him to leave the board without giving some expression of his views. Shareholders would remember the critical position in which the company was at the time of the meeting at which the committee of investigation presented its report, and, seeing how difficult the position was, and that no one at that time would come forward to join the board, he himself went into the gap, determined to do what he could to pull the company through; but he had no idea at the time the work that it would entail, in addition to the other work he had in hand, nor the conditions under which he would have to work. Those conditions were as the chairman told them, and he begged to thank the chairman heartily for the way he has spoken of his services. He regretted that he could not continue to serve the company. With regard to the present condition and prospects of the company, he had gone very deeply into all matters, particularly questions of accounts, and thought he could confidently say that the figures now presented were accurate in every respect, and showed the financial position without any disguise. As to the prospects, he thought they had an excellent business, and that with good management a large trade could be done, and that it would not be long before the directors would be able to declare a dividend upon the capital. There were three points that he should like to mention in this relation, as in his opinion they were very important; they were matters already under the notice and consideration of the board. First, the board required good organisation of their work, and a clear definition of the powers and duties of their subordinates. It had been decided to appoint a manager to take charge of the business and push it, and that manager was to be Mr. Critchley, while in his place, in charge of the works, a manager would be appointed who would confine his attention to superintending the manufactures. It had been difficult for Mr. Critchley to push the business and attend to the works as well. The second point he would mention—and it had already been introduced to the board by Mr. Holt—was that now orders were coming in so fast strong measures should be taken to improve the output from the works, and bring them up to their full capacity. Thirdly, and he put it forward as his own suggestion, he thought they should appoint a fifth director, one who would bring knowledge and ability to bear upon the duties. He regretted that the state of his health and the conditions under which they worked compelled him to say good-bye, and could only hope that their business would prove a great success.

The motion was then put, and carried unanimously.

Mr. H. Harvey George spoke in eulogistic terms of the services rendered the shareholders by Sir Edward Jenkinson, and moved a hearty vote of thanks to that gentleman.

Mr. Avery seconded the motion, which was supported by Mr. Sturmev, and carried unanimously, and Sir Edward Jenkinson briefly acknowledged the compliment.

The Chairman moved the re-election of the retiring director, Mr. Holt, and took occasion to remark that the points to which Sir Edward Jenkinson had referred would receive the best attention of the board.

The motion was seconded by Mr. J. H. Mace, and carried.

The proceedings then terminated.—*The Financial News.*

AN exhibition of cycles and motor-cars is being held at Lyons, France. It will remain open until January 8th.

## FURIOUS DRIVING CASE.

MR. ARTHUR EDWARD JOHNSON was summoned at the Bristol Police Court last week for driving a motor-car at a dangerous pace in Tyndall's Park Road. P.C. Cooper, 81 C, said that at a quarter past nine on Friday morning, the 1st inst., he saw the defendant driving a motor parcels car at a furious rate down Tyndall's Park Road. He called to him to stop, but he took no notice. Witness walked about fifteen yards to see the car out of sight, and in the meantime it covered two or three hundred yards. Witness again saw the car in Queen's Road, where the speed was somewhat reduced, but was dangerous. He afterwards saw the defendant at his works, 5, Reclers-street, and he said he had not heard witness call to him to stop. For the defence, Mr. Clark submitted that the constable had not been an accurate judge of the speed of the car. The machinery of the car would only allow it to go at four speeds—three, six, eight, and twelve miles an hour, and it was going down Tyndall's Park Road at eight. Defendant gave evidence and stated that he did not hear the constable call or see him hold up his hand. His brother, who was with him, told him that the policeman had spoken, but he did not stop, because he knew he was not exceeding the legal pace. He put on the brake down the hill, and could not have been going at more than eight miles an hour. There was nobody about at the time. Cross-examined by Chief Superintendent Cann: He was in the habit of driving about the cars to show their superiority over horse traction, but not their greater speed. Mr. William Ball, motor engineer, stated that the machinery did not propel the car when the brake was on, and he did not think the impetus of the car could send it at more than eight miles an hour. The bench were satisfied that the defendant was going too fast, and fined him 10s. and costs.

## DAIMLER MOTOR COMPANY, LIMITED, v. MOTOR MANUFACTURING COMPANY, LIMITED.

THIS action was down for trial before the Lord Chief Justice. Council for the plaintiffs, however, on the 14th inst., stated that the case had been settled; the defendants had paid the amount of the debt, and it only remained to ask his lordship for judgment, with costs.—Council for the defendants agreed, and his lordship accordingly gave judgment for the plaintiffs, with costs.

## FRANKENBURG v. THE GREAT HORSELESS CARRIAGE COMPANY.

IN the Court of Appeal, before the Master of the Rolls and Lord Justice Romer, the case of Frankenburg v. the Great Horseless Carriage Company, Limited, was heard on appeal on Tuesday by the plaintiff from orders of Mr. Justice Channell, who had dismissed the action as against the company and the executors of a deceased director, the Earl of Winchelsea. Mr. Eustace Smith, in support of the appeal, said the action was by a shareholder against the company and its directors, he claiming to have rescission of his contract to take shares as against the company, and for damages as against the directors on the ground of misrepresentations alleged to have been contained in the prospectus.—The Master of the Rolls said he was much surprised to find an action in this form summarily dismissed upon a technical ground. Actions in the form adopted in the present case were common enough, and if the order made by the learned Judge was to stand the practice on the Chancery side would be revolutionised.—Lord Justice Romer concurred, and the appeal was accordingly allowed, with costs.

## CHARGE AGAINST A DIRECTOR.

AT the West London Police-court, last week, Mr. Sydney Frederick Atkins, of Blomfield-terrace, Harrow-road, appeared to answer an adjourned summons which alleged that while he was a director of the Automobile Association (Limited) he unlawfully applied to his own use certain sums the property of the company.

Mr. Warburton (for Mr. J. P. Grain) appeared to prosecute, and Mr. Osborn was for the defendant.

The allegation was that the commission paid by the defendant was smaller than the amounts in the cheques drawn on the company.

Mr. Osborn said he wished to have the books produced containing any reference to the amounts in question.

The summons was then adjourned for the production of the books of the company.

A RUMOUR reaches us that a service of public motor-vehicles is shortly to be started in the Windsor district.

A NOVEL automobile contest, open to small vehicles driven by one person and suitable for the delivery of packages of a minimum weight of sixty kilogrammes, is being organised by *La France Automobile* for January 14th next. The competitors will have to deliver packets and take others at Poissy, La Croix de Noailles, Saint-Germain, Port Marly, Le Peco and Maisons-Laffitte. Achères station will be the point of departure and arrival.

## A SHEFFIELD MANUFACTURER AND HIS MOTOR-CAR.

A SOMEWHAT amusing action was tried at the Sheffield County Court last week, before His Honour Judge Waddy, Q.C. The plaintiff was Mr. F. C. Askham, cutlery manufacturer, carrying on business in Broad Lane, Sheffield, and the defendant company was Friswell, Limited, who carry on business at Holborn Viaduct, London, E.C. The claim was for £11 13s. 3d. for various repairs done to a motor-car supplied by the company. In his statement of claim, plaintiff set forth that defendant made the following false representations on the sale of the car:—1st, that the back tire of the car was all right, and as good as any others; 2nd, that the tube underneath the cover of the tire was in perfect condition; 3rd, that the car was perfect in all respects, and as good as new. Mr. W. E. Clegg was for the plaintiff, and Mr. Grimswood Meers, barrister, London, represented the defendant company.

The statement of Mr. Clegg showed that in January last plaintiff saw an advertisement in a trade paper that the defendant company had a motor-car for sale. On February 24th he went to the defendant's place at Holborn. Mr. Clegg believed that Mr. Friswell was the company entirely. On the occasion of this visit defendant agreed to sell plaintiff a motor-car, and Mr. Askham paid £50 on account. It was decided that defendant should put the car, which was second-hand, into good condition, and that then plaintiff should go to London and drive the car from London to Sheffield. Considerable time elapsed, and plaintiff wrote several times about the car. On May 2nd he received an intimation that the motor-car was ready. When he got to the defendant's place Mr. Friswell said he had a better car than the one he had sold to the plaintiff. It was one he had had for his own private use, it had only been driven a few times, and it was, as a matter of fact, better than a new one. The first contract was rescinded and a new agreement entered into for the second car. Plaintiff already had a motor-car, and this was to be taken in part exchange, £100 being allowed for it. The price of this second car was £425. On May 3rd plaintiff went to the Midland Station and met Mr. Friswell, who had brought the motor-car from London. This was eleven o'clock at night. They started for Ranmoor, went a somewhat roundabout way to miss the steepest hills, covering altogether a distance of between three and a-half and four miles, and got to plaintiff's residence at a quarter-past two in the morning. The journey was, according to Mr. Clegg, quite a memorable one. The travellers only reached Howard Street when the car stuck, and here plaintiff and defendant were fast for some time. Other mishaps occurred on the way, and the journey was completed in a little over three hours—quite a record run. Next morning plaintiff examined the car and pointed out certain defects. Defendant wired to London for certain things, and these were sent, and then a further trial was made, a run to Baslow being arranged. The travellers on this occasion were plaintiff and defendant, and plaintiff's wife and sister. According to Mr. Clegg, they only got as far as Owlbar when something went wrong, and they had to turn back. On getting home plaintiff again pointed out certain defects. Defendant glossed these over, and then said if anything went wrong he would make it right, as it was his ambition to give satisfaction. Plaintiff accepted that understanding, and next day, having given Mr. Askham a little more instruction as to the use of the car, defendant returned to London. Defendant took plaintiff's old car to London with him, and left Mr. Askham at the Sheffield Midland Station with the car he had purchased. He drove it home, and on getting to Ranmoor it overshot the mark. Plaintiff found that the reversing gear had gone wrong; he could not run the car back, and with assistance he had to "shove it" into his gate and into the carriage house. The same afternoon, while plaintiff was in the carriage house looking at the car, one of the tires went off like a pistol shot. This was a tire plaintiff had called attention to when he was pointing out defects, and on examining this tire after the explosion he found that it had been repaired in no less than four places, and he also discovered that the gear wheel had broken. He wrote to the defendant for a new wheel, but it was so long coming that he countermanded the order and got one elsewhere. But Mr. Friswell persisted in sending the wheel, and he afterwards sued the present plaintiff for the price of it. Judgment was given against him, and the amount then recovered formed part of the present claim. On plaintiff finding numerous defects he wrote to the defendant, and the latter then denied having given any guarantee at all. But, said Mr. Clegg, this guarantee was not only made to the plaintiff, but it was made in the presence of plaintiff's wife. Moreover, at common law, he contended plaintiff had a right to expect that the car was in proper condition and in every way fitted to do the work intended.

Plaintiff, in reply to Mr. Meers, said he did not know that Mr. Friswell was in a very large way of business, and had several large establishments in London.

Mr. Meers: Do you say that Mr. Friswell was guilty of fraud and falsehood when he sold this motor-car to you?—Plaintiff: I should be inclined to say that he was guilty of falsehood; Mr. Friswell or his employees must have known that this car had been repaired.

Mr. Meers: That is not sufficient for me; we should not have been here at all except that you have alleged fraud and falsehood? Will you say whether you allege he was guilty of fraud and falsehood?—If he knew of the condition of the car, yes.

You have had this motor-car ever since and have it now?—Yes.

How many hundred miles have you driven it?—I cannot say.

You have been a long tour?—Yes, I have been a tour.

Where did you go to?—I first went from Sheffield to Bath.

A good distance; did the car go well?—Yes, it went very well from Sheffield to Bath.

Did you travel on an average fourteen miles an hour?—Well, we took our time; I should think we did ten miles an hour on the average.

For the defence, Mr. Friswell was called, and said that in the trial trips there was nothing to contradict his assertion that the car was in working order, and was as good as a new machine. The several breakdowns which took place were entirely due to the plaintiff's improper working of the machinery. When at the Midland Station, when witness was leaving for London, plaintiff worked the car on to the station platform. He nearly ran it over the platform on to some rails, and witness jumped on the car and showed him how to work it. After this plaintiff said he thought he could work it properly. He was certain that plaintiff had not worked the machinery properly. The gear wheel was broken no doubt because plaintiff tried to work the car forward and then reversed the machinery, and the result of endeavouring to run the car forwards and backwards at the same time was that the wheel-gear gave way and was broken. He also contended that some of the charges set forth in the particulars for repairs were excessive. As to the tyre, he was the first to see the defects; he pointed them out to the plaintiff, and when he said the defects were serious, he said they were not. And they were not, and could be easily repaired. He, however, told the plaintiff distinctly that the car being second-hand he must take it as it was.

In cross-examination, defendant said it was the custom of motor-car makers to send out patched tyres; it was, in fact, a frequent occurrence. In saying the tyre was perfect he meant that it held air, and, to his mind, if it held air it was perfect, no matter how much it was patched. He said this car was better than a new one, and he believed it was, because any machinery, especially motor-car machinery, was better for being used a little. If there was any guarantee at all, or any promise to put everything right, that guarantee or promise went to the winds when the bargain was concluded. He came to Sheffield because he was anxious to make the car all right before he handed it over to the plaintiff. After plaintiff accepted it his responsibility ceased.

Mr. Meers argued that as the defendant was accused of making false representations the plaintiff must prove that Mr. Friswell actually knew that he was making false statements. The statement that the car was as good as new must be taken relatively because it had undergone inevitable wear and tear for several weeks before it was sold to the plaintiff. The accident arose through plaintiff's inexperience, and the car was handed over in perfectly workable order, to which the guarantee was limited.

In the end His Honour gave judgment for the plaintiff for £10.

## TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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## COMMENTS



WE have to thank the many friends and readers who have thought of the Editor of *The Motor-Car Journal* this Christmastide, and favoured him with cards and other seasonable greetings. Such souvenirs are highly appreciated, and we take this opportunity of reciprocating the hearty good wishes thus expressed. Unfortunately the weather in the London district during the holidays has not been very favourable to the pursuit of automobilism, and the fog of Saturday was sufficiently dense to cloud

the hopes of motorists, while the dampness of the air and the muddy condition of the roads on the three following days restricted the number of those who went for rides or drives by motor-cycle or car. To every reader we would extend our good wishes, and express the hope that all concerned in the automobile world may experience, during the coming twelve-month, a season of progressive prosperity and a year of happiness and health.

### 'Xmas Trips.

WHILE, however, the weather in the Metropolitan area has been—if we may use the term—anti-automobile, many country districts have been favoured with seasonable climatic conditions, and motorists have doubtless availed themselves of the opportunity to see the country as it appears when leaves are fallen and the holly berries are red. In the summer several readers favoured us with photographs of themselves mounted on motor-cars ready for a long tour and illustrating views in which their cars were introduced. We shall be glad to receive similar favours during the winter months from automobilists who may have been caught by the photographer, together with brief accounts of their wanderings.

### Automobiles and the War.

MUCH criticism has lately been heard with regard to the neglect of the War Office in not utilising the automobile in the course of the operations now proceeding in South Africa. On several occasions we have referred to the subject, rather restraining the enthusiasm of those who would have shipped scores of automobiles to the front, heedless of their suitability and reliability. But we have, at the same time, insisted that in many situations the use of the new means of locomotion would have proved an advantage to the army, while it would have afforded opportunity for experiments of the greatest possible value. A few swift courting motor-cars at the disposal of some of the scouting parties would have rendered good service, while giving their occupants far greater immunity from danger than is provided by the fleetest

steed. Of course, their utilisation in actual warfare is a matter for the future—and, if our British War Office continues to be like the Bourbons (learning nothing and forgetting nothing), we shall be considering the adoption of automobiles when the army authorities of foreign countries have demonstrated to their entire satisfaction the practicability of such vehicles in every phase of military operations.

### Practical Demonstration Wanted.

READERS of last week's *Journal* will have seen how the War Office has already rejected the offer of a free trial of motor lorries—surely the work of some junior official. On the other hand, the German military authorities have not only tried but have ordered five motor-lorries for transport purposes. Provided makers are able to give guarantees as to reliability there should be no difficulty in the way, as proper and efficient drivers could easily be found willing to go on active service. It is generally thought that when the war is over a thorough overhauling of our military system is likely to take place, and, should this be the case, we hope manufacturers of motor-cars will demonstrate to the military chiefs their capacity to play an important part in the equipment of the army. From every aspect the automobiles should be adaptable to military purposes, providing not only a rapid means of transit, but one which, from its swiftness, renders it less risky than anything now in use. And, in addition, the principle of the armoured train could be applied to the automobile.

### The Scottish Automobile Club.

A MEETING of the provisional committee of the Scottish Automobile Club was held in the Royal Hotel, Edinburgh, on Wednesday, the 27th inst., to proceed with the appointment of officers for the club. Mr. Johnson, secretary of the Automobile Club of Great Britain, was present, he being on a visit to Edinburgh in connection with the completion of the arrangements for the 1,000-mile tour. Our Scottish correspondent writes:—"I have no doubt Edinburgh will give a warm reception to the visitors on that occasion, which may perhaps induce the London Club to more frequently extend their runs as far as Scotland, and occasionally a meeting somewhere in the Midlands or about half-way between Edinburgh and London could be arranged, at which the Scottish contingent might meet with the London members."

### An International Congress on Automobilmism.

UNDER the auspices of the French Ministry of Commerce, Industry, Post, and Telegraphs, an International Congress on Automobilmism is to be held in Paris next year. The organisation committee consists of:—President, M. Michel Lévy; vice-presidents, the Count de Dion and M. G. Forestier; secretaries, the Count de Chasseloup-Laubat and M. G. Collin. The



congress opens on the 9th July next, and will last a week. The first meeting will be held in the large hall of the Palais des Congrès, while the club-house of the A.C.F. will be the locale of the subsequent gatherings. The questions to be discussed have been divided into four groups:—(1) History of automobilism; (2) technical subjects: motors, transmission, different methods of propulsion, etc.; (3) automobilism from the economic standpoint; and (4) international questions. Automobilists desiring to take part in the congress are requested to make application to the secretaries at 51, Rue de Ponthieu, Paris, the subscription being 20 francs.

#### A Perthshire Idea.

At the last meeting of the Perth County Council Sir Robert Menzies drew attention to the notices issued regulating the speed of motor-cars on roads, and said what occurred last year was that there were no rules or regulations for the conduct of motor-cars and cyclists. He succeeded in getting the county to publish a set of rules—a very nice thing for the policeman to put in his pocket, but no use for people on motor-cars. He begged to move that the instructions to the County Road Board be that they issue a good-sized notice so that people who run might read. Mr. Hutcheson said it was not very easy to draw up a notice that those who run motor-cars could read. The chairman stated, however, that they would try to make the instructions larger.

#### From St. Petersburg to Paris on a Motor-Tricycle.

A NOTEWORTHY ride has lately been accomplished by M. Pierre Orlowsky, the editor of the Russian *Semokat*, viz., from St. Petersburg to Paris on a motor-tricycle. The ride was undertaken not with any view of covering the distance between the two capitals in the shortest time, but of demonstrating the utility of motor-tricycles for long-distance work. M. Orlowsky, in a recent issue of *La Locomotion Automobile*, to



Cliché de]

[“*La Locomotion Automobile*.”

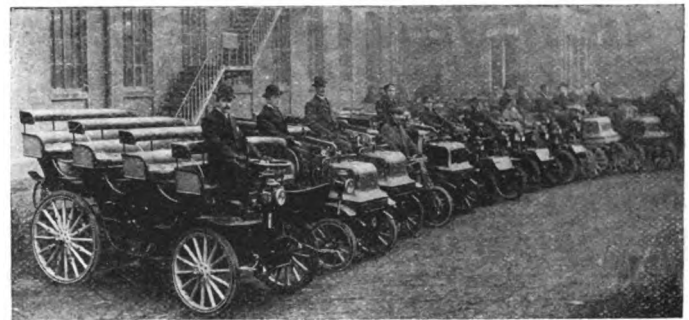
FROM ST. PETERSBURG TO PARIS: M. PIERRE ORLOWSKY ON HIS MOTOR-TRICYCLE.

whom we are indebted for the accompanying illustration, contributes an interesting article on the subject of his ride from the point of view not of the incidents met with *en route*, but of the difficulties encountered in connection with his machine. In the course of his

article the author states that he had numerous stoppages, the bulk of which were due to the bad weather experienced, and he suggests that in machines intended for long distance work more attention should be paid to the protection of the motor and the various parts from wet, particularly the electric ignition devices. Trouble, too, was found in obtaining petrol of the proper density. M. Orlowsky strongly recommends that motor-tricycles should be fitted with foot-rests, and considers that two-speed gears are a necessity for machines intended for use in Russia.

#### Motor-Vehicles for Municipal Purposes.

THE adoption of motor-vehicles by the Chelsea Vestry and the report of the surveyor on the tenders submitted for the supply of motor-vans to that authority has induced the *Contract Journal* to devote a leader to the subject of “Municipal Motor-vans.” Our contemporary considers that “apparatus of this kind is almost certain to come into more extensive use.



THE RECENT VISIT OF THE CHINESE MINISTER TO COVENTRY: THE FLEET OF MOTOR-CARS PROVIDED BY THE MOTOR MANUFACTURING CO., LTD.

What the actual type of motor will be it is impossible to say, but for many reasons, direct and indirect, horse traction in populous centres is bound to give place to mechanical traction. It necessitates a considerable amount of courage in an official to advise the introduction of motor vehicles, but we think the advice perfectly justifiable. The immediate question is not the perfection or imperfection of such vans, but whether even in their present shape of perfection they are better in all respects than what has hitherto been used. The outcry of people who little understand the steps of progress, that we must wait for something better, is altogether bad, and shows a great lack of appreciation of facts.”

#### Some of the Advantages.

OUR contemporary then proceeds to deal with some of the advantages of motor vehicles for municipal purposes, and in this connection remarks: “One of the greatest problems in a large city is that of street cleansing, and to this may be added another in street repair. Unless the use of motor-vans brings in greater troubles, it is certain that their general adoption would simplify both these great problems. Taking the latter first, they would substitute a rolling load in place of a scraping and a pounding action; it may be that the ordinary wheel base will, under the altered conditions, have to be increased, but there can be no doubt about the less wear and tear of the street surfaces. Of course, the use of half a dozen motor-vans will have no appreciable effect; we are simply pointing out the result when the use of such vehicles becomes general. With regard to street cleansing, the substitution would effect what might almost be termed a revolution. There is no need to dwell upon this, because it is clear to everybody. What, however, is not so clear is that under existing conditions, especially in dry weather, the air of our streets which we have to breathe is one of the filthiest mixtures imaginable, and may largely account for the physical degeneracy of the population of large cities.”

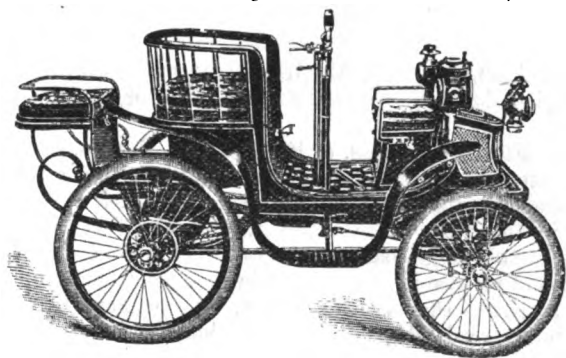


### What is a Voiturette?

THE difficulty in classifying certain types of motor-vehicles has again been exemplified recently in the Sarthe province of France, and in this instance the objection raised by the owner of the automobile in question has been upheld. In many of the French "departments" voiturettes are subjected to a tax of 24fr. per annum, being classified as motor-cycles, but this view was not shared by the Sarthe authorities, who regarded them as motor-carriages, and taxed them accordingly, that is to say to the extent of 52fr. each. This ruling has long been objected to by owners of voiturettes, but it is only quite recently that one of their number took the trouble to move in the matter. His formal demand for a rebatement of the tax imposed upon his automobile was lodged with the council, who eventually gave judgment in his favour and directed that the charge should be reduced from 52fr. to 24fr. In making known this decision the council stated that the vehicle could not be considered as an automobile carriage from a fiscal point of view as it was not suspended, an essential feature of all automobiles coming within this category. Further, that although it was not furnished with pedals there was nothing in the Act of April 13th, 1898, which directly stipulated that motor-cycles should so be provided. Nothing in the weight, the price, the shape, or the comfort of the vehicle warranted a comparison being made between it and an automobile carriage, and the council further justified its ruling by pointing out that vehicles of this type had been prevented from competing in certain races for carriages on the ground that they were motor-cycles. This just and moderate decision has delighted those *chauffeurs* of Sarthe who drive "small fry" cars, and who have so long felt themselves to be much overtaxed.

### The Delecroix Motor-Car.

WE are now able to give an illustration of the attractive-looking light four-seated motor-car exhibited at the recent National Cycle Show by the Delecroix Motor Syndicate, Ltd., of 15, Angel Court, Throgmorton Street, London, E.C. The car is fitted with a single-cylinder vertical motor of  $3\frac{1}{2}$  h.p. located under a "bonnet" in the fore-part of the frame. Special attention has been devoted to the cylinder-cooling arrangements, there being radial discs and a fan, and also a



THE DELECROIX MOTOR-CAR.

special device by means of which cool air is claimed to be introduced into the inside of the cylinder. The ignition is electrical, while three forward speeds,  $5\frac{1}{2}$ ,  $12\frac{1}{2}$ , and 22 miles per hour, as also reverse motions are provided. The longitudinal shaft, which carries the variable speed gear, terminates in a bevel wheel meshing with a corresponding wheel on the counter-shaft, from which the power is transmitted to the rear axle by a single chain. A friction clutch is provided by means of which the motor can be instantly cut out from the transmission, the hand-lever controlling the clutch also being connected up to the band brake on the differential gear. A foot pedal actuating band brakes on the rear axle is also fitted. The car is suspended by easy springs on the frame; the steering is by means of a bar, while the wheels are of the cycle type with pneumatic tires. It will, it is claimed, climb gradients of one in six and weighs complete  $4\frac{1}{2}$  cwt.

### American Automobileists and the Gordon-Bennett Challenge Cup.

STEPS have been taken at a meeting of the Automobile Club of America, held in New York, to have the United States represented in the first race for the International Automobile Cup. A letter was read from the donor of the cup, calling attention to the fact that entries must be made before January 1st, and expressing the hope that America will be represented. Mr. George F. Chamberlain, vice-president, spoke in favour of challenging. Messrs. Whitney, Lyon, J. Brisben Walker, and other members also urged the importance of being represented, and expressed confidence in the ability of American manufacturers to win the cup. Mr. Albert R. Shattuck advised caution, on the ground that French machines were built specially for high speed, while American makers aim more at comfort. The announcement was made that Mr. Alexander Winton, of Cleveland, wished to compete. It was finally decided to appoint a committee of three to examine the automobiles whose owners desire to enter the international race and test them. If in the opinion of the committee the carriages have a fair chance to win, and the owners are willing to post the entrance fee, the committee is authorised to perfect the entries.

### Automobiles and the Railways.

SOME time ago we advocated the establishment of motor-car services by the railway companies in connection with their excursion arrangements. There is no doubt the provision of motor-wagonettes and similar vehicles running in conjunction with such day excursions as those of the Great Western Railway Company into Shakespeare's country would not only be popular but profitable. By such means passengers would be able to make the best use of their time, and not be dependent on stray horse-drawn vehicles, such as are to be found in country towns. Although English companies have not yet taken to the idea, American concerns are considering it, and the Baltimore and Ohio Railroad Company's contemplated experimental use of automobiles in connection with their railroad should be regarded with interest.

It is reported that the Elmore Bicycle Company, Clyde, O., purposes to go into the manufacture of horseless carriages.

A TRAINING school for automobile drivers is maintained in Boston, U.S.A., by the New England Electric Vehicle Transportation Co. The charge for this instruction is the same as for the cab, two dollars an hour. It seems rather a high price for instruction, especially if the learner requires many days' training, but the expense involves the use of the carriage and an experienced man as instructor.

THE Winton Motor-Carriage Company, Cleveland, has recently completed a special design of automobile delivery wagon, similar to the vehicles used in collecting United States mail. After considerable correspondence with the Post Office Department, the company has received permission to use this wagon in Cleveland in collecting mail in the outlying parts of the city. The test will be made in the near future.

THE Motor Trades Association, Limited, was registered on December 18th, by Mr. A. S. Ramskill, 40, Holborn Viaduct, E.C., with a capital of £100 in £1 shares. Object: to protect the interests of persons engaged in the motor industry, to manufacture and deal in motor-cars and cycles, and (if deemed desirable) to insure against accidents caused by or to motors. Registered without articles of association.

INCORPORATION papers of the Duryea Motor Company were filed in New Jersey November 28th. The capital will be £200,000. The company has purchased the patents of the Duryea Manufacturing Company of Peoria, Ill. Henry Crowther of New York is president, and Charles E. Duryea vice-president and chief engineer. The company will erect a large factory in addition to the Peoria plant.

## MOTOR-CARS ON THE CONTINENT.

— 88 —  
(From Our Own Correspondent.)

### The Levassor Monument.

To obtain the consent of the municipal authorities of Paris for the erection of a monument to the memory of some well-known man is a distinctly tedious operation, as the case is examined and reported upon by one committee after another in a manner truly bewildering to the uninitiated. The statue which it is proposed to erect in memory of the late Monsieur Levassor will probably find a place on one of the pretty grass plots adjacent to the Porte-Maillot, as this position has been visited and favourably reported upon by the third committee of the Municipal Council. The well-known sculptor Dalou has the work in hand.

### Races at Baden.

WHAT a year of racing on the Continent 1900 will be! From north, south, east, and west comes news of automobile races to be promoted during next season by the clubs, by the journals, by exhibition authorities, and by others eager to help forward the new industry and sport. The Swiss Automobile Club recently announced its intention to hold a "course" open to all automobilists over a route of 175 kilometres, starting from Geneva, and passing by way of Aix-les-Bains, Chambéry, and Seyssel, back to that town; and now from Austria comes the news that a series of races will take place next year under the patronage of the A.C.A. These "courses" will be:—June 24th, hill-climbing race from Helenenthal to Siegenfeld; competing vehicles will be divided into three categories. June 29th or August 5, a series of races on the track. September 9th, a sixty kilometres race on the road. If this sort of thing continues "chauffeurs" will soon be able to pick and choose their races just as cycling and running men do at the present time.

### Mr. Vanderbilt, "Chauffeur."

THE pleasures of automobilism appear to have as completely fascinated Mr. Vanderbilt as they have done everyone else who is fond of fast and easy travelling. It will be remembered that Mr. Vanderbilt drove from Paris to Nice some few weeks ago, and now it is reported that he has left the Riviera for a lengthy tour on his car in Spain.

### The German Automobile Club.

THIS club, although only formed in July last, has already over two hundred members. As a club house, some rooms have been acquired in the premises of the Society of German Engineers at 4A, Summerstrasse, near the Thiergarten, in Berlin.

### The Gordon-Bennett Challenge Cup.

THE French Automobile Club has received notification from the German Automobile Club that it intends to send in a challenge for this cup. On the other hand, the Swiss and Austrian clubs have indicated that they cannot send challenges until 1901, when the automobile industry in the respective countries is expected to be in a more advanced condition.

### The Automobile Speed Limit in Belgium.

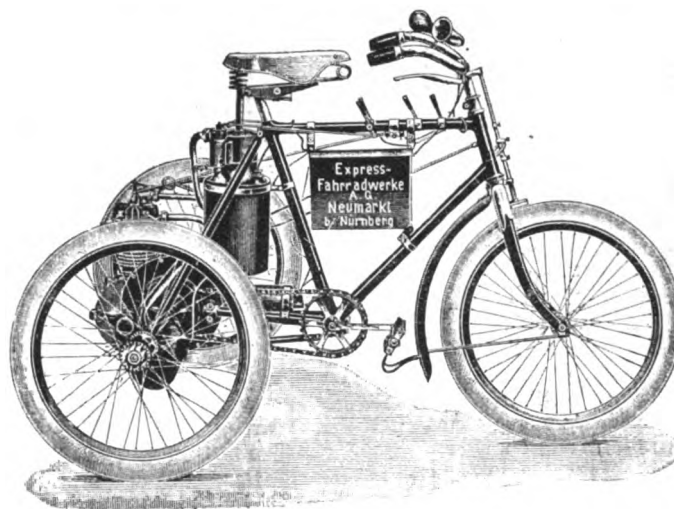
THE Count van der Straeten-Ponthoz, president of the Belgian Automobile Club, accompanied by two members of the Council, lately waited on the Belgian Minister of Agriculture to ask that the present speed limit of 10 kilometres per hour might be increased to 18 kilometres—the speed of a trotting horse.

### Municipal Help.

I HAVE already announced in these columns that the Béarnais Automobile Club will promote a series of races and fêtes at Pau in February next, and I now learn that the Municipal Council of that town have decided to make the club a grant of 5,000 francs (£200) towards the expenses incurred. This is something like practical assistance, and no doubt the council fully realises that the successful organisation of these automobile fêtes will result in a tremendous influx of visitors into the town.

### A German Motor-Tricycle.

THE Express Cycle Company (Goldschmidt Brothers) of Neumarkt, near Nurembourg, Germany, is now manufacturing motor-tricycles, and have adopted the "Aster" motor. As this motor is already fairly well known in this country, and has already been described in the *Motor-Car Journal*, it is



unnecessary to refer to it at length again. It will be noticed, however, that in the "Express" motor-tricycle illustrated here-with the carburettor is located under the saddle, and not at the side of the motor as is usual.

LES ATELIERS VVE. MATH-SNOECK, of Ensival, has secured the Belgian rights in the Bolide motor-cars of M. Léon Lefèvre, Paris.

MR. FRANK MORRISS, of King's Lynn, the motor-car pioneer in the eastern counties, is sending out to his friends and clients a very handsome combined calendar and letter-rack. "Then and Now" is the title of the illustrations, the first one of which depicts the old stage-coach starting on its long but slow journey. The second picture is that of a railway station with an express train awaiting the signal to start. Passengers are arriving, some in electrical cabs and others on bicycles, the old and new methods of conveyance being thus excellently illustrated.

IN reference to a furious driving case at Bristol, reported in our last issue, Mr. A. E. Johnson, the manager of the Bristol Motor Co., writes as follows: "Now that the question of exaggerated speeds relating to cycles has died a natural death, the motor-car seems to have come to fill its place. However, last Wednesday, I was charged for driving a motor parcels van at too fast a pace, viz.: That during the time a policeman sharply walked 15 yards I had gone 250 yards. If, supposing the policeman had done the 15 yards in seven seconds, it would have been at the rate of 4 miles 674 yards, or 43,829 miles per hour only, making my pace at the rate of 73 miles 91 yards, or 73.05 miles per hour. Although it was clearly proved that my pace did not even approach the limit; that no one but the policeman was about at the time; and although he admitted he did not put up his hand—hence the impossibility of knowing his demands—a fine was imposed. It is a great pity that prejudice outruns justice and reason in these cases."

## THE BROUHOT MOTOR-CAR.

ONE of the latest French concerns to take up the manufacture of automobiles is Messrs Brouhot and Co., of Vierzon (Cher), France, old-established makers of portable engines. We are now able in Figs. 1 and 2 to give a general view and plan of a motor-wagonette constructed by this

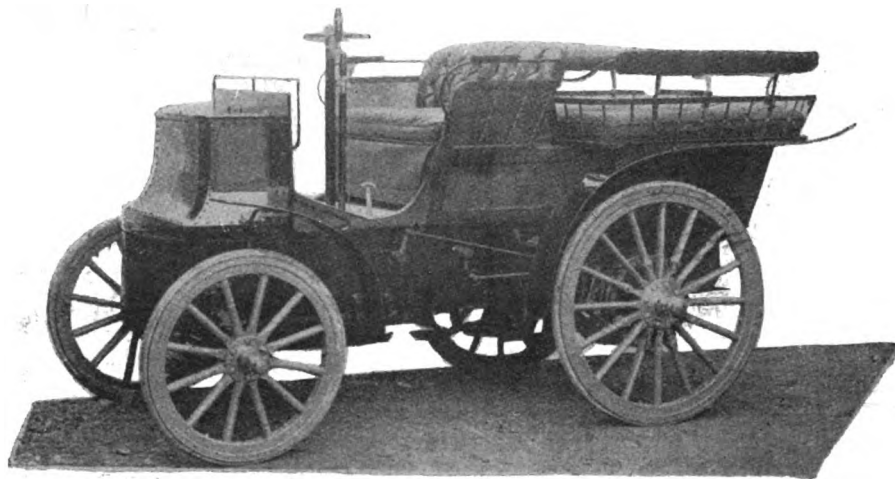


FIG. 1. GENERAL VIEW OF BROUHOT MOTOR-CAR.

firm, together with a few brief particulars of the same. Unfortunately complete details of the petroleum-spirit motor employed are not available, but we learn that it is of the horizontal two-cylinder type of 5 h.p., working on the Otto cycle. The motor is suspended from and under one side of the frame of the vehicle between the fore and rear wheels. The admission and exhaust valves are stated to be so arranged that they may be removed, for cleaning and other purposes, by loosening a single bolt. Electric ignition is employed. The cylinders are water jacketed, and by a special arrangement any steam given off by the heated water is emitted with the exhaust gases. A feature of the driving mechanism is that no belting or pitch chains are employed, the power being conveyed from the motor shaft to the rear road wheels through spur and bevel gearing. The crank shaft is fitted with two counter-weights, for balancing purposes. The fly-wheel is located directly in the axis of the frame. On the end of the crank shaft is a small bevel pinion *E*, in gear with a bevel wheel *F*, mounted on the intermediary shaft. The latter carries four different sized spur wheels, forming the speed-varying gear, gearing with corresponding wheels on a parallel shaft *B*. The hubs or bosses of the gear wheels on the shaft *A* carry on one side a clutch which may be brought into contact with one or other of the clutch sleeves, which revolve with the shaft. Three forward speeds and one reverse are provided, the desired pair of wheels being brought into contact with its sleeve by means of a lever within easy reach of the driver. The wheels on the shafts *A* and *B* are always in gear, but only transmit power when in contact with their respective sleeves, only one of which can be put into gear at a time. The makers claim that this permits of the changing from one speed to another to be effected without shock and without undue wear on the gear wheels. At the end of the shaft *B* is a friction clutch of the Villard-Bonafous type, working inside the pulley *D*, and controlled by a hand lever, thus enabling the propelling mechanism to be quickly disconnected from the rear road wheels. Cast in one piece with the pulley *D* is a bevel pinion *G*, gearing with a similar bevel-wheel on an intermediary shaft *s*, parallel with the rear axle, to which the power is finally transmitted through the spur-wheels *TT*.

Rather a novel feature is introduced in connection with the rear road wheels, which are mounted loosely on the axle. At each end of the latter circular discs *R* are mounted, each provided with a double-pawl arrangement, the ends of the pawls being located in a notch in the boss of the discs. The wheels themselves are fitted with a ring having internal teeth, this ring fitting close up against the discs *R* in such a way that the pawl may fall in the space between two of the teeth of the ring, or may run clear of the same, according to the position of the end of the pawl in its notch in the disc. By this means, in passing round a curve, the outer wheel, having to cover a greater distance than the inside one, the toothed ring becomes released from the pawl and runs free, the inside wheel only being driven. As soon as the vehicle is again on the straight, the pawl once more falls between the teeth in the toothed ring, the two wheels then being rigidly connected up to the axle and receiving impulse from the motor. The makers state that they have given this device an exhaustive trial before adopting it in their vehicles, and claim that it allows of curves being taken at a greater speed than is prudent with vehicles depending on differential and chain gear. Two brakes are provided, one actuated by a hand lever and the other by a foot pedal. All the driving mechanism is suspended below the frame, thus throwing the centre of gravity low down and reducing the possibility of the car turning over, at the same time permitting different types of bodies to be fitted to the frame. Universal joints are introduced in the axle *W*, to allow for any inequalities in the roads traversed, the spur wheels *TT* being kept in gear by means of arms *X* connecting the shaft *S*, with the axle *W*.

THE *Weekly Dispatch* and *Referee* are continuing the use of motor-cars in delivering their papers. The other Sunday a

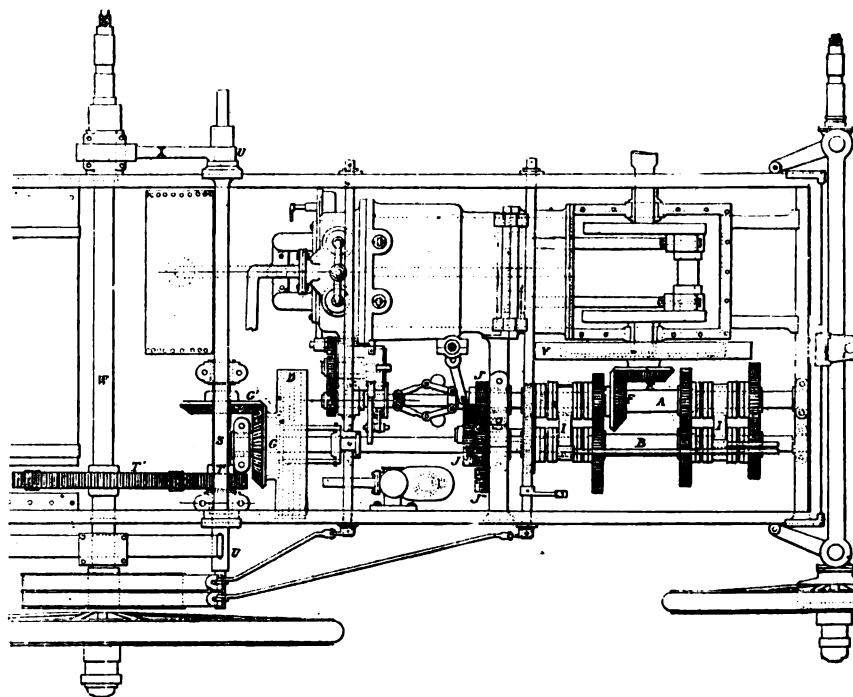


FIG. 2. PLAN OF BROUHOT MOTOR-CAR.

number of motor-cars carried copies as far as Greenwich, Brockley, Richmond, Kingston, Dulwich, Streatham, Tottenham, Croydon, Kilburn, Highbury, and Putney. The heavier cars have, as already mentioned, been supplied by the London Motor-Van and Wagon Company, Limited, of Tottenham Street, W., while the Motor-Car Company, 168, Shaftesbury Avenue, W., have furnished several light cars for the purpose.

## MIDLAND MOTOR NOTES.

By "HERCULES."



## The Motor Industry.

THIS is a season for retrospection, and the motor industry certainly presents as good a subject for our article as any other trade. In fact, I shall be justified in going further than this, and stating that no other industry has made such progress. This might be proved by a comparison of the number of firms now engaged in the manufacture of motors, cars, and fittings, with those that were identified with the trade in 1898, as well as by the degree of perfection now attained as compared with that of twelve months ago. I can count up nearly twenty firms in the Midlands which have decided during the present year to have a share in the success which is almost certain to follow the efforts of a well-organised and carefully-managed motor-manufacturing business, and in several cases I know the results at the present time are most encouraging. With some firms much that has been done has been of a purely experimental character, the managers being determined to place vehicles on the market which shall be better than anything that has yet been offered. Everyone admires the tenacity with which these firms have clung to their purpose, have spared neither expense nor labour, and have discarded everything which has not come up to their standard of perfection. In several cases, motor-vehicles have been turned out which have taken a high position in the motor world, in other cases valuable improvements have resulted from these experiments, and there is little doubt that the motor-car exhibition at the Agricultural Hall in April next will witness a very great advance upon the motors of this year.

## Some Busy Firms.

THE firms which have already built up an enviable reputation—like the Daimler Motor Company, the Motor Manufacturing Company, etc.—have been busily employed in building motors and vehicles of various patterns, from the handsome little phaetons to the more cumbrous chars-a-banc and mail waggons. To give an idea of the busy period which these firms are passing through, I may say that I was told by one of the managers the other day, that he had no fewer than ninety orders for motors in hand at that time, and I know that the other firm was equally busy, the demand for motors, "bodies," wheels, and fittings, in this case being such as to cause the whole of the employees to work overtime. These firms are amongst the most progressive, and their productions contain many new features which have been proved by tests to be improvements, not in name only, but in reality. The result is the few breakdowns which one hears of, and the growth of the confidence of the public in the latest form of progression.

## Motoring in Winter.

THE weather recently has not been all that motorists could desire. For a fortnight not a gleam of sunshine was to be seen, fog, dampness and searching wind alternating, whilst underfoot was ice, snow, or slush. Motoring under such conditions one would have imagined to be anything but enjoyable, and some would have required a good deal of argument to convince them that it was quite safe. Yet there were those who thought otherwise. On the coldest days, with the snow frozen well-nigh as hard as adamant, a large char-a-banc and a number of smaller vehicles made trips as far as Leamington, and the passengers all agreed that notwithstanding the keenness of the air the ride was one of the most enjoyable they had ever had. In the streets of the city, the motor-propelled vehicles have, if, anything, been more active than usual, and I have heard of no instance of skidding or slipping in turning the awkward corners which are to be met with. On

Christmas Day when the sun shone brightly and the roads were dry, a number of motor-vehicles were to be met, with good loads of pleasure seekers, and many of those who saw the vehicles sailing along so finely wished they were in a position to charter a motor-car for a run into the country.

## A New Concern.

THE Automobile Supply Company should meet a long-felt want—to use a useful phrase—in Birmingham. This company are leaving no stone unturned to make their establishment in Broad Street, Birmingham, one of the best in England for the supply of automobiles and accessories. They have the advantage of handsome show-rooms in which a carefully selected stock of motor-cars and motor-cycles are to be seen, including French cars of a very pretty design, secured by Mr. Scarborough during a recent visit to France. The firm also possess exceptional facilities for carrying out any kind of repairs to motor-cars, etc. A new two-speed gear, the advantages of which are said to be many, is a device which deserves the attention of all motor-cyclists.

## CORRESPONDENCE.

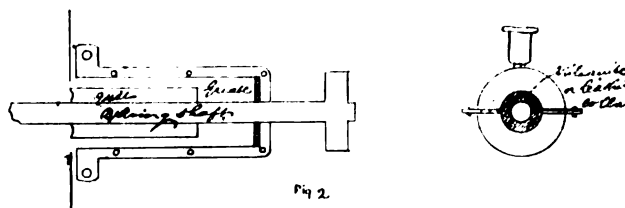
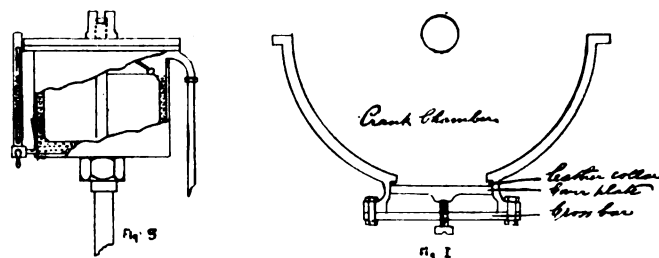


## DETAIL IMPROVEMENTS IN DAIMLER MOTOR-CARS.

To THE EDITOR OF *The Motor-Car Journal*.

SIR,—Having used a Daimler motor-car for the past fifteen months several small matters have suggested themselves to me which, in the hope of their being useful to other motorists, I send for publication, if you think them of sufficient interest to your readers.

Soon after first running my car, from some cause, the white metal of the connecting rod brass melted out, and to renew the same it was necessary (as constructed) to remove the cylinders and all attachments down to the half of the crank chamber. When this was done, before refixing it occurred to me that if the same renewal should again be necessary it might be accomplished with a fraction of the trouble involved by having a door at the bottom of oil chamber. This was easily arranged by cutting out the bottom of the same in the lathe and fitting a cover and leather collar in the recess formed, secured by an iron cross-bar and two bolts with



set-screw in the centre to tighten with. The arrangement has answered remarkably well, and enables one to inspect and adjust the brasses periodically, the operation of getting at same and closing up again occupying but five minutes instead of two days (see rough sketch, Fig. 1).

Fig. 2 is intended to represent a cover and grease case for "quill" which slides from the gear-case, and through which the driving-shaft works by being covered and always working in grease. I find the brasses after several months' running show no signs of wear. Previously the grit adhering to the oil was drawn

into the brasses each time the car was reversed, and speedily caused perceptible wear. It is made of sheet copper (in halves), and a vulcanite collar bored out to fit the driving shaft, and is cramped into place by bolting up two halves of the case. The collar is passed over the shaft by cutting one side of it, the whole being held firmly by two lugs passed under the nuts of the gear-case bearing.

A little accident to a friend's car during the autumn tour of the Automobile Club this year led me to devise the following means of safety, viz., an overflow pipe from the float chamber at a lower level than usual, and continued well to the rear and underneath the car, that in the event of any overflow it is discharged well away from the lamps. As usually working now, the level of discharge and close proximity to the lamps is no doubt dangerous. In addition to its being lower, it will be noticed that an open tube is fixed round the top of the valve spindle, which gives an extra  $\frac{3}{4}$  in. protection from overflow.

I would mention that since arranging my float on above plan, I have seen Mr. Estcourt's car, and the same idea has also occurred to his mind; the only difference being that in his plan it discharges from the top of the float chamber and on to the front dashboard. I have also recently attached a glass gauge on the float chamber, which is exceedingly useful in showing the working level of petrol (see Fig. 3).

Yours faithfully,  
Colchester, December 23rd, 1899. ARTHUR O. STOPES.

### THE BENZ MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—On first reading the most remarkable production under this heading in your last issue we intended to treat it with the contempt it deserves, viz., silence; but as this might be misunderstood by some of your readers we beg to say there is not a shadow of foundation in fact for the statements made.

With regard to the supply of Benz cars in the United Kingdom we are to all intents and purposes Benz and Co., and no guarantee is of the slightest value unless given by us. One word of advice we will give. Don't part with a penny piece to any person or persons for a Benz car till you have the car in your possession. None of our agents are authorised to ask for any cash in advance.

6, Dean Street, Soho, London, W. Yours truly,  
HEWETSONS, LIMITED.

December 27th. (Sole representatives for Benz and Co.)

[The correspondence on this subject is now closed.—ED. M.C.J.]

### NEXT YEAR'S RACING SEASON.

TO THE EDITOR OF *The Motor-Car Journal*.

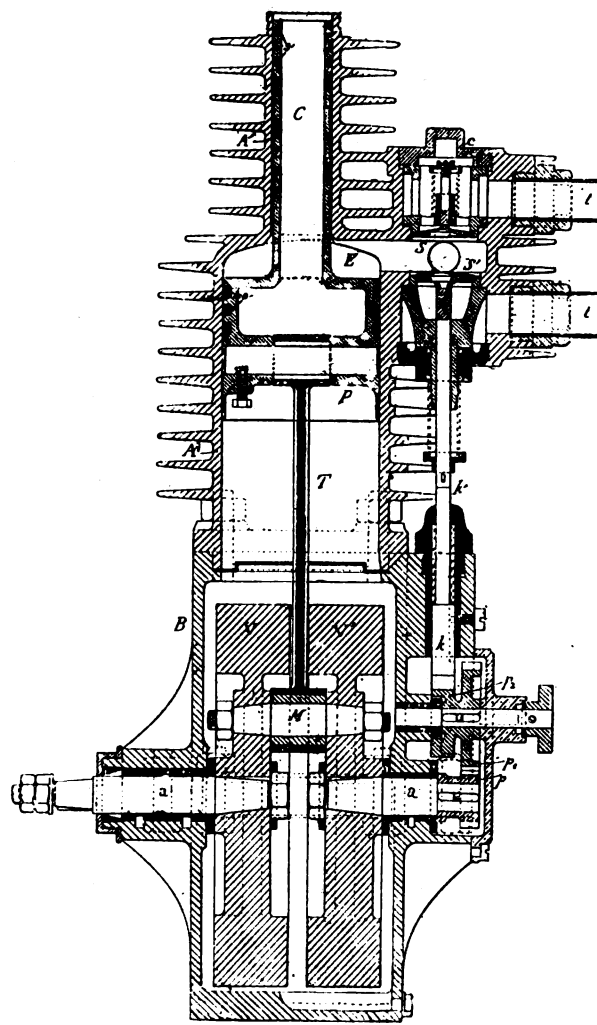
DEAR SIR,—In one of your recent issues I read that several English automobilists were preparing for next year's racing season in France by having 20 h.p. cars built. The paragraph from your continental correspondent in the last issue stating that cars with motors of 50-h.p. and even 100 h.p. are in course of construction in France must have come as a surprise to those who were hoping to successfully compete in the *courses* organised so freely on the other side of the Channel. So far, the two English *chauffeurs*—the Hon. C. S. Rolls and the Hon. J. Scott-Montagu, M.P.—who have raced on the Continent have only participated in the "tourist" class—never in the racer's category. In view of the fact that such high-powered cars are being got ready by our French adversaries, much as I would like to see it, I am afraid it will be a long time ere we are able to bring the first prize in the racers' class in any of the French *courses* to this country.

Yours, etc.,  
Bedford, December 27th, 1899. LOOKER-ON.

IMPROVED BRITANNIA MOTORS, LIMITED, is the title of a company which has been registered with a capital of £100,000 to acquire and deal with any patents, concessions, and privileges, to manufacture, sell, let on hire, or otherwise deal in and to act as factors of and agents for sale of motors of every description, cycles, bicycles, tricycles, velocipedes, carts, batteries, accumulators, electrical and other apparatus and machinery, etc.

## THE "MINERVE" PETROLEUM-SPIRIT MOTOR.

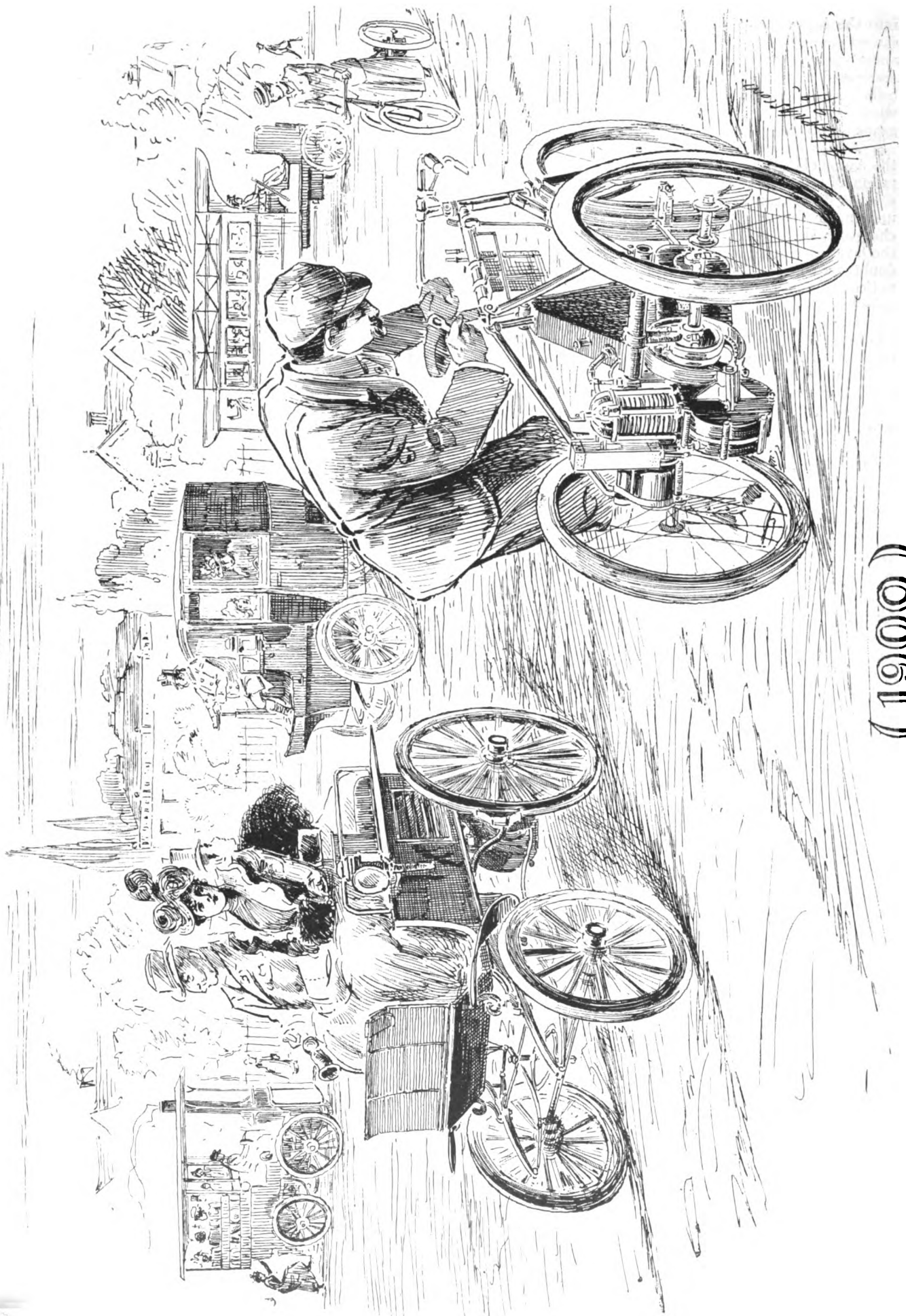
A NEW petroleum-spirit motor known as "La Minerve," has just been put on the market in France by La Société La Minerve, of 30, Rue du Point-du-Jour, Billancourt (Seine). The feature of the new engine is that, in addition to the radial ribs, a system of internal cooling has been incorporated. Referring to the sectional illustration herewith, it will be seen that the piston *P* is provided at its upper end with a prolongation in the form of a chimney *C* working in a small cylinder, provided with external ribs *A*. The chimney is fitted with piston rings to make a gastight joint.



This compound piston is hollow throughout, so that by this means the interior of the piston *P*, and also the interior of the crank case is in constant communication with the air, which is continually being drawn in by the up-and-down motion of the chimney *C*. It is claimed for the new arrangement that it not only keeps the motor more cool than when ribs alone are relied upon, but that it permits a greater degree of compression to be given to the explosive charge. The other portions of the motor do not call for special comment. It may be mentioned, however, that special provision is made for the lubrication of the chimney-cylinder. The diameter of the latter is 34 m.m., that of the cylinder proper 85 m.m., and the stroke 80 m.m., the motor being capable of indicating  $1\frac{3}{4}$  a.h.p., and weighing complete 74 $\frac{1}{2}$  lbs.

THE Atcham District Council has decided to support the recommendations of the Yeovil Rural District Council regarding the speed of motor-cars. At the meeting at which the decision was arrived at the chairman said "there was no doubt that these things must be kept under control. Only the other day he saw one passing over the English Bridge at something like forty miles an hour."

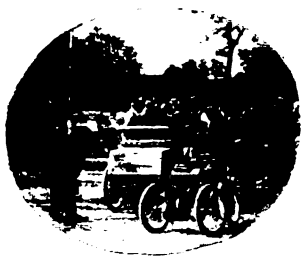




(1900)

## THE MOTOR-CAR EXHIBITION IN PARIS.

(From Our Own Correspondent.)



THE Exposition Internationale du Cycle, more popularly known as the Salon du Cycle, which has been attracting crowds to the Salle Wagram, Paris, during the last fortnight, closed its doors on Wednesday after a more than ordinarily successful run. The title of Cycle Exhibition has been altogether a misnomer this year, for the show has been practically one of auto-

mobiles, automobile parts and accessories, and cycles as a class have been almost overlooked. Those cycle manufacturers who were represented had evidently directed most of their attention to the production of motor-cycles and light voiturettes of the cycle type, to the almost entire exclusion of the pedal-driven machine, thus affording yet another proof of the trend of public favour. Interesting as has been the show, there existed but very little novelty, and one searched in vain for a really radical improvement. Any new motors shown so closely resembled one or other of the leading types that they called for no special attention, and while it has been interesting to observe the ingenuity displayed by manufacturers in their methods of attachment of well-known motors, like those of De Dion, to their own small cars, yet this is after all but a minor matter, and it is to a new and more efficient engine that we must look for any solid advancement of automobilism. The exhibiting firms numbered two hundred and seventeen, and every nook and corner of the two spacious halls was occupied; indeed, the applications made considerably exceeded the space available.

On entering the hall the first stand observed was that of the American Automobile and Motor Company, who were displaying three "Stanley" cars, as described in the *Motor-Car Journal* of December 8th. Beautifully finished in every detail, these vehicles commanded much favourable comment, but the showing of steam when under weigh will probably prove an objection to their employment in London, where the law and police regulations are strictly enforced. The American Company also exhibited an electric "Stanley," the general appearance of which was almost identical with the steam vehicles.

Adjacent to this stand was the *emplacement* of MM. A. Darracq et Cie., who made a very effective display of tricycles, quadricycles, and voiturettes, fitted either with De Dion or Gaillardet motors. In addition to these automobiles, which are so well known under the mark "Perfecta," there was exhibited a Léon Bollée voiturette similar to those which attracted considerable attention at the Tuileries Exhibition in the spring. A rather novel mode of attachment was instanced in the case of one of the voiturettes, the Gaillardet motor being affixed on the left-hand side of the car, half above and half beneath the footboard.

Mention of the Gaillardet engine reminds me that some of the most important features of the show were to be seen at their stand. These comprised a new horizontal single-cylinder motor of 5 h.p., fitted with water-jacket throughout; a small neat voiturette provided with a 3½ h.p. air-cooled engine, and a new light three-seated car propelled by the 5 h.p. motor above mentioned. This latter vehicle was well worthy of attention, as, in addition to the excellent workmanship displayed both in the engineering and carriage-building details, the general arrangement and lines of the car gave one the impression that it was a thoroughly serviceable vehicle. It is a two-speeded car, the driving being effected by a single belt of considerable length, and the change of speeds by means of cog gearing. Wheel steering, levers for regulating gas and ignition, and powerful brakes are all conveniently placed for the driver. At the price of 4,900fr. (£196) this vehicle was one of the cheapest in the show.

A somewhat interesting car was shown by the Société des Automobiles Légères. Built on a system closely resembling the

Benz, the engine develops 5 h.p., which is ample for the light two-seated vehicle to which it is attached. The feature of the car is the attachment of a long powerful lever at the right-hand side of the driver by means of which the engine can be started without the conductor being required to descend from his seat.

The Société des Voitures Automobiles Decauville were showing for the first time a new car fitted with a two-cylinder 5 h.p. motor, water-cooled, which is likely to prove a popular and handy little vehicle. In addition, several of their well-known ordinary type of voiturettes were on view, including the vehicle which finished third in its category in "Le Tour de France."

On the stand of the Société "l'Energie" was found a single example of the Renaux tricycle, which, during last summer, achieved the wonderful performance of travelling from Paris to Saint-Malo, a distance of 372 kilomètres, in 7 hours 11 minutes.

MM. Mors, Delahaye, and Vallée showed examples of their small cars, which are now too well-known to require comment.

The Palais des Chauffeurs had two pretty voiturettes, one fitted with one, and the other with two Aster air-cooled motors on the front axle. The former developed 2½ h.p., while the latter, of course, possessed double the power. Through the bottom board of each vehicle there projected a large foot pedal, which in its normal level position kept the motor out of gear. Pressed upon by the heel the power was applied to the car, while if the pedal was inclined in the other direction—that is to say, with the toe downwards—the motor was immediately disconnected and a brake applied.

Another voiturette fitted with an Aster motor was that shown by MM. Rouxel and Arrault, but in this instance the combustion chamber had been provided with a water jacket. This car is fitted with three seats, and all the manipulating levers are conveniently placed for the driver.

The Société Créanche exhibited a smart 4 h.p. electric car, similar to that illustrated in the *Motor-Car Journal* a fortnight ago. The capacity of the vehicle is stated to be eighty-five kilomètres, without recharging. Two motor-cycles, one a racing machine, and both fitted with De Dion motors, were likewise shown, as was also one of the Société's well-known voiturettes, propelled by a 3 h.p. water-cooled De Dion motor.

Monsieur Hugot, who manufactures one of the smallest and neatest of the De Dion or Aster-motored voiturettes, was exhibiting a single example of his workmanship. This small car, which has already been illustrated in these pages, only weighs 3½ cwt., and the construction permits of the motor being started by the driver from his seat.

Other constructors employing De Dion or Aster motors were the Société Française des Cycles sans Chaîne et Automobiles, the Société Métropole, the Société Impétus, M. J. B. Mercier, M. J. Théodore, and La Société l'Industrielle. This latter firm turn out the voiturette known as the "Stella," constructed on the system of H. Gérard. The car is excellently suspended on a steel tubular frame, and weighs less than three hundred-weight. It is provided with two speeds, the higher one running to about twenty miles per hour. Projecting from the footboard is a handle attached to a steel band by means of which the motor is started without necessitating the driver to dismount. The vehicles displayed by the Société had evidently been somewhat hastily prepared for the exhibition, as one or two minor details were missing.

M. Lansalut had on his stand a small two-seated voiturette carrying a 2½ h.p. motor placed in an inclined position in front. Provided with three speeds, this car is specially designed to provide a cheap yet strong conveyance to those whose business or pleasure calls them from place to place situated within a moderate distance of one another.

MM. Werner Frères et Cie. displayed several of their motor-bicycles, and in this connection the machine of MM. Lamaudière and Labre is deserving of notice. This bicycle weighs thirty kilos, the motor itself only weighing eight. This, latter, which it is said can be attached to any ordinary bicycle, runs at 2,000 revolutions per minute, and develops 1½ h.p. It is a single-cylinder engine, and is attached to the diagonal stay of the bicycle. It drives by means of a belt on to a large pulley

fixed to the rear wheel, the belt being kept taut by a kind of jockey pulley actuated by the rider.

The Automatic Magneto-Electric Ignition Company exposed the interesting apparatus demonstrating the Simms-Bosch magneto-electrical ignition device already well known in England.

M. Lepape exhibited his motor, the principal feature of which is the carburettor, in which the float so generally employed is dispensed with. The inventor claims that no amount of vibration or alteration in the level of the petrol in the reservoir can effect the working of his apparatus.

A car previously seen at the Tuileries Exhibition was that constructed by the Société des Automobiles Turgan-Foy, in which the two-cylinder motor is placed horizontally and transversely in the front of the vehicle. Four speeds and reversing are obtainable by a combination of cog and belt gearing. No water is used, the motor being air-cooled, in which connection the large fly-wheel that is carried is stated to materially assist. An illustration and description of this car was given in the issue of October 6 last.

Messrs. Daniel Augé and Co. exhibited one of their 4 h.p. "Cyclope" motors, and also the complete frame of a small car carrying an engine of this type. This was provided with two speeds and reverse, and weighed less than 7 cwt.

M. Barré showed several motor-cycles fitted with the De Dion motors, and also a nicely arranged three-seated light car provided with a 4 h.p. Gaillardet engine. The vehicle is fitted with two speeds.

MM. Dalifol and Thomas showed a two-seated voiturette fitted with one of the firm's "Abeille" motors, illustrated in a recent issue. This is an air-cooled engine, but the combustion chamber is water-jacketed. It develops 3 h.p.

"Auto-motor" tricycles were shown by MM. Chavanot, Gros, Pichard, and Co., and MM. Hauzer Frères. A remarkably neat car was that produced by MM. Wehrle and Godard-Desmarest, for the 3 h.p. motor and the gear is hidden away until the vehicle exhibits but little sign of having such powerful organs in its interior.

MM. Farman and Co. had at their stand an assortment of accessories and spare parts, including also a very handy combined lifting jack and support for motor-cycles.

One of the prettiest voiturettes was that exhibited by the Etablissements Pieper of Liège (see *Motor-Car Journal*, December 15). This little vehicle is provided with a 3 h.p. single-cylinder vertical motor placed in the fore part of the car. The size of the cylinder is 80 mm. and the length of stroke 120mm. It is water-jacketed; the water connections are provided with a steam separator. The power is transmitted by means of a single belt, and two speeds are provided, the intermediate "vitesses" being obtained by the regulation of the point of ignition. Two powerful foot brakes are attached, and the entire vehicle is excellently finished throughout. The price of £160 is distinctly moderate.

Les Fils de Peugeot Frères only showed cycles and a "quad" fitted with a De Dion motor; while the exhibits of MM. De Dion and Bouton comprised several examples of motor-cycles, together with a specimen of their voiturette carrying a placard announcing the fact that 635 of these cars had been ordered since the Tuileries Exhibition.

MM. Delaunay et Cie. had on show a variety of their "Romains" motors and cycles. This is an air-cooled engine of 3 h.p. Three small cars were exhibited by MM. Renault Frères, one design in the shape of a particularly neat little *coupe* being very attractive. A steadily increasing demand for this make of voiturette exists, and the constructors have a large number of orders on hand.

Considerable attention was directed to the stand of MM. Ouzon et Cie., the Paris representatives of the Société des Automobiles and Moteurs Soucin and Cyclone. It will be remembered that on the former motor Béconnais accomplished some of his most wonderful records towards the close of last summer, and it was also on this type of engine that Villemain achieved his marvellous performance this month on the hill of Gaillon. The ordinary motor is of 3½ h.p. and weighs 31 kilogs., but the racing pattern develops 4½ h.p.

A somewhat curious little vehicle was that presented by MM. Gallet and Itasse. Propelled by a De Dion motor attached to the back axle, it weighs less than 3 cwt., and is sold for £134. The steering gear is so arranged as to bring back the front wheels into a straight line should the driver's hands be removed from the steering wheel.

The Gladiator Company showed a very dainty voiturette which should command a ready sale. It is a two-seated car fitted with a new type of Aster motor. This little engine is of the single-cylinder horizontal type, and develops 3½ h.p. Masson's electric ignition is attached. The motor is carried on the fore part of the car, and the large carburettor usually employed with the Aster motors has been suppressed. Two speeds and a couple of powerful brakes are provided.

An example of the new two-seated voiturette fitted with a Léon Bollée motor, as illustrated in the last issue of this journal, was shown by the Société des Voiturettes Auto-mobiles. Here the motor has been turned round the other way, in order to secure more efficient cooling, and the two seats are placed side by side.

The exhibits of the Société des Etablissements G. Richard consisted solely of cycles, and a single example of the Vivinus voiturette, another car which has already been illustrated in these columns, the French rights of which have been purchased by this firm.

M. Shepard's exhibit was a small car fitted with a Doré air-cooled motor, as described on page 630 of this journal. It is carried in the fore part of the vehicle, and the power is transmitted by belting.

In addition to the above exhibits there were many others affording plenty of interest to the purchaser, but presenting no new features to those engaged in the industry. Taking a hint from this year's exhibition one may safely expect that the Salon du Cycle of 1900 will be an automobile show pure and simple, and that the ordinary pedal-driven machine will have entirely disappeared from the scene.

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ANOTHER automobile race for 1900 is announced by the *Vla.* This is the National Swiss race, organised by the Swiss Automobile Club, and open to the world. The route selected is Geneva, Aix-les-Bains, Chambéry, Seyssel, Geneva, a total distance of 175 kilomètres.

AN Automobile Club has been organised at Chicago by Messrs. J. Ogden, Armour, E. Walter Herrick, Samuel Ivaull, F. K. Pulsifer, and Andrew R. Sheriff. The new club has for its objects the promotion of automobilism and social relations amongst the users of automobile vehicles. From the large and rapidly increasing number of automobiles in use at Chicago the club is expected to be a great success. It is proposed to arrange races and tours.

M. PAUL MEYAN writes in the *Figaro*:—"Not satisfied with emigrating to Belgium, our *chauffeurs* are now crossing the Eastern frontier. It is said that M. Loysel, who won the first Bordeaux-Biarritz race, and was the first to make the kilomètre record at Achères, intends running, as a member of the Automobile Club of Germany, a car built in Alsace-Lorraine from French designs and patents. It would really seem as though the A.C.F. committee should take some action in the matter. We should not be exposed to seeing the envied International Cup taken away from France by Frenchmen for Belgians or Germans."

THE second annual report and balance sheet of Stirling's Motor-Carriages Ltd., of Hamilton, has been issued this week, and we are pleased to observe that in addition to writing off over £5,000, a dividend of 5 per cent is declared. This is at the same rate as last year. Our Scottish correspondent in commenting on the report remarks: "I believe this concern was the first manufacturing company in this country in the motor-industry to pay a dividend to its shareholders, and considering the great and unforeseen difficulties which almost invariably arise at the beginning of a new industry, the management of this company is to be complimented and the shareholders congratulated on this fact."

## MOTOR-VEHICLE DESIGN: SOME GENERAL NOTES.\*



OF the many plans for motor vehicle construction that have come my way I fail to remember even one that was not more or less influenced by the horse-drawn vehicle. This is natural, since the experience gathered from long acquaintance with the coach-builder's art, as well as familiarity with the horse and his burden, gave the impression that a horseless vehicle was simply minus the horse. Following this line of thought, most designers struggle to make the self-propelled carriage as innocent of machinery and as short as

though a horse were to be attached at any time. I can account in no other way for the fear shown by some horses at the approach of a motor-vehicle; it is, to them, the very evident lack of something quite essential to the orthodox wagon.

Of course, if a motor-vehicle is to be built simply as an experiment to demonstrate the capabilities of some untried motor, and if funds are lacking for a thorough combination of the motive power and the carriage, then there is little choice, and the designer casts about for a carriage already in the market that will bear the weight he proposes to add; or, failing in that, to get such supplies from the dealers in carriage hardware as will permit him, with a minimum of expense, to put his venture to the test. Unfortunately the ease with which one may do this starts the designer in a groove from whence he does not escape, and taking a catalogue of some coach-builder as a guide, he selects a body, makes a tracing of the outlines, and transfers his motor thereto. Should he find that he cannot get all the machinery within the limits, he lowers the floor and extends the box of the body upward and backward. A drawing of this kind has been submitted to me within the past few weeks. It was of a rather high two-seated carriage; under the one seat was the boiler and under the other was the engine. The carriage was a stock affair, and no conception of the motor-vehicle had in all probability ever entered the mind of the builder. The dashboard was exceptionally high—perhaps a little carelessness on the part of the draughtsman in copying may account for this. I have always considered the dashboard, most of all, a protection against the filth and dust created by the horse. Remove the offending source and the need of a guard lessens. To be sure motor carriages may raise mud or sand, etc., ahead of one on the road, but this trouble is not of so much importance as the one just mentioned.

Should a company decide to apply a compact power unit to wagons already in use, say the wagons of the large express companies—and this is a most promising field—then the designer must make the best of the situation and tie his Pegasus to the truck as necessity shall require.

When the machinery is concealed from the spectator on the curbstone it is generally equally out of sight of the driver, who should be able to cast a watchful eye upon the motor now and then, however trustworthy it may prove. Let us suppose that some slight mishap occurs, such as might be the lot of a bicyclist: how easy if the machine is in plain sight to get at and fix the trouble just as you would an ordinary wheel. I remember a motor-vehicle on a country trip exhibited symptoms of something being loose about the engine crank, and the owner got down on his back (the engine being near the ground), removed the crank case, and managed to empty the contents (crank case oil) over his clothes.

The point is sometimes raised that the motive power is

enclosed to protect the machinery. As a rule the power outfit is not wholly protected, the under side being frequently open; hence this statement appears to have little weight. I take it for granted that the sight of nicely-proportioned metal work is pleasing to the eye, and that there can be no æsthetic objection to seeing the engine or motor. Again, the motors adopted are self-contained, the engines having a crank case and the electric motors being iron-clad, so that dirty oil is not thrown off to ruin clothes any more than weather or road conditions can damage them; in short, if the engines are visible, there need be nothing offensive.

There would be an advantage in having an explosive engine where the air could freely circulate about the cylinder, and the cooling effect of the circulating water or of the heat radiating flanges would be greatly increased. Out of the many owners of steam yachts I have met, not one but exhibited with pride the propelling plant, and there is in the motor-vehicle nothing of a permanent type that cannot be brought to the light with equal satisfaction. The cylinders, boiler, etc., can be lagged with mahogany, bound with nickel or aluminium strips, and the metal base nicely enamelled in bicycle finish.

There is another consideration: bringing the machinery to plain view would mean neat and simple designs. The omnipresent sidewalk critic would soon point out the real blemishes, and the efforts to have smooth running, natty-appearing mechanism could not but have a highly beneficial tendency upon motor-vehicle design. The horse-drawn equipage must have considerable length over all, and therefore the carriage is shortened as far as practicable, bringing the axles close, and unless guards are used, making it difficult to step into or out of the vehicle without soiling the clothes. When the motor-vehicle designer slavishly copies the horse-drawn carriage he borrows the troubles inherent thereto. Certainly the shorter his wheel base the smaller the circle in which his carriage can turn, other things being equal, but he can afford to place his forward wheels further ahead, since his facilities for manoeuvring are much superior. Between the wheels ample provision can then be provided for entrance or egress.

Should the motor be placed ahead of the carriage, then the shaft can be connected to the driving wheels by bevel gears, or chain, running aft to the compensating gear. The connecting shaft passing beneath the driver would afford a good opportunity for connection of speed-changing devices without the usual lengthy complicated linkage to operate the same.

The designer who has to adapt the body to the running gear may, with advantage, use a kink in vogue by some machine-tool draughtsmen, who have a jointed model of the human frame, made of cardboard or sheet metal to some determined scale, which can be made upon the drawing and the limits of the action of the limbs in moving handles or foot levers easily ascertained. In the case of a foot brake such a model is of great value, since it is easily understood that the leg acts precisely as a toggle joint, and starting from a completely flexed position to the full extension of the limb the effective thrust gradually reaches its maximum, until as the leg becomes straight the sign changes. The model, therefore, serves to obtain the best position for the brake relative to the height of the seat, etc. The brake lever is often pivoted some distance below the flooring, so that the arc traversed may be as long as possible. If sufficient leverage can be obtained near the point of application of the brake to the wheel, then the foot plate may be inserted in a metal slide in the bottom of the carriage body. It is to be noted that, if the foot brake is placed where the operator can get the full force of his advantage in position, the brake lever must be proportioned to stand the corresponding strain. The maximum pressure on foot levers is usually assigned as 180 pounds, though much less than this is allowed in bicycle calculations. As the brake is an emergency feature, however, economy in weight might be dearly bought.

There is a tendency toward dependence upon the tires for easy riding rather than upon springs interposed between the body and the running gear. In part this is the effect of a desire for a simpler connection between the two, and this hope is feasible, as shown by some of the light steam vehicles de-

\* By R. L. Clegg, in *The Horseless Age*.



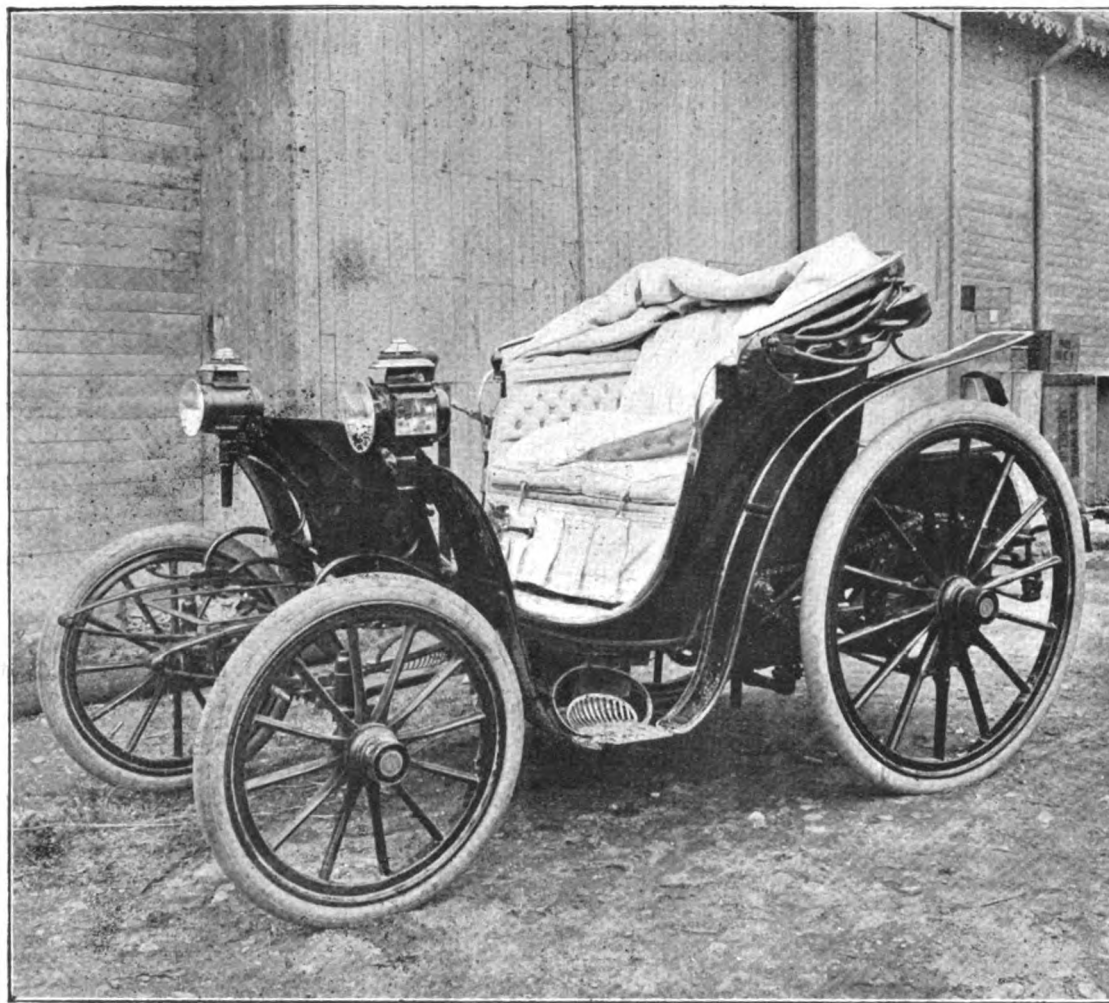
scribed in these columns. When, however, this plan is tried simply to use the body as a bed or frame on which to attach the motive power, then the results are not conducive to easy riding, and the discomfort increases with the weight of the carriage. Anyone may test this by blocking the springs under a bicycle saddle. If the machinery is bolted to the body, suitable guides are necessary to preserve the distance and alignment of the transmission devices, assuming that there is any attempt to introduce springs between the frame and body. These guides are arranged vertically, and hence the shocks due to the meeting of the wheels with obstructions or inequalities in the road are transmitted through the slides as well as through the springs, the latter thus being only partially effective.

The lighter the body the greater its range of movement, the greater the resilience of the supporting springs, and the greater the arcs of action over which the sharp reactions of the wheels

## THE AUDIBERT-LAVIROTTE MOTOR-CARRIAGE.

—8—

IN a recent issue we illustrated a light three-seated motor-car constructed by Messrs. Audibert and Lavirotte, of 12, Chemin des Quatre-Maisons, Lyons. We are now able to give an illustration of the elegant four-seated carriage constructed by this concern. The vehicle is propelled by a horizontal petroleum-spirit motor of the firm's own design, a single cylinder 6 h.p. engine or a two cylinder one of 7 h.p. being fitted as desired. It is provided with a water-jacket and electrical ignition, and is located in the centre of the rear part of the frame, the power being transmitted by belts working on fast and loose pulleys from the motor shaft to the counter-shaft, and from the latter to the rear road wheel axle by the usual



THE AUDIBERT-LAVIROTTE MOTOR-CARRIAGE.

on uneven roads are distributed. If, in addition, the motor is severed from all connection with the body then another source of vibration is removed.

A RECENT publication of the Leach Motor Vehicle Co., of Everett, Mass., gives interesting information regarding steam automobiles. Complete specifications, illustrations, etc., of the Leach motor-carriage are given.

THE Folkestone and District Motor-Car Company, Limited, has been registered with a capital of £1,000, to carry on the business of omnibus, tram, and cab proprietors, electricians, engineers, etc. The registered office is at 8, Shellons-street, Folkestone.

sprocket wheels and chains. Three speeds are provided, either of which may be put in action, or the engine thrown out of gear with the intermediary shaft, by means of a single lever. The vehicle may also be propelled in a backward direction; this is effected by means of a cable which normally runs slack, but which can be tightened by means of a jockey pulley controlled by a foot pedal. Storage accommodation for spirit is provided sufficient for a run of from 200 to 250 kilometres. The makers claim that their vehicle can attain a speed of thirty kilometres (18½ miles) per hour, and that it can mount gradients of from 10 to 12 per cent. As will be seen from the illustration, the front or steering wheels are mounted on verticle pivots, while all are fitted with pneumatic tyres. The speed control levers are all mounted on the steering standard, while provision is made for the starting of the motor by means of a detachable handle.



## THE LAMAUDIÈRE-LABRE MOTOR-BICYCLE.

**Q**UITE a number of new motor-bicycles have lately been introduced in France, among which is that made by Messrs. Lamaudière and Labre, 41, Rue du Bois, Levallois-Perret (Seine), which is illustrated in Figs. 1 to 4 herewith.

The motor, which is of the single-cylinder petroleum-spirit type, forms part of the main down tube of the frame. The upper part of this tube *a* (Figs. 2 and 3) terminates in a flange *b* bolted to a similar flange on the upper end of the cylinder. The lower part of the tube *a* is connected to the crank case of the

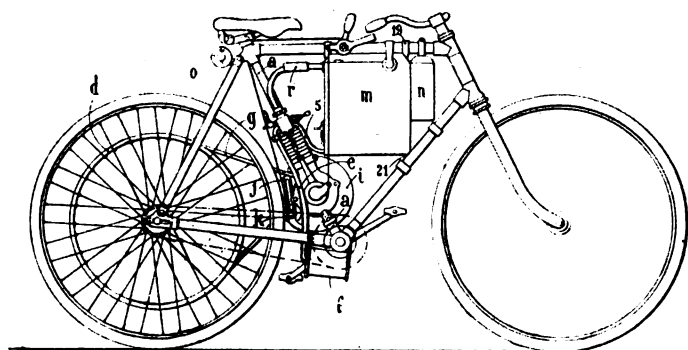
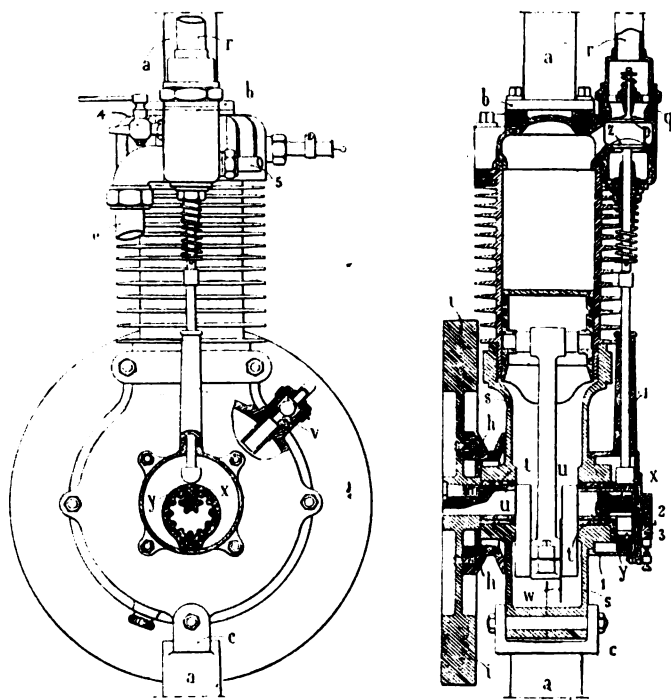


FIG. 1. GENERAL VIEW OF LAMAUDIÈRE AND LABRE MOTOR-BICYCLE.

motor by a forked piece *c* and bolt, as shown in Fig. 3. The fixing of the motor in this position is claimed to give a low centre of gravity, so increasing the stability of the machine.

The motor runs at a speed of 2,000 revolutions; it is said to develop  $1\frac{1}{2}$  h.p., and weighs only  $17\frac{1}{2}$  lb., fly-wheel included. The inlet valve *p* and the seat *q* (Fig. 3) are screwed together in the upper part of the cylinder, and have



FIGS. 2 AND 3. SIDE ELEVATION AND SECTION OF LAMAUDIÈRE AND LABRE MOTOR.

a union screw joint which receives the admission tube *r* from the carburettor. The crank works in an oil-containing case *s* constructed of partinium, an aluminium alloy, which

extends over the motor-shaft and rests on free bearings of bronze *u* and fixed steel journal *t*. A side valve *v* (Fig. 2), in case of internal compression, allows vent for the excess of air in the crank chamber, preventing the oil from leaking through the bearings. Lubrication is automatic, secured by means of a movable washer *w* idle on the head of the connecting rod, which, at each turn, dashes into the oil and throws it up to the cylinder. The right end of the motor-shaft (Fig. 3) is cut in the form of a gear, operating internally the cam *y* of the exhaust valve *z*. A covering *l* protects this mechanism and is prolonged to form a guide for the rod of the exhaust valve *z*. The cam *y* has a prolongation *2* on which is fixed the ignition cam *3*. At the left end of the motor-shaft the fly-wheel *i* carries a pulley *h*, transmitting the power to the rear wheel. A compression valve (Fig. 2) is located at *4*, and *5* is a tube conducting part of the exhaust gases into the carburettor *m* (Fig. 1). The silencer is located at *f*, under the pedals. The carburettor (Fig. 4) is divided into two compartments, one of which *6* forms the storage tank, the other *7* serving for the vaporisation of the spirit, communication between the two

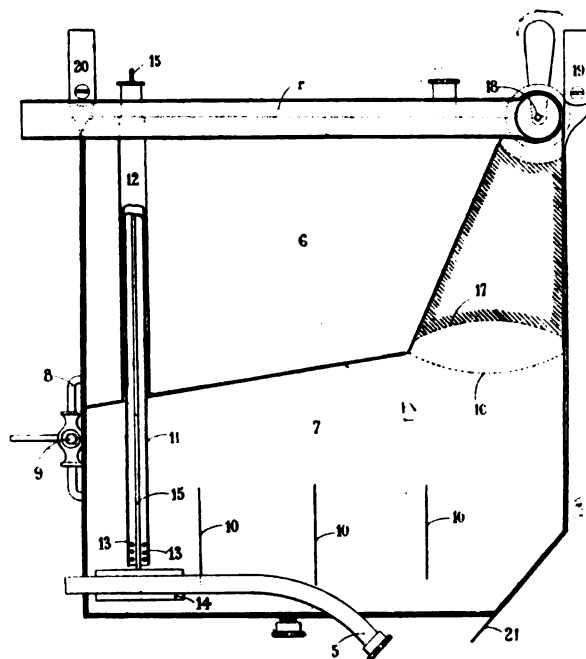


FIG. 4. THE LAMAUDIÈRE AND LABRE CARBURETTOR.

compartments being afforded by the pipe and cocks *8* and *9*. In the lower part of the carburetting portion, but not extending to the bottom, are fitted thin partitions *10* to prevent the agitation of the spirit when the machine is in motion. In the space *16*, *17* a tow plug is located, surrounded by wire gauze, this being intended to retain any excess of liquid and to give perfect and uniform carburation, notwithstanding the jolting due to uneven roads. The petrol tank has a capacity of  $2\frac{1}{2}$  litres, or sufficient for a run of 100 kilomètres.

The power of the motor is transmitted by a thin leather belting working on a drum *d* attached to the spokes on one side of the rear road wheel. This belt normally runs slack, a jockey-pulley *k*, controlled by a small handle, being provided to tighten it; the motor can thus instantly be cut out from the transmission gear. The ignition is electrical, the battery, which is carried at *n* (Fig. 1), having a capacity sufficient for a run of about 375 miles. The weight of the machine complete is given as 30 kilogrammes (66lb.). We are indebted to *La Locomotion Automobile* for the illustrations.

ACCORDING to a telegraphic despatch from New York, forty-three automobiles, belonging to the Cab Company, have been destroyed in a fire at the construction department in East Forty-third-street.

## THE "L.B." TWO-SPEED GEAR.

SINCE the introduction of the "Didier," quite a number of two-speed gears for use on motor-tricycles have made their appearance in France. Amongst these is that known as the "L.B." made by M. A. Eldin, of 21, Place Bellecour, Lyons, and illustrated herewith. It will be seen from the sectional illustration (Fig. 1) that at the end of the motor-shaft *A* is keyed a pinion, *a*, in mesh with a pinion *B*, which, with the wheel *D*, rotates on a small shaft *b*, supported in the gear case *C*. The pinion *D* gears with a wheel *E*, keyed on a hollow shaft *e* surrounding the motor-shaft. At the other end of *e* is the pinion *F*, in mesh with the gear-wheel of the tricycle. The gear case *C* is mounted loosely on the shaft, by means of the sleeve *c*, in such a way that it can be rotated. Around the sleeve *c* a ring of expanding metal *H* is arranged, the inner face of which is opposite to the sleeve *c*, while the outer face can be brought in contact with a disc, *e'*, formed on the hollow shaft *e*. This ring is broken at *h* to receive a piece *I*, the lower portion of which rests in a cavity formed in the sleeve *c*. Normally the ring *H*, by reason of its elasticity, tends

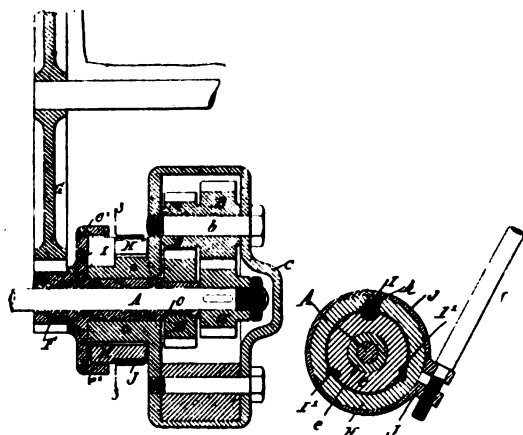


FIG. 1.

to bind on the disc *e'*. A band brake *J* is provided around the ring, by means of which the latter can be contracted and made to bind on the sleeve *c*. The method of working of the device is as follows:—When the band brake *J* is applied, and the ring *H* consequently in rigid contact with the sleeve *c*, the whole gear is held firmly; under these conditions the pinion *a* drives the pinion *B* of the group *BD*, the wheel *D* actuates the pinion *E*, and consequently the sleeve *c*, the pinion *F*, and the gear-wheel *G*. The power of the motor is thus transmitted to the latter at a reduced speed according to the ratio of the pinions. To allow the motor to drive the machine at its normal speed, the band brake *J* is released, the ring *H* regains its normal diameter, and comes into contact with the disc *e'*. As a result of the friction between the ring and the disc, the former tends to rotate in the same direction as the disc. The piece *I* alters its position, the tendency being for it to open to a larger extent the break in the ring, forcing the outer surface of the latter on to the disc until perfect contact is made between them. The gear box *C* is thus brought into connection with the disc *e'*, and the whole gear and case is driven at the same speed as the motor shaft. To change back to the low speed all that is necessary is to apply the band-brake *J*, the latter being controlled by a suitable handle fixed on the frame of the machine. The gear case *C* is oil-containing, and the maker claims that the device works without shock or noise.

ACCORDING to a report from Brussels a movement is on foot to start a service of automobiles on the Congo similar to that in the French Soudan.

## NEW AMERICAN ELECTRIC VEHICLES.

THE American Electric Vehicle Co., of Chicago, Ill., are now manufacturing eight standard types of vehicles—a runabout buggy, a four-passenger brake, dos-a-dos, trap, brougham, stanhope, delivery wagon and an open runabout. Their system, which is now well developed, exhibits a number of special features that are worthy of mention. They have adopted the single-motor equipment as most economical for this work.

The batteries of their own manufacture are claimed to be 25 per cent. lighter than other batteries employed for the propulsion of vehicles. The active material in the grid is mixed with oxide and finely divided metallic lead, and is pressed into the grid, making the latter homogeneous and compact. After going through a forming process the plates are placed in jars of special design, giving greater strength at the corners and permitting ventilation. Separators give extra support to the plates and prevent buckling, and also keep them at equal distances apart, so that they discharge equally, notwithstanding the vibration of the vehicle.

The new four-passenger brake which was on the floor when a representative of *The Horseless Age* visited the factory weighs 2,850 lbs., and is of solid construction throughout. The body is supported by four full elliptical springs, fastened by heavy angle irons firmly bolted and extending across the entire body. The rear axle is a solid bar 2½ in. square, and from it the motor is hung on sleeves, provided with turned sections which fit the clamps holding the motor, and also having two extension arms, or distance rods, supporting the bearings, which are of the ball and socket type. These rods maintain an equal distance between the axle and the gear wheel, so that through all the displacements of the motor, due to the inequalities of the road, the gears will always work on the pitch line. These distance rods are adjustable for wear or other reasons.

From the motor casing a reach bar extends to the forward axle and is swivelled thereto. Extending down from this bar is an angle arm pivoted to the motor casing, the end of which angle arm has an eye, through which passes a pivoted bolt fastening it to the motor casing. On each side of this bolt is a rubber cushion kept at equal tension by two jam nuts. In this way the strains are, it is claimed, distributed over the frame, and the motor and transmission work freely and in line under all conditions.

The forward axle is fastened to the springs by heavy clips, and terminates at each end in strong sockets to receive the steering pivots. These sockets are swedged up from the solid bar without welding. The sockets and the steering lever are made of unusual length to provide sufficient bearing surface. From the top of the steering device extends an arm to the rods connected with the steering lever. The motor is of 4 h.p., capable of an overload of 50 per cent. The battery consists of 44 cells, each weighing 21 lbs. complete.

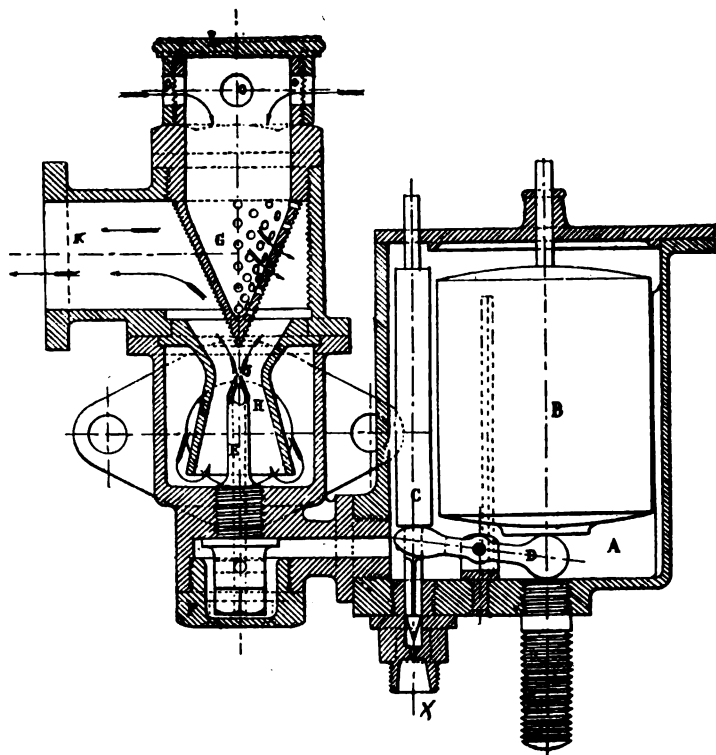
All the controlling apparatus is directly under the seat, where it is readily accessible, the automatic charging switch also being placed there. The controlling mechanism is operated from a gear segment mounted on a small shaft connected with the controlling lever. A spring pawl and ratchet insures perfect contact with the controller at every step. A cam device is provided, so that when a locking key is withdrawn the circuit is broken in four places and the lever cannot be moved. The vehicle is then safe from meddling hands. When the lever is at the starting point, all the connections for charging are properly made.

The wheels have wooden spokes and solid hubs of cast steel. Both solid and pneumatic tires are furnished, the preference being given to the pneumatic.

THE firm of Friedrich Dick of the Werkzeug und Feilenfabrik, of Esslingen, Wurtemberg, are marketing a very useful set of tools such as wrenches, screwdrivers, pliers, etc., etc., suitable for owners of petrol motor-cars. The tools are conveniently arranged in a leather case, which when folded up occupies a very small space.

## THE "ABEILLE" CARBURETTOR.

IN a recent issue we described the "Abeille" petroleum-spirit motor devised by M. De Mesmay. We are now able to illustrate a carburettor due to the same gentleman, and which is now being manufactured by Messrs. Dalifol and Thomas, of 183 bis, Faubourg Poissonnière, Paris. The device is of the constant-level spraying type. Referring to the illustration, *A* is the constant-level petrol tank; it is provided with a float *B*, which is so mounted that when the spirit reaches a certain level,



the inlet pipe *X* is automatically closed by the pointed rod *C*. Under the action of the suction stroke of the motor fresh air is drawn in through the opening *H*, and up through the lower part of the chimney *I*. The diameter of the latter is narrowed at a point near the outlet of the spirit pipe *E*, the inrush of the air drawing through a certain quantity of spirit. The mixture of air and spirit thus obtained is projected on the cone *G*. The latter is provided with a large number of small holes through which the additional quantity of fresh air necessary to obtain a good explosive mixture is drawn in. The quantity of air admitted through the cone *C* can be regulated by the adjustable cap *L*, which can be so turned as to entirely cover or leave open, to the desired extent the four air inlet holes *O*. It is claimed for the new carburettor that, while being exceedingly simple, it is regular and reliable in action, and that the parts are readily accessible for cleaning or other purposes. The spirit outlet pipe *E* can be quickly withdrawn by removing the plug *F*, the constant-level tank being emptied of any stale petrol through the same opening.

THE *Country Gentleman* remarks that "the success of the motor-car as a means of public conveyance grows more and more assured as time goes on, and it bids fair to become a serious competitor with the buses and trams in several provincial towns. Not only are the companies which are exploiting the motor-cars able to run them at a smaller cost than their rivals, but they are able to travel at a greater speed, a consideration nowadays. Breakdowns are of rare occurrence, thanks to the state of excellence to which the machinery has now been brought and the systematic manner in which it is cleaned and overhauled."

## STEEL TUBING FOR AUTOMOBILES.\*



SCIENTIFICALLY seamless cold-drawn steel tubing is the best known form in which a given amount of like material can be used to resist the greatest torsion or support the maximum weight. Just when in the world's history this important fact was discovered and used is difficult to ascertain. It is sufficient to state that the tube is the best form of strength to resist torsion and bending. Observe the universal appearance of the tube in vegetable life, and the most familiar example is the growth of the straw of grain. What a marvel of power to resist torsion and bending is the rye straw, which frequently rises five feet above the ground and supports the head of grain four or six inches in length and twenty-five times its weight? The bamboo of Japan is another example of vegetable fibre formed in a tube of such strength and lightness that it is common to a thousand uses in the arts. Every one of those trees is a tube; in some the body and limbs are solid, but the form is tubular; and in many tropical species the trunks are hollow.

In animal life the same thing appears. The bones of most animals are round, excepting where strength is sacrificed to form. The ribs that contain the vitals in the chest enclosure are made strong by being formed of flattened tubes. This is a mere economy of space. Even the vertebrae of the fishes are tubular, and the form is so common in animal life that there is no need of specifying.

Passing from the study of the tube in nature, the most wonderful example of its manipulation and adaptation by man is the bicycle. He sought to do in mechanics precisely what is found in nature—to produce the strongest frame with the least possible material in quantity and weight. In this particular he succeeded beyond the wildest dreams of the early makers. If the reader will reflect how crude, clumsy, and heavy the original frame of the velocipede was when it appeared as a pacing machine, built with a wood frame; how the bicycle followed, with a heavy iron frame, and, lastly, the safety, with its thin steel tubing—a marvel of lightness and strength—he will realise how slow has been the evolution of the bicycle.

At first thought it seems fortunate that the bicycle builder has preceded the engineer in his work of perfecting the automobile, but experience does not justify this conclusion. With the splendid achievements of the safety bicycle before him, the designer of the new vehicle has largely disregarded the lesson so plainly taught him in bicycle construction, and almost wholly omitted from the automobile the use of the tube. This is a singular error. At the present time the leading manufacturers of automobiles are imitating horse vehicles, and build on the old-fashioned carriage-makers' lines of design and method. It is the purpose of the writer to point out how this mistake is made, and suggest the remedy, having a faint hope that it is possible to save time and money in the evolution of the ideal automobile.

It seems perfectly natural that the automobile constructor should imitate the carriage-builder—first, because his work was similar, and, second, his desire to please the public, which had no other standard of taste than the horse carriage. The first thought was to make a four-wheeled vehicle to carry two or more people comfortably, gracefully, and steadily, and having the mysterious power to propel itself. This labour was chiefly mechanical in its inception, for a machine with sufficient power and under perfect control must first be produced. Greatly to his credit the engineer solved this problem, but so absorbed was he in his mechanical work that he seems to have overlooked the important conditions of weight and material, and overbuilt the vehicle in all its essential parts. In the end this mistake will prove beneficial, because the engine required to drive an overbuilt

\* By Charles G. Canfield, in the *Automobile Magazine*.

machine will exert more power than required to propel one of less weight.

In this connection let us consider a single example. The body and running-gear of electric cabs, as now constructed in America, aside from machinery and storage battery, weigh 2,200 pounds, and the load to be carried is two persons and one operator, estimated at 600 pounds. To this add 1,600 pounds of battery and 500 pounds of machinery, making a total of 4,900 pounds. From this it is plain that seven times the weight of passengers to be transported is employed in the weight of the vehicle.

With tubular construction of frame and body at least 1,200 pounds can be eliminated in weight, together with 800 pounds of battery and 200 pounds of machinery, making a total reduction of 2,200 pounds—a little more than one-half the weight of the entire vehicle. We are aware that improvements in batteries as well as motors have been made. These reduce the weight, but the principle remains the same, for whatever reduction is made in the weight of the vehicle is a saving as well in the weight of motor power. If tubular construction be generally used in the body and running-gear of the automobile vehicle the greatest strength and least weight will be realised.

The second cause which led to heavy-weight automobile construction was the natural desire of the maker to please the people, and he constructed the vehicle to resemble the horse carriage. This to some extent is a pardonable offence. The designers of horse vehicles have been employed for centuries educating and cultivating the taste of the people to their standard, and in this they have succeeded to fix and prejudice our judgment.

It is but natural that the automobile designer should shrink from changing these conditions, and give to his patrons as near as possible the same thing. But the time has arrived when originality must take the place of imitation and copy, and the ultimate creation must be a distinctive automobile vehicle.

#### FURIOUS DRIVING CASES.

MR. THOMAS ROWLAND OUTHWAITE, manager of the Edinburgh Autocar Company, 30, Lochrin Buildings, was remitted from the Sheriff Court, Edinburgh, on the 21st inst., on a charge of having, on the 7th ult., driven a private motor-car in Clerk Street in a reckless and careless manner, whereby the car came into collision with a pony and trap, the two occupants of which were thrown out, one sustaining a severe blow on the temple and the other fracturing his left arm.

AT Chorley, on the 19th inst., Mr. Frank Almond, agent for the Crauford Cycle Company, Market Square, Wigan, was summoned for driving a motor-car on the highway at a speed dangerous to passengers. The bench fined the defendants 50s., and costs.

#### CLAIM FOR WORK DONE.

AT King's Lynn County Court last week, before his Honour Judge Willis, Q.C., Mr. Frank Morris, cycle and motor agent, sued W. F. Miller, St. George's Road, Yarmouth, to recover £5 5s. 2d. for goods supplied and work done. There was a counter-claim of £2 19s. 2d. for motor-car spirit, hire of machine, and a shaft. Mr. Sadler appeared for plaintiff and Mr. A. F. Clowes for defendant. Plaintiff sold a motor-car to defendant, and the account was for fittings and repairs. The defence was that there was at the time of sale a promise to keep the car in repair for a certain time. Plaintiff, however, denied that there was any such agreement. After a patient hearing and the examination of much detail, his honour gave judgment for plaintiff for £3 15s. on the claim, with costs, and dismissed the counter-claim.

#### RAASCHON v. CASSELL AND ANOTHER.

In the Queen's Bench last week, before Mr. Justice Kennedy, the plaintiff, who was intending to start a delivery business of fruit and flowers in the south-west district of London, sued the defendants, engineers at Cowes, Isle of Wight, to recover damages for breach of contract in regard to the supply to him of two steam motor goods vans, to be manufactured by the defendants according to specifications and by a certain time. The plaintiff claimed damages for delay in delivery, and said the vans were not according to specification. The defendants contended that the time which was ultimately arranged for delivery had not been exceeded, and denied the plaintiff's allegations as to the

machines not being according to specifications. The case was heard some time ago and reported. Judgment was now delivered, the learned judge deciding in favour of the plaintiff, and awarding him £622 damages including £433 which he had paid the defendants as a deposit.

Judgment for the plaintiff accordingly.

#### THE BEESTON MOTOR COMPANY.

THE report to be presented at the annual meeting says: "The directors beg to submit the balance-sheet of the company, duly audited, made up to August 31st last. After charging against the revenue for the year the cost of all experiments and new models, there has been a trading profit of £712 14s. 6d. During the year the directors took advantage of an opportunity which arose of buying in £17,500 of the debenture stock, resulting in a profit to the company (after deducting the law and other charges incidental to carrying the arrangements through) of £13,291 11s., from which has been deducted the balance against the profit-and-loss account of last year and also the balance of the present year's account (after providing for debenture interest and other charges), making together £1,582 7s. 3d., leaving a net sum of £11,709 3s. 9d., which has been carried to reserve. A fair number of motor quadricycles, designed and put upon the market at the end of last year, have been sold during the present season, but it became evident in the course of the year that the demand for that class of motor was not likely to be sustained, the great bulk of enquiries being now for a light car to carry two persons side by side. The company has been successful in designing a car to meet this demand, which has been favourably received." The retiring director is Mr. Rowland Hill, who offers himself for re-election. The auditors, Messrs. Herbert Pepper and Rudland, retire, and are eligible for re-election.

#### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

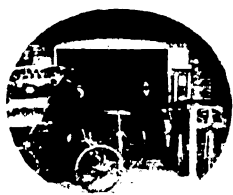
VOL. I.]

LONDON, FRIDAY, JANUARY 5, 1900.

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## COMMENTS.



IN pleasant contrast to the holiday weather was the condition of things on Saturday and Sunday. Both were glorious days in London, and it was not surprising that many motorists took advantage of the opportunity for an enjoyable trip. On the Saturday we met with seven motor-vehicles in Richmond Park, and on the Sunday we saw nearly twenty in our short ride of thirty miles. The roads were hard and frosty, and the sun shone brilliantly, making the outing very pleasant. The vehicles were of every description, Mr. and Mrs. Edge being espied on a motor-quadracycle—the latter type being evidently in great favour. Mr. C. Jarrott was driving the Panhard car which he has recently had converted by the adoption of the Napier motor, the inventor of which accompanied him on Sunday. At Thames Ditton many scores of cyclists had assembled, and in their midst we noticed several motor-cars and motor-cycles, one of the former being driven by Mr. Kitto. Whilst we were waiting at Esher a lady—Mrs. H. L. Clarke, of Norwich—passed us on her motor-tricycle, her companion, Mr. Clarke, being some distance in the rear, and pedalling hard.

### Asphalte Roads.

WE recently noticed in a cycling paper a statement to the effect that if there was no horse traffic the whole of the streets of London would be asphalted. This is a consummation not to be desired, for all who have ridden on automobiles during the recent weeks, when the roads have been continually greasy, know that when the car reaches an asphalted road it becomes practically unmanageable, and side slips are both numerous and dangerous. Such a slip occurred in Hammersmith on the Sunday before Christmas Day; the result being that the car overturned, and one passenger was injured, although no damage was done to the car. Some drivers, however, do not mind side-slip, and throughout December Williamson's sausage vans, the Feather Pen, and other vans for commercial purposes were in daily use without any harm marring the equanimity of the drivers.

### The Automobile Club's 1,000-Miles Trial.

DURING the past fortnight Mr. C. Johnson, the secretary of the Automobile Club, has been continuing his journey over the proposed route. We have already alluded to the bad weather encountered on the journey through the West of England, but since then even worse meteorological conditions have prevailed, for while in Lancashire Mr. Johnson passed through a heavy snowstorm, which lasted seven hours. At Shap Fell snow was lying five or six inches deep, and, after Carlisle had been reached, Mr. Johnson drove back over Shap Fell in order to try the alternative route by the Lakes through Kendal to Carlisle. Before Keswick was reached, however, it was found that something had gone wrong with the machine, the

axle, owing to a previous accident, having been unable to stand the strain of the hilly country. The journey to Edinburgh had consequently to be made by train. From the Scotch capital Mr. Johnson drove to Newcastle, 121 miles, on a motor-car placed at his disposal by the Edinburgh Autocar Company, and from the latter city to York in one of the Daimler Co.'s wagonettes.

### The Scotch Meeting.

As was briefly mentioned in our last issue, a meeting of gentlemen interested in automobilism was held in the Royal Hotel, Edinburgh, on Wednesday last week. Mr. C. Johnson, the secretary of the Automobile Club, explained that similar meetings had been held in Bristol, Birmingham, and Manchester, and that the idea of the meetings was, as far as possible, to arrange that those interested in automobilism in the cities to be visited during the trial should undertake the local arrangements. In the three cities mentioned committees had been formed and guarantee funds had been raised, such funds being necessary to meet the expenses connected with the automobile exhibition which will be held at several of the places visited. His mission to Edinburgh was to suggest that the Scottish Club should undertake the local arrangements. The profits, if any, of the exhibitions, it had been proposed, should go to the war funds. Several gentlemen took part in the conversation which followed, and it was generally agreed that the Edinburgh arrangements would be carried through, though it was felt that details could not be settled without further consideration. It has been provisionally arranged that the motor-cars taking part in the trial will reach Edinburgh on Wednesday, May 2nd, and that the exhibition will be on the following day.

### At Newcastle.

IN connection with the projected trial a meeting of local gentlemen interested in automobilism was held at the County Hotel, Newcastle-on-Tyne, on the 28th ult., for the purpose of making the necessary arrangements. Mr. C. Johnson, who had travelled overnight from Edinburgh by motor-car, explained the object of the trials. At Bristol, Manchester, and Birmingham local committees had been formed to hold exhibitions of the vehicles, and the question for the meeting was whether they would undertake a similar thing in Newcastle. On the motion of the chairman (Mr. J. W. Ellis), seconded by Mr. William Philipson, the gentlemen present were appointed a committee, with power to add to their number. Mr. F. G. Lundy moved, Mr. W. Dunn seconded, and it was resolved that they should invite contributions to a local guarantee fund in the event of the expenses exceeding the receipts. It was also agreed that the committee should make inquiry as to the hiring of a hall for the proposed exhibition, to approach the Mayor and leading men of the city with a view to securing their patronage, to confer with the police as to suitable control of the traffic, and to make other arrangements. Messrs. William Philipson and Rowland Burnett were then appointed local hon. secretaries, and the meeting ended.



### Leeds follows the Example.

A MEETING to consider the arrangements in Leeds was held at the Great Northern Hotel, on Monday. Mr. J. T. Simpson, the late Mayor of Halifax, was in the chair. Mr. Johnson, who was present, again explained the objects of the trial. Those present at the meeting formed themselves into a committee to make arrangements for a one-day exhibition at Leeds. Mr. H. T. Cheswright and Mr. L. E. Greenwood were appointed joint hon. secretaries. The vehicles are expected to arrive in Leeds from Newcastle, via York, on the evening of May 7th.

### A Yorkshire Branch of the Automobile Club.

At the meeting of automobilists held at Leeds the question of the formation of an automobile club was considered, and after some discussion it was resolved:—"That it is desirable that there should be founded a Yorkshire branch of the Automobile Club of Great Britain with headquarters at Leeds." Further, "That those present be and are hereby constituted a Provisional Committee to form the Club, and that the Executive Committee have power to carry out details and prepare rules for subsequent approval of a general meeting of members."

### A Journalist-Automobilist.

THE accompanying photograph, which was taken on Everton Brow, Liverpool, by Mr. A. Burgess, of the Motor Manufacturing Co., Ltd., at the time of the heavy motor-vehicle trials last year, will be regarded with interest, the gentleman on the left being Mr. W. Puxley Pearse, who is now serving in South Africa with the Imperial Light Horse, Mr. C. Cordingley



being on the right. Mr. Pearse is a lover of adventure as well as a journalist, probably inheriting both qualities from his father, Mr. H. S. Pearse, the distinguished war correspondent of the *Daily News*, who is also in South Africa. Mr. Puxley Pearse accompanied the members of the Automobile Club on many of their peaceful tours through English lanes, and as the writer of the motor-car notes in the *Daily Mail* he was able to render service to automobilism. Now, however, he is concerned with more stirring experiences, from which we hope he will return to again join the ranks of those who appreciate the motor-car.

### The Post Office and Automobiles.

ONE of the most startling discoveries of the New Year to the average newspaper reader outside of Lincolnshire has been the fact that in that fen county is a place named New York. And yet the news ought not to surprise anyone, for from that district went most of the pilgrims by the *Mayflower*, and Boston, New York, and Bunker's Hill in the United States were named after three districts in South Lincolnshire, from whence their founders had gone. But the American cities have advanced while their prototypes have slumbered. The English New York has, however, just come into prominence, and will be associated in postal history with one of the earliest provincial utilisations of the motor-car in the delivery of letters, etc. In London, Edinburgh, and one or two other places experimental runs have taken place in such work, so that the way is being paved for the regular employment of the motor-vehicle, and the success of the recent heavy test from Lincoln to New York should encourage the postal authorities to go thoroughly into the matter, as the American people are now doing. Hardly a week passes in the United States without some record of what the automobile has accomplished in the postal service.

### To New York by Motor-Car.

IN connection with the recent experiment here the Lincolnshire postal authorities—who recently started a cycle post for the scattered villages—gave two days' notice to Messrs. Gilbert and Co., Limited, of Lincoln, that they wanted a car for the service. By means of an all-night run from the works of Mr. Frank Morriss at King's Lynn, a Daimler wagonette was ready to start from Lincoln at 7.40 a.m. on Christmas morning with half a ton of mail matter, Mr. Gilbert, jun., driving. Calling at Washingborough (7.53), Five Mile House, Fiskerton (8.15), Bardney (8.50), Southrey (9.10), Topholme, Bucknall, Stixwold (9.45), Woodhall, Kirkstead (10.15), Martindales (10.20), the car reached Tattershall at 10.40, where the mail-bags for Billingham, North Kyme, and South Kyme were given to a mounted postman for delivery. The journey was then resumed, Coningsby being passed through at 10.50 and Dogdyke at 11 o'clock, New York being reached at 11.20 a.m.

### Justification for Postal Work.

THE average speed for the whole of the journey was ten miles an hour, and the wagonette kept well within the times which had been previously scheduled, so that the postmaster at each village could anticipate its coming. At Woodhall it was a little late, but the arrival at New York was forty minutes in advance of anticipations. In the afternoon the car returned to Lincoln, picking up mails at Coningsby, Billingham, Tattershall, and Metherringham, reaching Lincoln at 6.45 p.m. in ample time for the outgoing mail at 8.10 p.m. In the ordinary way five mail carts with horses and drivers are required for the day's work on this particular route, so that the run must convince even the most red-tape-bound officials that the motor-car may be used to effect economy and to further the efficiency of our postal service.

### The Late Mr. H. C. Capel.

It is with deep regret that we have to announce the death of Mr. Herbert C. Capel, M.I.M.E., which took place on Sunday morning last. The deceased, who succumbed to an attack of typhoid fever, was a son of Mr. Capel, of the firm of Carless, Capel, and Leonard, the well-known suppliers of petrol. He carried on a successful business in the north of London as a gas and oil-engine builder, and was also an active member of the Clarkson and Capel Steam Car Syndicate; in fact, it was only in November last that he returned from America, after successfully negotiating, in conjunction with Mr. Clarkson, the sale of the American and Canadian patent rights. In addi-

tion to steam vehicles, Mr. Capel had been devoting attention to petrol cars, and just before he was taken ill was engaged on the construction of a new car. The deceased, who was a member of the Automobile Club, and a prominent figure at the club tours, was in the prime of life, he being under forty years at the time of his death. The funeral took place yesterday at Abney Park Cemetery.

#### The Motor Trades Association.

A MEETING of the executive committee of the Motor Trades Association was held at the Holborn Viaduct Hotel, E.C., last week, when Mr. S. F. Edge was elected to the chair. Several suggestions as regards rules, some of them stated to be of a very important character, were considered, and the rules were finally drawn up. It was decided that no individual could occupy the post of President for two successive years, and that the term of office for the committee should extend for twelve months only. The election of Mr. H. J. Lawson as president was confirmed by the committee, and Mr. H. T. Gretton was elected hon. treasurer. Over thirty members of the trade who had notified their wish to become members of the Association were duly elected by the committee. We understand that the rules of the new association are now in the Press, and will be shortly issued to members.

#### To Invade America.

THE recent visit of Mr. H. J. Lawson and Mr. E. J. Pennington to America is already bringing about some important movements on this side of the Atlantic. Arrangements have, we learn, just been completed for the shipment to America of the whole of the stock of Daimler cars of Stirling's Motor Carriages, Limited, as also a number of bodies for Pennington cars. In addition, we understand that several of the Napier racing cars and several motor-tricycles are to be despatched to America within a few days. Mr. C. J. Wridgway has already sailed for the United States in connection with the matter, and Mr. C. Jarrott, the Secretary of the British Motor Company, Limited, Mr. Letts, of the British Motor Coupé Company, and others will leave for the same destination on Wednesday next. The news of the invasion of America by motor-vehicles from England has created considerable interest in automobile circles here, and no doubt the arrival of the cars in New York will be the means of giving the movement a further impetus in that great country.

#### The Tare Limit of Heavy Motor-Vehicles.

THE decision of the Conference held at the Automobile Club on the 15th November was to ask the President of the Local Government Board to receive a deputation with reference to the advisability of raising the tare limit to four tons. In response to this request the Local Government Board has replied to the effect that the Board will be willing to consider any report on this subject which it may be desired to submit to them in writing, but that since the Board are not at present prepared to initiate legislation with the object proposed it does not appear to the President that there would be any advantage in his receiving a deputation of the Automobile Club as requested. It has now been suggested to the Liverpool branch of the club, the Liverpool Self-Propelled Traffic Association, that its Council should draft a report to be transmitted to the Local Government Board.

#### A Folkestone Service.

WE have already announced the formation of the Folkestone and District Motor-Car Company, of which Mr. H. S. Tolputt is secretary. The company has been formed to experimentally determine whether a motor-car service can be established and maintained in the town and locality on a paying basis, and ultimately a larger company may be brought into existence. We understand that a repairing shop has been erected, and the sale of petrol is to be begun in a building specially built for

the purpose. A car is now in course of construction for the company, being built to a special specification. There is no reason why a motor-car service should not be successfully inaugurated at Folkestone during the coming summer.

#### Automobiles for Artillery.

NEWSPAPER correspondents have at length discovered that the employment of motors instead of horses for dragging artillery into action would have prevented the Tugela disaster, and would enable the guns to be taken much nearer the enemy, there being no horses to be killed. This is a point which cannot be too often repeated, and although it is perhaps too late to hope that the War Office will make the venture in the present war, we hope the military authorities will ere long consider the matter. The uses of the automobile in warfare are really illimitable, and while it has hitherto been regarded almost wholly in connection with the ammunition column and the commissariat department, there is no doubt it will render its greatest service in connection with artillery, enabling shorter ranges to be taken, and conducing to the mobility of the general force. We are glad to see the subject has been mentioned in the correspondence on transport in South Africa now going on in the columns of the *Times*.



WHITECHAPEL ROAD, LONDON, IN 1830.  
(Caricature of Aiken, published in "Modern Philosophy," in 1828.)

#### Automobiles for the French Soudan.

A LIVERPOOL correspondent of the *Daily Chronicle* has just made the discovery that a company has been formed in France to send out a number of motor-vehicles for service in the French Soudan, and on Wednesday the paper in question devoted nearly half a column to the matter. No doubt to the general reader the subject may have been new, but to all interested in automobilism as well in this country as in France the matter is as old as Adam. It was towards the end of last year that the first experimental vehicles were taken to the Soudan by M. Dubois, and it was as a result of the trials that he obtained a concession to run a service of automobiles there. If we remember rightly several of the cars built for M. Dubois' company were exhibited at the Automobile Show in Paris so long ago as June last year. The *Daily Chronicle* remarks that "the type of motor-car to be used is that known as 'Dietrich,' weighs four tons, travels 10½ miles an hour, and costs £60." That there is something wrong as regards the price of the vehicles is evident—£600 is probably nearer the mark than £60.

#### The 1898 French Heavy Motor-Vehicle Trials.

THE report of the Commission of the heavy motor-vehicle trials organised by the Automobile Club of France in 1898 has just been issued, and forms a thoroughly comprehensive and interesting work on the subject of the competing types of vehicles and their performances during the tests. The first three pages are devoted to the regulations governing the contest, and then follow twenty-two pages of general details dealing with the origin of the trials, the methods adopted in making the various calculations and kindred subjects. This is

succeeded by detailed descriptions of each of the competing vehicles, complete measurements and minute accounts of the records made in each case. It will, perhaps, be remembered that the competitors were eleven in number, and comprised vehicles constructed by Roser-Mazurier, Dietrich, De Dion, Leyland, Serpollet, Panhard, and Krieger. Diagrams of the discharge of the accumulators on the electric vehicles are also given, and the report terminates with the "conclusions" of the Commission, illustrated by means of elaborate tables of figures. A capital map of the route over which the trials were made is attached, and the book is profusely illustrated with photographs taken during the course of the tests. The Commission's work has resulted in the production of a valuable addition to automobile literature.

### The "Columbia" Electrical Omnibus.

IN America, where electric vehicles appear the favourites with builders, one naturally expects an electric omnibus, and in this connection we are able to give an illustration of a very successful omnibus, if we are to judge from the tests that have been made with it. Both outside and inside seats are provided, affording accommodation for fourteen passengers, besides a quantity of luggage on the roof, around which a rail is built. The car has one motor geared to the rear axle. A maximum speed of ten miles per hour, with the batteries loaded for a thirty-five mile run, has, it is stated, been attained from one charge on ordinary country roads. The controller gives a range of three speeds forward and three to the rear. The car is well equipped with brakes that are easily applied. The wheel base is 8ft. and the



wheel gauge 5½ft. The wheels are 36in. diameter for the front and 42in. for the rear, and are equipped with 3½in. Kelly solid rubber tires. The steering is accomplished by means of a horizontal handle standing normally parallel to and slightly in front of the driver's seat, and hinged to the steering post which passes up just inside of the body at the driver's left. The motor is suspended in front of the rear axle, and is contained in the usual casing, which also encloses the differential gear. The motor is of four horse-power normal capacity, but claimed to be capable of developing three times this output with heavy loads and on grades. This bus has recently been completed at the Hartford, Conn., factory of the Columbia and Electric Vehicle Company. The batteries, which are concealed within the body, were

supplied from the Electric Storage Battery Company, New York. The total weight of the vehicle, including batteries, is 2 tons 20lbs.

### Examination for Drivers.

SOME time ago we announced that the City Council of Chicago had decided that those who drove automobiles should be required to possess a certificate of efficiency. Arrangements have now been concluded for constituting a board of examiners, and this is to consist of the city electrician, the city engineer, and the health commissioner. The presence of the latter gentleman in this connection seems a little curious, unless he is expected to investigate the general constitution of the driver, in which case the police doctor would probably have been more suitable. Whether this arrangement will secure all that is required remains to be seen, but it at least indicates that the use of electricity in connection with automobiles is far more common in the United States than in this country, and that the local authorities, instead of discussing hampering conditions on motorists, are adopting the wiser policy of securing their safe progress through the streets under the control of efficient men.

### Literary Men and the Automobile.

ONE or two lady novelists have frequently expressed their appreciation of the automobile and the accession of Mr. Rudyard Kipling, who is staying at Rottingdean, near Brighton, to the ranks of the literary people who favour the motor-car is now to be chronicled. Since the early part of December he has been testing the capacity of an automobile from the British Motor-Coupé Company, and has come to the conclusion that it is a splendid hill climber, and just the vehicle for the Downs—and for Mr. Rudyard Kipling, as well. Literary men and others of sedentary occupation must find a trip on a motor-car a most exhilarating experience, and probably Mr. Zangwill, who has publicly confessed that he likes every kind of sport except motor-ing, will be more favourably inclined when he has had a chat with Mr. Rudyard Kipling on the subject.

### Motor-Cars and Street Traffic.

WE have already referred to the more friendly tone which is being shown towards automobiles and automobilism by the engineering press. In commenting on the paper on the Regulation of Traffic read at the recent house dinner at the Automobile Club, *Engineering* in its last issue remarks: "Few have accomplished as much in the education of electrical engineers as Mr. R. E. Crompton, and we are glad to find that this gentleman has had the courage to undertake a still more difficult task, viz., the education of the public, the police authorities, and the magistrates upon the proper conduct and regulation of traffic. We can only hope that his missionary efforts will have as good results in this somewhat unpromising field as have attended his labours with a more highly-educated audience. The benefit to the sanitary condition of our streets by a general adoption of the motor-vehicle can hardly be overestimated. The public has but little idea of the tons of filth which have to be removed daily from our pavements. The latter have often, moreover, for the benefit of the horses, to be constructed out of pervious material in place of asphalt, which with motor traffic could be used universally for all principal streets."

JUST as we go to press we learn that a meeting of automobilists was held in Sheffield on Wednesday, when an executive committee, consisting of Messrs. C. D. Leng, W. St. Q. Leng, E. P. Reynolds, W. Frost, H. M. Pashley, J. T. Thompson (hon. secretary), and E. Hill, was appointed, with power to add to their number, to make arrangements for the exhibition of motor-cars in connection with the Automobile Club's 1,000-mile trial. The Master Cutler has promised his assistance on the general committee.

## A QUARTER OF A CENTURY HENCE.

BY A LOOKER FORWARD.

THE sketch in last week's *Motor-Car Journal* has led me to ponder as to the effect the automobile is likely to have upon the aspect of affairs a quarter of a century hence. Great changes are impending. Reformers are striving to deal with pressing problems affecting the housing of the people, the congestion of traffic in our streets, and other matters which were beyond the most excited imagination of our grandfathers. Wireless telegraphy, the advent of electricity, the suggested coal famine which cannot be delayed over many decades, and other topics are likely to seriously alter the present outlook. How far the motor-car and the many miscellaneous vehicles of kindred construction may aid in the transformation we cannot say—and our imagination must be halting and considerably less than half the actual fact. But in the following lines I have endeavoured to sketch what may be when our horses have been sent to grass, or to the homes for decayed equines which the automobilists of the future may be expected to provide for the weary steeds they will certainly throw out of employment. Imagine, then, if you please, that we have not only passed 1900, but that we are

## In the Year 1925.

London is now a very different place to the Metropolis of 1899 — twenty-six years ago. The saddening spectacles of falling horses, which were then frequent, are no longer possible—in fact, very few horses are now seen in the streets, and those that do occasionally pass up Ludgate Hill are fine-spirited animals, full of grace and dignity, having lost the dullard look of those which a few years ago were to be seen drawing heavy loads in the streets. Even the underground railway has lost its terrors to those accustomed to fresh air, and, as a matter of fact, is now often used in the summer months by those who were wont to ride on the tops of 'buses, for since the installation of a splendid system of electric traction its atmosphere is clear and delightfully cool even when the heat is sub-tropical above ground. Other modern conveniences are too numerous to describe, although there is plenty to interest in the way letters are sent direct to their addresses by means of compressed air from the post offices, and the arrangements made for domestic cooking by electricity, thus avoiding the smoke nuisance which was such an evil feature of the Metropolis in the latter days of the nineteenth century.

Of most interest is the way the automobile is employed and the assistance it has rendered in conveying the dwellers in the suburbs to and from their work in the City. Instead of the lumbering, cumbersome horse-drawn omnibus we have now light and swift running motor-buses, with windows that can be opened and closed at will, thus obviating the stuffiness that was characteristic of this type of conveyance twenty or thirty years since. Tram-lines no longer uselessly waste a large proportion of the roadway, and motor-cars,

each conveying a score or more passengers, have completely superseded these earlier means of locomotion. Recognising the utility of the automobile as an adjunct to their lines, the railway companies have now a splendid service of automobiles to bring daily passengers, who live more than a quarter of an hour's walk away, to the stations; thus saving much time that was formerly wasted in walking over the same ground every day. More than that, with the aid of the local authorities, those who are employed in particular districts are also, as far as personal tastes will allow, resident in special areas in the suburbs, so that there are hundreds of motor-vehicles each bringing a score of people living in one district in, say, Wimbledon, to their various offices on Cornhill or elsewhere. This system has been wonderfully developed, and there is now talk of the extension of the idea to theatre-going, so that if a dozen people living in any district attend a particular theatre on one evening they can be conveyed home by motor-car direct to their own doors at a rate which adds but little to the cost of the entertainment.

Not only are automobiles now practically universal in the directions thus indicated, but many employers, notably in the building trade, utilise them for conveying workmen from one job to another, the result being a wonderful saving in time and expense. Tradespeople, recognising that the great object of people is to avoid delay in journeying to and from their establishments, make a general rule that customers whose purchases exceed in value 20s. can be brought from their homes to the shop and back again at no cost whatever. A lady requiring a new cloak from one of the great shops in Fleet Street—for all newspaper offices are now located on the land facing the Thames in offices adding dignity to the first really grand Embankment in London—merely sends her servant

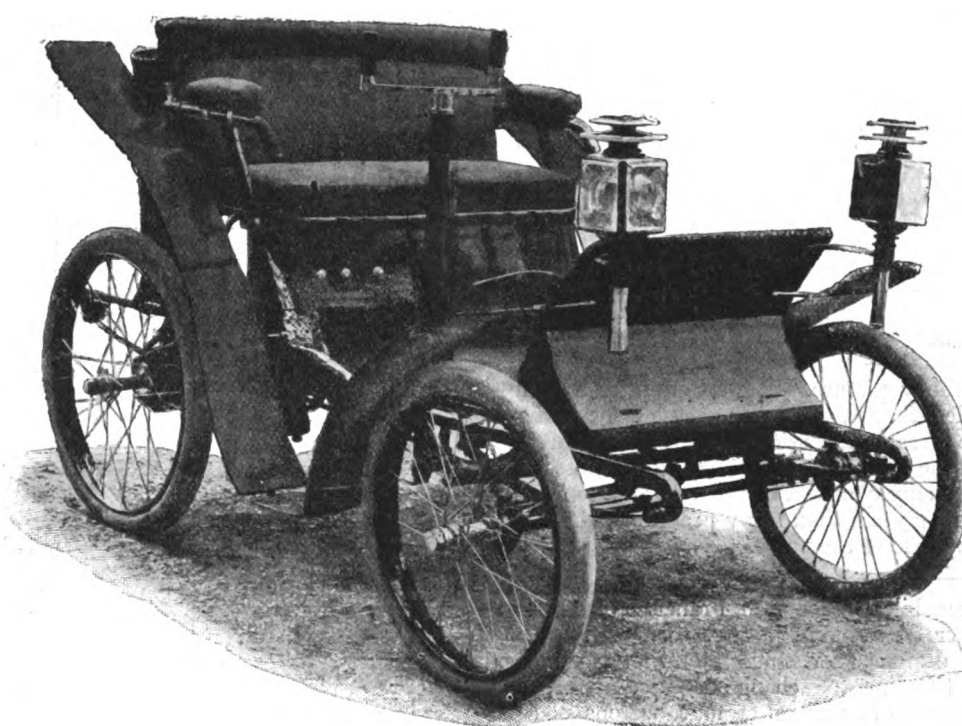


FIG. 1.—GENERAL VIEW OF "ESCULAPE" MOTOR-VOITURETTE.  
(For description see next page.)

attached to the nearest lamp-post and the firm is thus notified. A motor-car is despatched, and so the expense of 'bus and train is saved, shopping being thus rendered an easy pleasure. To about every twenty houses one lamp-post is given, and this is so devised that it has telephonic communication with the exchange, the local fire station, police station, and other public services.

Under these circumstances, the width of the streets, as compared with those that are seen on plans of the City dated 1887 or 1897, will occasion no surprise. The pavements are less required, as very few people now walk. At regular intervals there are subways underneath the road leading from one side to the other, so that the rapid progress of those who travel by automobile shall not be impeded by thoughtless pedestrians. Consequently, running-over accidents are a thing of the past, and "the dangers of the streets" is merely a tradition. Thus the average length of the lives of our men and women is being increased, thanks to the development which our forefathers of the nineteenth century regarded with so much aversion.

Not only are improvements noticeable in the streets of London and the great towns, but all the roads leading therefrom to the seaside or other holiday resorts have been wonderfully changed for the better, and between the capital and Brighton



(now reached safely and comfortably in two hours by road) is a splendid service of automobiles of every description. The local authorities, unlike those in the days of the early motor-car meets—now so popular throughout the country—give every facility for their progress. Very remarkable is the revival of the old coaching inns that went into desuetude with the advent of the locomotive. Thanks to motoring these have been restored with much of their former grandeur, the difference, of course, being in the outbuildings, which are now arranged for the accommodation of motor-vehicles, expert engineers overhauling the machines ere they continue their journey.

Why so much prejudice lingered into the early years of this, the twentieth century, against such a useful and indispensable means of locomotion one cannot imagine. Now, practically everything running on wheels is propelled by motor-power. Instead of three or four little vestries trying experiments, as was the case in 1900, we have now only three or four horses employed by local authorities throughout the country, and they are only kept at work out of regard for their health, for experience showed that horses long used to a regular routine of municipal service fared ill on retirement, and quickly sickened. But, practically speaking, all local authorities now employ motor-vehicles, and in the country districts such handy means of traction by acting as feeders to the light-railway schemes covering the land as with a network have aided in the agricultural revival.

Into the exigencies of military service the motor-car has been pressed for upwards of a decade, and only the other week the *Times* (which regularly chronicles Motor-Car Meets, and generally records in large type the few weddings where horses are now employed by the wealthy anxious to make a sensation) reported how effectually a dozen motor-vehicles, stationed at the British camp at Pretoria, had been used in quelling a disturbance which some of the older Boers had attempted to make on the arrival of the new governor.

The above is no fancy picture. The possibilities of the motor-car are illimitable—they have hardly, as yet, been discovered; but with the greater attention now being given by English engineers, and the removal of the prejudice that now unfortunately exists in many quarters, the present development will continue until, in fewer years than many people imagine, the automobile will be the vehicle of the people.

THE Wilkins Automobile Co., of San Francisco, has lately completed a 12-passenger motor-omnibus with flat roof. The vehicle, which has been designed for general touring, comprises several novel features. Steering and change of speed are accomplished electrically by means of a manual of four buttons placed so as to be convenient to the driver's hands. The steering is effected by means of a movable block, which travels on a screw, on the end of which is mounted the armature of a small motor. By pressing the right-hand button on the manual, the motor is revolved in such a direction as to cause the vehicle to turn to the right. On pressing the left-hand button the motor is reversed, causing the car to turn the other way. Change of speed is effected by means of a wide belt, which travels upon two cones placed on the same shaft, with their inclined faces towards each other. By separating the cones the belt slips down toward the points, giving a slow speed. By driving the cones together the belt is forced up the incline on each cone, this increasing the speed without, it is claimed, jerk or jar. The cones are moved in the same way as the steering hub, by means of a screw, on the end of which is mounted the armature of a motor. Only one lever is used. When set in the centre notch of the sector the engine is thrown out of gear; when in the forward notch the vehicle moves ahead; when in the rear notch it moves back. The water tank is carried under the driver's seat, and the petrol tanks, of which there are two, are situated under the side seats, which extend the full length of the vehicle. The motive power is supplied by a 12-h.p. petrol engine, having three cylinders with cranks set at 120 deg. Each cylinder can be made to act independently, so that in case of a breakdown of one cylinder the car can still be driven. The machinery is carried on a frame independent of the body.

## THE "ESCULAPE" MOTOR-VOITURETTE.



WE are able to give illustrations of the interesting two-seated voiturette exhibited at the recent National Cycle Show by the Automobile Union, of 39, Avenue des Champs Elysées, Paris. The frame of the vehicle is built upon a steel tubing. The motor *A*, as will be seen from Fig. 2, is located at the rear of the car, and is of the 2½ h.p. De Dion type, a noticeable feature being, however, that in addition to the radial ribs to the cylinder, the combustion chamber is provided with a water jacket. Two mechanical speeds are provided, intermediate speeds being obtained by varying the electrical ignition. The motor *A* transmits its power through the bevel wheels *B C* to an intermediary shaft *R* geared to a second countershaft through the spur wheels *EE'* and *GG'*. Both pairs of wheels are always in mesh, the connection being made by friction clutches on the shaft *H*. From this shaft the power is transmitted by bevel gearing to the differential gear shaft *K*, and from the latter to the rear road wheels by the usual chain gearing. The motor is started by means of a detachable handle; three band brakes are provided—one controlled by a foot lever acting on the

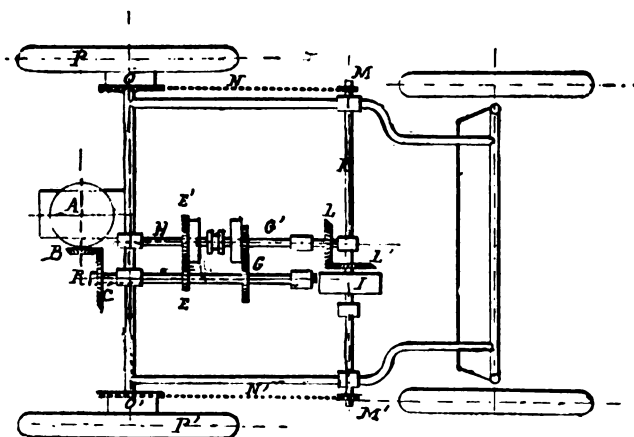
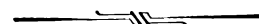


FIG. 2.—PLAN OF "ESCULAPE" VOITURETTE.

differential and one each, actuated by a hand lever, on the hubs of the rear wheels. The frame is spring suspended on the axles, while the road wheels are of the cycle type fitted with pneumatic tires. Steering is controlled by a bar connected up to the front wheels. The water tank is located at the rear and has a capacity of 15 litres, or sufficient for a run of about five hours. The car can attain a speed of 17½ miles an hour and on the low gear will, it is claimed, climb all ordinary hills; it measures 6½ feet by 4½ feet and weighs complete about 4 cwt.



LA Société Française d'Automobiles Electriques, of 3, Rue Scribe, Paris, is increasing its capital from £4,000 to £8,000.

It is reported from Milan, Italy, that a company is in course of formation in that city, with a capital of £20,000, to manufacture automobiles.

Two motor-vehicle companies, in one of which Mr. A. L. Barber, president of the Locomobile Company of America, is said to be interested, are in process of formation at Washington, U.S.A.

At the last meeting of the Somerset Joint Committee the clerk was directed to take steps for the passing of a bye-law requiring the names of the owners to be affixed to light locomotives.

THE Oxtou Carriage Company, Limited, has been registered with a capital of £6,000, to carry on the business of carriage, cab, car, and vehicle builders and merchants, motor-car, motor and machinery manufacturers, etc.



## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### A Motor-Cab Service in Cologne

MESSRS. L. WELTER AND CO., of Cologne, proprietors of the German rights in the Krieger electrical vehicles, are reported to be about to place twenty motor-cabs on the streets of that city.

The cabs will be fitted with Schuckert electric motors, while the capacity of the battery will, it is stated, be sufficient for a run of from 50 to 60 kilometres on one charge.

### The Belgian Automobile Club.

THE annual general meeting of the Belgian Automobile Club was held on Christmas Day at the club's spacious quarters in the Rue Royale, Brussels, and was attended by thirty-three members.

Under the presidency of Count Van der Staten Ponthoz, the meeting discussed many matters of interest, such as the present position of the club and its relations with foreign automobile societies, the progress of the industry in Belgium, the system of customs duty now in force, the recently-formed "Chambre Syndicale de l'Automobile," and the automobile fêtes at Spa. In connection with the last-mentioned matter, it was announced that the town of Spa had granted a subsidy of £400 to the club to organise a *course* during this year. Provided the necessary permission is obtained from the authorities, the race Spa-Bastogne will again be run. Regret was expressed that for lack of funds and other reasons it had not been possible to carry out two of the recommendations put forward by the general meeting held in 1898. These two propositions were:—(1) That there be formed an examining committee charged under the auspices of the A.C.B. to grant diplomas to automobile drivers. (2) That conferences be organised in the great centres for the purpose of popularising automobilism.

### Date of Gordon Bennett Cup Race.

ON Thursday, the 28th ultimo, the Sports Committee of the Automobile Club of France had under consideration the race for the Gordon Bennett Cup. It was decided that the *course* should be run off on Thursday, June 14th, 1900, over a route to be selected by the committee later on. The automobile clubs of Germany, the United States, Belgium, and Italy had, at the date of the meeting, lodged their formal entries in accordance with the rules governing the competition, so keen racing will be seen next season for possession of this magnificent trophy. Very possibly the competitors from each country will be required to race under a uniform colour. For example, French competitors may sport blue, Belgium may adopt red, Germany may carry white, Italy green, and the United States yellow. This system would certainly facilitate the identification of the competing vehicles during the race.

### The Industry in Belgium.

ON Monday last the tariff of taxes payable on the various types of self-propelled vehicles recently issued by the provincial council of Antwerp, came into operation. As will be seen from the subjoined figures the charges are moderate, except in the case of the trailing car. What this inoffensive little vehicle has done to merit such a tax I am at a loss to understand. (1) Motor-cycles and vehicles provided with pedals, one or more seats, 30fr. (2) Motor-cars (vehicles and voituresses), one and two seats, 30fr.; more than two seats, 50fr. (3) Trailing cars, one seat, 10fr.; more than one seat, 20fr. The announcement that the Second Annual Exhibition of Automobiles and Cycles will be held at Antwerp from 4th April to 25th April has caused much satisfaction in the industry, and it is generally anticipated that good business will result. The spacious salons of the Royal Harmonic Society have been secured

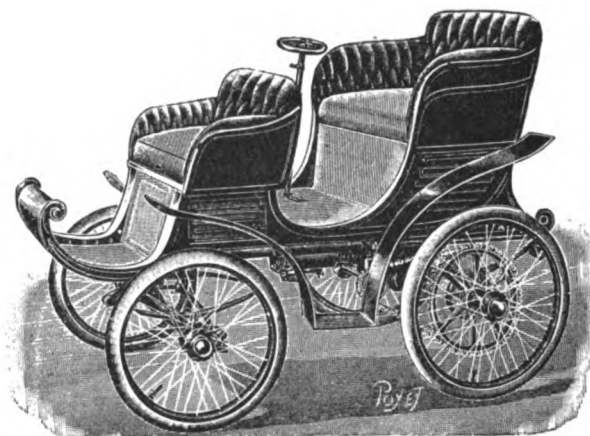
for the show, and the larger portion of the space will be reserved for automobiles.

### The Automobile Club of Turin.

IN the articles of association of the Automobile Club of Turin there exists a rather severe clause to the effect that no constructor or merchant engaged in the automobile industry can act upon the administrative committee of the club, and it was due to this rule that the entire body of officials recently handed in their resignations. At the general meeting of the members of the club held to consider the question, it was decided that a shareholder in a company interested in automobiles was not necessarily a constructor or merchant as understood by the clause in question, and the committee were unanimously re-elected. These officials are:—President, Count Biscaretti di Ruffia; vice-president, Mr. Gatti-Goria; treasurer, Count Cacherano di Bricherasio; secretary, Mr. Agnelli; assistant secretary, Mr. Aymar; committee, Messrs. Azimonti, Coriana Mayneri, Rana, and Rotta.

### La Compagnie Française's Three-Seated Motor-Voiturette.

LA COMPAGNIE FRANCAISE DES CYCLES ET AUTOMOBILES, of 7, Rue Darboy, Paris, has lately introduced the light three-seated car, illustrated herewith. The power is supplied by a petroleum-spirit motor of 3½ h.p. It is provided with a water-jacket and electrical ignition. Two speeds are provided, as also a friction clutch, by means of which the motor can be cut



out from the transmission gear. A feature of the latter is that the two speeds and the clutch are controlled by a single lever. Steering is effected by a sloping hand wheel. The road wheels are of the cycle type, fitted with pneumatic tires. Complete with water and motor-car spirit, the car is stated to weigh 350 kilog., or not quite 7 cwt.

### The "Parcel Post" Race.

THIS very original race, promoted by *La France Automobile*, is set down for decision on the 14th inst., and as the regulations governing it are distinctly novel I give them in detail. (1) The "Parcel Post" race will take place on Sunday, January 14th, 1900. (2) It is open to motor-cycles or voituresses weighing less than 400 kilos, ridden by one person and carrying, protected from rain and dust, a load of 60 kilos, measuring approximately 50 cm. by 60 cm. by 80 cm. (3) The entry should state the sale price of the vehicle, and this price should be that at which the constructor is prepared to deliver similar vehicles. (4) The vehicles driven by an explosion engine should be fitted with an exhaust box, or similar appliance, in order to reduce the noise as much as possible. The commissioners of the race, members of the Sports Com-

mittee of the Automobile Club of France, will have the right to disqualify every vehicle which does not conform to this special and rigorous clause. The commissioners are MM. René de Knyff and Paul Rousseau. (5) The start will be effected from the station at Achères at 10 a.m. The official dépôts will be situated at Poissy, Croix-de-Noailles, Saint-Germain, Port Marly, Le Pecq, Maisons Laffitte, Croix-de-Noailles (traversed twice), and the station at Achères. (6) The start will be given simultaneously to two competitors, who will follow the route in opposite directions. An interval of ten minutes will be observed between each departure of two competitors. (7) At each official dépôt the competitor should deposit the parcels marked for that address and take those destined for delivery at another office. He must also have his delivery-book signed. (8) Every competitor who has not his delivery-book in proper order at the finish will be disqualified. (9) The prizes will consist of medals and diplomas. 10. The entry fee is 10fr. per vehicle.

### The Motor Tests.

THE series of motor tests organised by *La Locomotion Automobile*, and to which I have made reference from time to time in these columns, continues the even tenour of its way at the works of Messrs. Malicet and Blin. Those details of the tests which have been issued, meagre though they are, give promise of numerous important revelations to come, and the organisers can already be congratulated on having instituted a *concours* which will throw considerable light on many of the problems at present perplexing constructors of automobiles. It is too much to expect that all the difficulties of this great industry will be explained, and that in the near future manufacturers will be able to build motors and automobiles with the same perfection of design and execution which to-day characterises the construction of cycles. No, that can hardly be hoped for, but undoubtedly these tests will bring sufficient to light to materially advance the engineer's task of arriving at the perfect car. One of the points noted during the trials made up to date is that the generality of motors attached to cycles and voituresses have only developed the power for which they were sold by the constructors on an average of once in every ten tests made on the brake. And this has only been obtained by the removal of the "silencer," the power instantly diminishing upon the re-attachment of this very necessary part of the automobile. Of course, it is hardly fair to criticise until all the tests have been completed, but as the record now stands it reflects no credit on the manufacturer. The purchaser of an automobile of specified horse-power justly expects that he will have this horse-power at his command under normal conditions, and not that it will only be forthcoming by adopting such means as the removal of the exhaust box. And here he it noted that presumably the silencer of each engine under test is clean and not clogged up as it so often becomes after a few months' continuous use. I remember that in England certain purchasers of the earlier productions of the Daimler Company found the power of the motor diminishing after some little time, and ascertained that this was entirely due to the fouling of the holes in the "silencer." This, however, was but a natural consequence of the employment of the silencer as then made, but in the trials under notice it would appear that even with fresh and clean exhaust boxes many engines do not give off the "advertised" power. On certain of the larger types of motors for attachment to vehicles it is said that the loss of force in this direction amounts to no less than one horse-power. Another point that is likely to be made clear is the exact difference between the power of the motor itself and the power exerted by the driving wheels. Every automobilist is well aware that much of the engine's force is lost in that chaos of chains, belts, and cogwheels which make up the transmission gear, but few, I venture to think, entirely realise what this loss amounts to. In the tests so far made it has been ascertained that the force exerted by the driving wheels of a car fitted with a motor actually developing on the vehicle eight h.p., does not exceed five h.p., a conclusive proof that there exists plenty of room for improvement in the matter of driving gears.

Then, too, numerous experiments are being made with varieties of carburettors on different types of motors; indeed, the entire work is being carried out in a wonderfully complete manner. It is to be hoped that a minute record of the proceedings and the theories deduced from the experiences will be published in due course, for these details will prove of the greatest value to all persons connected with the automobile industry.

### A Projected Brest-Rennes-Brest Race.

It is announced that the *Dépêche de Brest* proposes to organise during next summer an automobile race from Brest to Rennes and return. This represents a distance of about 500 kilomètres.

### Belgium's Automobile Challenge Team.

will have as substitutes MM. W. Ruys-Orban and Baron J. de Crawhez.

L'AUTOMOBILE CLUB BELGE has selected three among its members to defend its colours in the coming race for the Gordon Bennett Cup. They are Baron P. D. Crawhez; M.M. O. Grégoire and A. Vanderspeck. They

### Military Motor-Cars at the 1900 Exhibition.

EXPERIMENTS have for some time past been conducted on an important scale in the French Army with a view to ascertaining the practical possibilities of automobiles for military purposes. It is now announced that the results of these experiments will be to a certain extent made known to the public at the Exhibition this year, for various patterns of motor-vehicles specially adopted for the different uses to which the military authorities shortly contemplate putting the automobile are to be shown in the French Army and Navy official section. Three models of carriages for ordinary field service will be shown; the first is a strongly-built vehicle of high horse-power, and of the racing pattern, provided with a motor which will permit of a speed of forty miles an hour. This automobile is intended for the carrying of despatches. The second pattern shown will be a heavy-weight traction car, to be used for drawing large field pieces. A comparatively light petroleum motor tricycle armed with a Maxim gun will also be on view. Another class of horseless vehicle which will be represented will consist of motor-cars for the use of the staff, and includes a commander-in-chief's carriage, another for his chief of staff, and so on; while it is expected that an automobile ambulance wagon and another for the use of the field telegraph service will be on view.

A COMPANY has just been formed at Camden, N.J., U.S.A., with a capital of £4,000, to be known as the Macpherson Automobile Company.

THE adoption of automobiles to carry mails appears to be gaining favour in America, the authorities of Brooklyn being the last to make an investigation of their merits.

THE Gong Bell Manufacturing Company, East Hampton, Conn., is introducing a new chime signal bell for motor-vehicles, operated by the foot. Two 6½ in. gongs are mounted on a frame with a clapper so arranged as to strike both gongs simultaneously. The gongs being of different tones, tuned to accord, are said to give a pleasing musical sound, loud and clear.

MR. J. FRANK DURYEA has returned to Springfield, Mass., from a trip on his automobile from New York. He made the distance in eight hours and forty-five minutes. The carriage is of the double-seated surrey type, with the usual small cycle-type wheels, with heavy pneumatic tires. It weighs in only 1,000 lb., and has since spring been run about 5,000 miles. In all this travelling about the country it has never been put on a train, nor has it been propelled by any other force than that of its motor. The motive power is a small petrol engine, which is placed beneath the rear seat. It is of 7 h.p., and weighs 210 lb., including the fly-wheel. The carriage is steered by a small hand lever, which is manipulated by the right hand of the driver.

# CORRESPONDENCE.

## NEXT YEAR'S RACING SEASON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I notice a letter under the above heading in your last issue, and would say, in reference thereto, that "Looker-On" need not be alarmed at the rumours of cars with 50 h.p. and 100 h.p. being in course of construction in France; the projectors of these high-powered machines are personal friends of mine, and though parts of a so-called 50 h.p. machine are in construction it is only to be an experiment, while the 100 h.p. is at present a "castle in the air." It is as well to remember that horse-power is by no means everything, and it is of interest to note, as an example, that the three *chauffeurs* who have been selected to defend the Gordon Bennett Cup for France, viz., De Knyff, Charron, and Girardot, will, I believe, drive Panhard cars of not more than 16 h.p. In my opinion the French builders will soon get to a point where an increase of horse-power will not give a sensible increase of speed owing to the weight of the parts. It will then be time to leave the horse-power and turn attention to the reduction of weight and the increase of efficiency.

"Looker-On" says: "So far the two English *chauffeurs*—the Hon. C. S. Rolls and the Hon. J. Scott-Montagu, M.P.—who have raced on the Continent have only participated in the 'tourist' class, never in the racer's category." If "Looker-On" had looked on at the Paris-Boulogne race he would have observed that my section was essentially a speed contest, and that there was no "tourist" class.

Yours faithfully,  
Monmouth, December 30th, 1899. CHARLES S. ROLLS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Reverting to "Looker-On's" letter in your last issue, in which he states that "so far the two English *chauffeurs*—the Hon. C. S. Rolls and the Hon. J. Scott-Montagu, M.P.—have only participated in the 'tourist' class, never in the racer's category," etc., I should like, in fairness to Mr. Rolls, to say this is incorrect, for the Paris-Boulogne was a race for speed only. I was on Mr. Rolls' car, which though only an 8-h.p., and in spite of a puncture which detained us twelve minutes, did the 144 miles in four hours twelve minutes, of which 138 miles were a non-stop absolute. The other cars were all 16-h.p., and in competition with them I consider this an excellent performance. On one occasion we visibly gained on a 16-h.p. car on the down grade.

The Firs, Moseley, Birmingham, Yours, etc.,  
January 3rd, 1900. ALFRED J. BIRD.

A SERVICE of motor-omnibuses is about to be started in the town of Wilkes-Barre, Pa., U.S.A.

THE Waltham Manufacturing Company, of Waltham, Mass., which controls the De Dion patents in America, has just produced its first Orient motor-bicycle.

THE Mayor of Boston, U.S.A., has approved an order passed by the Board of Aldermen, granting locations for an automobile merchandise and passenger traffic line to the Boston Transit Company. The omnibus under consideration has accommodation for twenty-six persons. Electricity will be the motive power.

THE Motor-Car Club (Proprietary), Limited, has been registered by Mr. A. S. Ramskill, 40, Holborn-viaduct, E.C., with a capital of £100 in £1 shares, to form a club for the accommodation of persons interested in motors, motor-cycles, and the motor industry, and to manufacture and deal in cycles, motors, etc. Registered without articles of association.

In connection with the correspondence on the subject of the price of Benz cars, we have received a further letter from the Automobile Association, Ltd. We do not publish the letter, as no good can be done, in our opinion, by prolonging the discussion. We may mention, however, that the Automobile Association still maintain that the vehicles they are selling are genuine Benz cars. In their letter they state: "As regards Messrs. Benz, we can inform them that we buy through other agents of theirs; *voilà*, the mystery solved."

# MOTOR-CAR RACING IN FRANCE IN 1899.



"LE VÉLO," in a recent issue, published a most interesting statistical table of the winning *chauffeurs* in the French automobile races of 1899, and although the American system of points, on which the table has been compiled, is not an altogether ideal one for the purpose, still it enables a certain line to be drawn between the performances of the leading racing men

during the past season. The points credited to each placed man have been calculated as follows:—First, 5; second, 4; third, 3; fourth, 2; fifth, 1. In compiling these figures, all foreign, and certain provincial races of minor importance, have been eliminated, and the two hill-climbing contests at Chanteloup and Gaillon have only been taken into account so far as the motor-cyclists are concerned. The races included in the classification are:—La Coupe de Périgord, Nice-Castellane-Nice, La Course du Mille, Nice-La Turbie, Paris-Roubaix, Pau-Bayonne-Pau, Le Critérium des Motocycles, La Coupe des Motocycles, Paris-Bordeaux, Le Tour de France (counting each of the seven stages as a separate race), Paris-Saint Malo, Paris-Lille, Paris-Trouville, Paris-Ostend, Bordeaux-Biarritz, Paris-Boulogne-sur-Mer, and the Critérium des Déchainés. Of course, all races on the track have been omitted. Dealing first of all with the performances of the drivers of cars the record appears to stand as follows:—

| Order and name.          | Points scored. |   |   |   |   | Total points. |
|--------------------------|----------------|---|---|---|---|---------------|
|                          | 1              | 2 | 3 | 4 | 5 |               |
| 1 Girardot ...           | 3              | 4 | 2 | 0 | 1 | 38            |
| 2 R. de Knyff ...        | 3              | 4 | 1 | 0 | 0 | 34            |
| 3 Levegh ...             | 3              | 3 | 0 | 0 | 2 | 29            |
| 4 Lemaitre ...           | 4              | 0 | 1 | 0 | 0 | 23            |
| 5 Charron ...            | 3              | 0 | 1 | 1 | 0 | 20            |
| 6 Antony ...             | 2              | 1 | 0 | 0 | 0 | 14            |
| 7 (Chasseloup-Laubat...) | 1              | 1 | 0 | 1 | 1 | 12            |
| Pinson ...               | 0              | 0 | 2 | 2 | 2 | 12            |
| 9 Giraud ...             | 0              | 2 | 0 | 1 | 0 | 10            |
| 10 Kœchlin ...           | 0              | 0 | 2 | 1 | 0 | 8             |
| 11 Heath ...             | 0              | 0 | 1 | 2 | 0 | 7             |
| 12 Loysel ...            | 0              | 0 | 0 | 3 | 0 | 6             |
| 13 Broc ...              | 0              | 0 | 1 | 0 | 1 | 4             |
| Jamin ...                | 0              | 0 | 1 | 0 | 0 | 3             |
| 14 Petit ...             | 0              | 0 | 1 | 0 | 0 | 3             |
| Henon ...                | 0              | 0 | 1 | 0 | 0 | 3             |
| De Dietrich ...          | 0              | 0 | 1 | 0 | 0 | 3             |
| 18 Archambaud ...        | 0              | 0 | 0 | 1 | 0 | 2             |
| De Castelnau ...         | 0              | 0 | 0 | 1 | 0 | 2             |
| Huillier ...             | 0              | 0 | 0 | 0 | 1 | 1             |
| 20 Jenatzy ...           | 0              | 0 | 0 | 0 | 1 | 1             |
| Flash ...                | 0              | 0 | 0 | 0 | 1 | 1             |

Taking the average of placings, it is found that M. Lemaitre occupies the premier position, having scored twenty-three points in five races, or an average of 4.6. The second place falls to M. de Knyff, his record being thirty-four points scored in eight events, equalling an average of 4.25.

Coming to the cycle division one's attention is at once directed to the wonderfully uniform racing of Teste throughout the season. His average of 4.3 is very high, for he has been one of the most frequent participators in last year's *courses*. Baras, too, with his record of three wins and a second in four races, cannot

complain of any lack of success. The figures under this classification are as follows:—

| Order and name.  | Points scored. |   |   |   |   | Total points. |
|------------------|----------------|---|---|---|---|---------------|
|                  | 1              | 2 | 3 | 4 | 5 |               |
| 1 Teste ...      | 5              | 3 | 2 | 0 | 0 | 43            |
| 2 Béconnais ...  | 3              | 4 | 1 | 1 | 0 | 36            |
| 3 Tart ...       | 2              | 2 | 4 | 0 | 3 | 33            |
| 4 Osmont ...     | 2              | 3 | 2 | 1 | 0 | 30            |
| 5 Corre ...      | 0              | 3 | 3 | 1 | 0 | 23            |
| 6 De Méaulne ... | 1              | 1 | 1 | 4 | 1 | 21            |
| 7 Baras ...      | 3              | 1 | 0 | 0 | 0 | 19            |
| 8 Gleizes ...    | 3              | 0 | 0 | 1 | 1 | 18            |
| 9 Bardin ...     | 1              | 0 | 0 | 5 | 2 | 17            |
| 10 Renaux ...    | 1              | 0 | 1 | 1 | 1 | 11            |
| 11 Vasseur ...   | 1              | 0 | 0 | 2 | 0 | 9             |
| Demester ...     | 0              | 1 | 0 | 2 | 1 | 9             |
| Bertin ...       | 1              | 1 | 0 | 0 | 0 | 9             |
| 14 Jacquelin ... | 0              | 0 | 2 | 0 | 1 | 7             |
| Villemain ...    | 1              | 0 | 0 | 1 | 0 | 7             |
| 16 Degrais ...   | 0              | 0 | 1 | 0 | 1 | 4             |
| Rolland ...      | 0              | 1 | 0 | 0 | 0 | 4             |
| 18 Caron ...     | 0              | 0 | 0 | 1 | 1 | 3             |
| 20 Gasté ...     | 0              | 0 | 0 | 0 | 1 | 1             |
| Cormier ...      | 0              | 0 | 0 | 0 | 1 | 1             |

These tables, coming as they do on the top of the recent controversy *à propos* of the team selected by the "A.C.F." to do battle for the Gordon-Bennett cup, are of exceptional interest, although, as *Le Vélo* puts it, the figures have not the pretension to indicate the value of the men or of their mounts at this moment.

## MIDLAND MOTOR NOTES.

By "HERCULES."

### An Extensive Scheme of Motor Tours.

I HAD the pleasure of a chat, the other day, with Mr. T. Morrison, of the British Motor Touring Co., Ltd., and I learn from him that his company has in hand a very important scheme in respect of motor-car tours in all parts of the country. Orders have been placed for a large number of Daimler cars, as also Oppermann electrical vehicles, and within a few months it is hoped to have a fleet of no less than sixty cars at disposal. I am not at present able to give full particulars of the new scheme, but I am promised the information at an early date.

### A New Lubricator.

MR. H. A. DRAKE, the works manager of the Daimler Motor Company, has patented a lubricator which he has invented recently. I had an opportunity of seeing the device the other morning, and the following description may be found of interest:—The reservoir, which contains lubricating oil and is fitted with a sight-feed glass, is placed in any convenient position on a vehicle. The pressure of the exhaust is made to act on the top of the oil in the reservoir, and force the lubricant into a distributor placed on the dash-board in view of the driver, the distributor being so arranged with sight feeds that any amount of oil can be distributed to any portion or working part of the carriage, adjusted by suitable screws and needle valves. Arrangements are also made whereby petroleum or benzine can be inserted to clean out the various tubes and bearings. It will be seen that directly the engine is started lubrication begins automatically, also when the engine stops the lubrication ceases, although a suitable stop apparatus is arranged that the lubrication may be stopped at will by the

driver. Between the exhaust pipe and the reservoir a suitable back pressure valve is inserted, having a gauge strainer. A large number of these lubricators have been in use for a considerable time, and have met with unqualified success.

### A Large "Body" Order.

the next two or three months.

I HEAR that the Burton Motor-Carriage Works, Fleet Street, Coventry, have just secured a very good contract from one of the leading firms in Coventry for the supply of motor bodies. This will keep the firm exceedingly busy for

### Horses and Motor-Cars.

It may seem, on first thoughts, a far cry from the war in South Africa to the motor industry in the Midlands, and yet it is possible that the Transvaal trouble may indirectly affect the industry. Horses in this country have been none too plentiful of recent years, and the demand which is being made for animals suitable for service in the war will very considerably deplete the present available stock. It is believed that more or less difficulty is bound to be experienced in supplying horses for business purposes, and then those who have been hesitating in regard to purchasing a motor-propelled vehicle will hesitate no longer. That the tradesmen in Birmingham and Coventry are impressed with the increasing number of motor-vehicles which are to be seen in either city answering all the purposes of business, there is not the slightest doubt, and it would require very little difficulty in the way of obtaining horses to make them decide to adopt the latest form of locomotion. Manufacturers realise the fact that there is a wide field open to the industry in catering for tradesmen of all classes, but up to the present very little has been done in the way of building vehicles suitable for such work. This is due to the larger manufacturers being so busy in dealing with orders for motor-cars for pleasure and passenger service. The opportunity which I have referred to, however, should not be neglected.

### The Speed of Motor-Vehicles.

AT Dunstable, at the famous Coaching Inn, there is a framed record of a reprint from a Coventry paper of May 30th, 1830, which states that the "Independent Tally Ho" coach had completed the journey between London and Birmingham, a distance of 109 miles, in 7h. 39min., an average of 14½ miles per hour. The coach did one portion of the journey at top speed, viz., 19½ miles in 1h. 12min. A writer in the *Birmingham Mail* has compared the ease of control over a motor-car with that over a coach of the old days, and is in favour of greater speeds being allowed by law than at the present time. The restrictions on motor-vehicles in the matter of speed are undoubtedly absurd, especially in regard to travelling over country and quiet main roads, where there is not the least danger to other vehicles or pedestrians.

### The Motor Industry at Coventry.

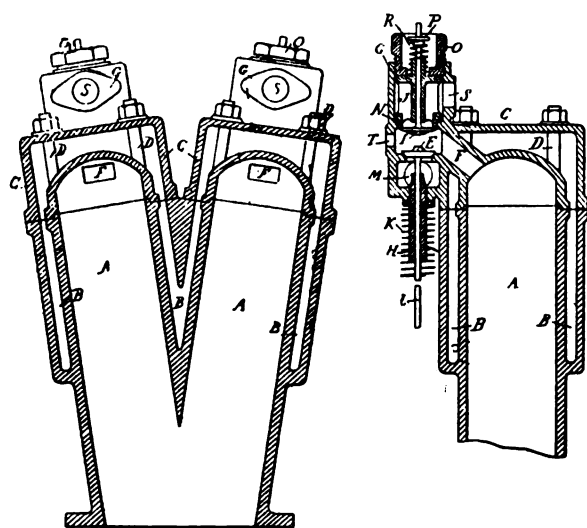
THE Coventry papers have been devoting considerable space to articles dealing with the trade of the city during 1899, which contained interesting references to the motor industry. One writer stated: "The motor-car business is regarded with hopefulness in relation to its future. What has been done hitherto has been largely experimental. What may be called solid and safe bases have been discovered, and henceforward, though that nearness to perfection which has to satisfy all human ideals has not yet been achieved, the industry may be conducted on wider than experimental lines. Motor-cars are making their way in the world, and Coventry can make them for the world, and hopes and expects to do her share."

It is reported from Kelso, N.B., that a proposal is on foot to form a motor-car company for the Border district.

## IMPROVEMENTS IN DAIMLER MOTORS.

A FRENCH engineer, M. A. Eldin, of 21, Place Bellecour, Lyons, has lately devised some improvements in Daimler and Daimler-Phénix motors, by means of which an additional 2 h.p. can, he claims, be obtained from existing motors. The improvements in question have for object: (1) to increase the power with the same volume, (2) to render the cooling of the cylinders more effective by enlarging the water-jacket, and (3) to so arrange the valves that they can be instantly withdrawn, and that the springs are outside, and so removed from the effects of the high temperature inside the valves. Referring to the accompanying illustrations, Fig. 1 is a section through the two cylinders of a Daimler motor, and Fig. 2 a section through the line *xy* (Fig. 1). The two cylinders are cast in one piece with a double jacket *B*, covering the whole surface affected by the explosive gases. The annular space thus formed around each cylinder is divided by walls, which serve as supports to the jacket, and into which are screwed the bolts *D*, which fix the explosion chamber *C* to the cylinder. These chambers or *culasses* are also water-jacketed, the water space communicating directly with that around the cylinders.

The valve boxes *G* are placed at the side of the explosion chambers *C*, the communication between the two being by means of the large passage *F*. Below this passage is the exhaust valve *E*, the diameter of which permits of its being placed in position from the top. The exhaust-valve rod *L* is guided by the piece *H*, the external spring *K* keeping the valve closed. The inlet valve *I*, before being placed in the box, is fixed in position in a special fitting *J*, the two then being adjusted in the box and fixed by the plug *O*. The valve stem projects upwards in this



FIGS. 1 AND 2.

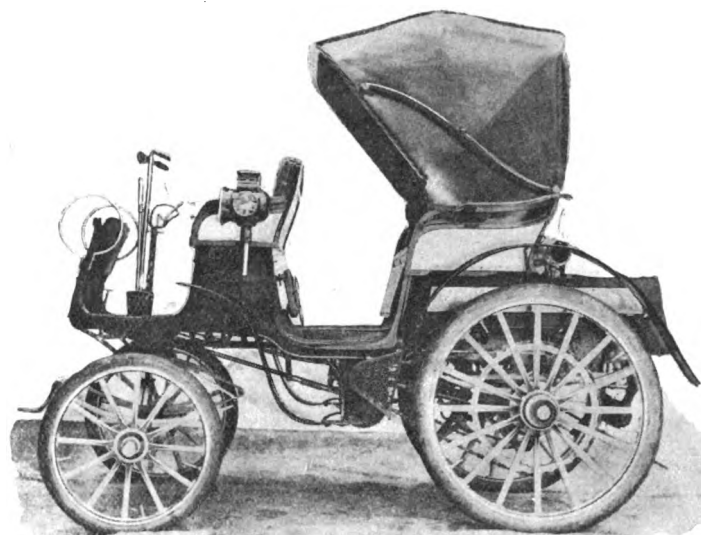
plug; it carries a ring *P* and a spring *R*, which maintains the valve on its seat. The explosive mixture is admitted at *S*, while the igniter is arranged as usual at *T*, between the two valves. To withdraw the inlet valve it is thus only necessary to remove the plug *O*, while the exhaust valve can also be quickly taken out through the same openings by first releasing the springs *K*.

A CORRESPONDENT of the *Sunday Times* has discovered a baronet who asked, "What is an automobile?" Such innocence reminds us of the Lord Chief Justice who wanted to know, "Who is Connie Gilchrist?"

IN a recent issue we announced that Messrs. Clarkson and Capel, of the Clarkson-Capel Steam Car Syndicate, of London, S.E., had set out for America on business bent. As a result of the visit we understand that the Syndicate have disposed of the American and Canadian rights in the Clarkson-Capel burner, generator, condenser, and automatic regulator to the Locomobile Company of America, of Newton, Mass. In connection with this matter Mr. Clarkson will return to America shortly on a visit extending over several months.

## A NEW AUSTRIAN MOTOR-CAR.

WE are this week enabled to illustrate one of the several types of motor-cars which are now being constructed by the Nesselsdorfer Wagenbau-fabriks Gesellschaft, of Nesselsdorf, Austria. The car which, as regards the motor and transmission gear, is built very much on the lines of the Benz vehicles, has seating accommodation for four persons, including the driver. The vehicle is fitted with a two-cylinder petrol motor of 6 h.p., located at the rear; it is provided with a water-jacket and electric ignition. The carburettor is of a special kind of the company's own



design, claimed to be very regular in its action. Four forward speeds—6, 14, 22, and 32 kilometres per hour—are provided, as also a reverse motion. By means of the variation of the electric ignition and the regulation of the carburettor, any desired intermediary speed can, the makers claim, be attained, it being possible by these means to vary the speed of the motor from 80 to 800 revolutions per minute. The petrol tank has a capacity of 38 litres, while that of the water tank is 32 litres. The road wheels are of wood, and are shod with pneumatic or solid rubber tires. A foot-pedal controls hand brakes on the rear wheel hubs, while tyre brakes, actuated by a hand lever, can also be provided. A detachable handle is furnished to put the motor in operation. The length of the car is given as 9½ ft. and the width 4½ ft., while the weight complete is about 18 cwt. The Nesselsdorf Company are also building a two-seated car on similar lines.

At the last meeting of the Electrical Section of the Franklin Institute, Philadelphia, a discussion took place on the subject of "Automobiles."

THE Lyons Moto-Club will have at least six representatives in the Nice races. Messrs. Audibert and Lavirotte, of Lyons, are reported to be fitting out a 32-h.p. car, while Messrs. Rochet, Schneider and Co., of the same town, will have a 24-h.p. vehicle.

THE president of the Automobile Club of France, Baron de Zuylen de Nyvelt, has issued a circular to the members, calling their attention to the censure passed by the club on automobile "scorchers," and asking them to use their influence with all such to moderate their speed.

THE annual meeting of the Motor Manufacturing Co., Ltd., was to have been held on Saturday last, but it was found impossible to complete the making up the accounts, owing to the great detail connected with the taking of stock and the fact that the works for some time past have been fully occupied. No business was transacted at the meeting, but the second annual meeting will be called at an early date, of which due notice will be given, and a copy of the accounts and report of the directors sent therewith.



## THE MORS MOTOR-CAR.—IV.

By "VELOX."

(Continued from page 461.)

## THE MOTOR.

THE Mors cars derive their reputation as extremely fast vehicles and good hill-climbers from the power of the engine employed. Indeed, it is not an exaggeration to state that no other type of motor occupying so inconsiderable an amount of space is capable of developing so great a power; nor do the forms of other motors accommodate themselves to the contour of a carriage-body so happily as does the capable little engine produced by the Mors Company.

When the motor is examined in detail (see Figs. 3 and 4) it is at once obvious that each of the four cylinders comprising the

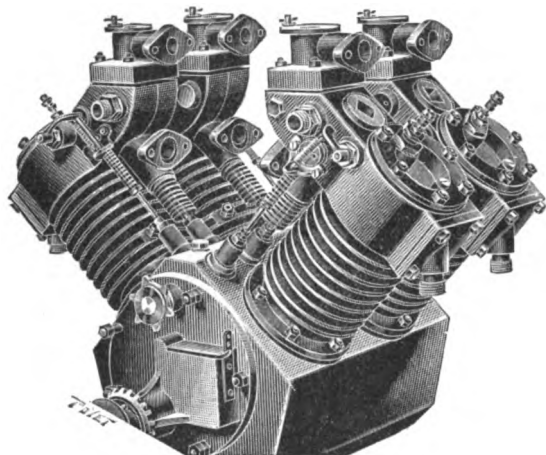


FIG. 3.—GENERAL PERSPECTIVE VIEW OF MOTOR.

complete motor is in effect a distinct engine in itself. The anatomy of each cylinder is complete in itself, but is made to communicate its power output on a shaft common to the whole of the cylinders. Thanks to the particular angle of inclination of the cylinders and their grouping in pairs, many of the faults common to some four-cylindered engines are avoided. And it is also due to this inclination of one pair at an angle of 45 deg. to the other that this powerful engine accommodates itself so well to the necessities of the coach-builder, and at the same time occupies so relatively small a space. Its height from the bottom of the crank-chamber to the top of the pipes admitting the gaseous

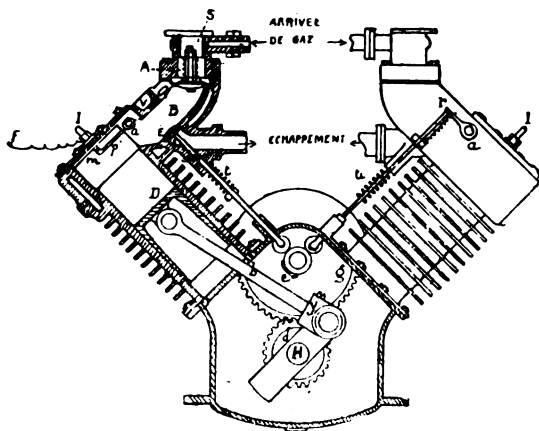


FIG. 4.—DIAGRAMMATIC VIEW OF ELEVATION OF TWO CYLINDERS AND CRANK CHAMBER. (Part in Section and part in Profile.)

charges to the cylinders does not exceed 44 centimètres; its width from the one outside bearing in the crank chamber to the other is only 13 centimètres, and its length over all is but 54 centimètres. This is an example of compactness difficult to equal. Its weight, too, is extremely moderate, and is much less than that of numerous competitive engines of similar power.

An examination of Fig. 3 will demonstrate how the designers have taken advantage of the compound method of cooling the cylinders. For about two-thirds of their length the cylinders are cooled by the passage of air through a number of circumferential fins. The remaining third of the length, occupied by the explosion chamber and the feed exhaust valves, is cooled by water circulation. Fig. 4 gives in diagrammatic form a part sectional elevation of those two of the inclined cylinders which are on the left hand of the motor; this view gives an excellent opportunity of studying the general anatomy of the engine. The positions of the admission and of the exhaust pipes are readily seen, as is also the arrangement permitting, at the moment of suction, the dilution of the gaseous vapours drawn from the carburettor with fresh air admitted through the opening *s*, controlled by palettes or lids operated by the mixture controller fitted in the outside of the vehicle body on the right hand.

The gaseous charge admitted by the valve *A* with the air charge from *s* passes through the chamber *B* (cooling in its path the exhaust valve-head *E*) and is, after compression, fired by the electrical ignition device *I*, part of which is seen to protrude through the cylinder walls. The method adopted to lift the exhaust valve is also plainly seen in the left-hand cylinder forming part of Fig. 4. It shows that the crank-axle *H* carries a pinion *d* meshing with a gear wheel *g* carried on a shaft bearing the cam-wheel *e*. At the moment of the rise of the piston after the explosion stroke, this cam-wheel lifts the spindle *t*, and overcomes the spring fitted thereon, the spring resuming its function of holding the exhaust valve-head *E* on its seating so soon as the cam has passed beyond the valve-lifting stem, which is shown to be fitted with a small roller, designed to prevent friction by the passage of the cam. It will at once be seen, too, how the cooling water is made to circulate

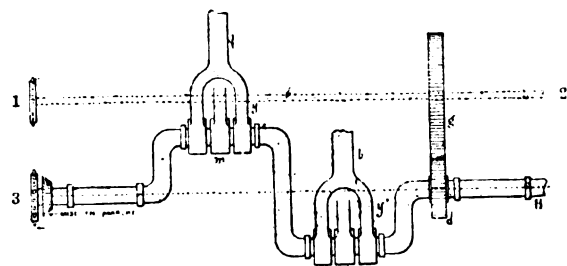


FIG. 5.—1. SPROCKET-WORKING LUBRICATOR; 2. CAM SHAFT; 3. SPROCKET-WORKING PUMP.

around that part of the walls of the explosion chamber which contains the valve seatings, as well as around that part which forms the cylinder head proper.

On examination of the right-hand cylinder shown in Fig. 4 the rod actuating the electric ignition device will be seen. It is lifted by a special cam placed on the same shaft as that carrying the exhaust-valve cam. This rod, like the exhaust-valve spindle, is fitted with a coil spring, whose force is overcome when the cam strikes the terminal roller of the rod, causing the lifting of the lever *r*, pivoted at *a*, and thus effecting the movement of the lever *p* inside the cylinder from the head *m* of the other part of the sparking device, so breaking the continuity of the current.

Some idea of the method of actuating the cam shaft carrying the exhaust-valve and ignition device cams can be formed from an examination of the left-hand cylinder shown in Fig. 4, but a more comprehensive view is given in the diagram (Fig. 5). This latter view also illustrates how the "big ends" of two of the connecting rods are imbricated in order to accommodate the "big ends" of the remaining two in such a way that each of the pairs of rods is enabled to equalise the distribution of its force as nearly as possible at the same point of the crank. On the crank shaft will be found the pinion *d* gearing with the cog wheel *g*, in the ratio of 1 to 2. All the cams are placed on the shaft carrying the cog wheel *g*, each of the eight cams lifting in its turn the exhaust valve spindle, or the ignition device, pertaining to the cylinder at the side of which it is placed. By a reference to Fig. 4, it will be seen that the eight cams, the gear wheels, and the parts of the stems carrying the striking rollers, are all

contained in the crank chamber; by this means all these parts are kept efficiently lubricated.

#### THE IGNITION APPARATUS.

The ignition apparatus of the Mors motor possesses several novel features. As it has been remarked in a previous section each cylinder has its complete and independent organs, and this of course applies equally to the ignition apparatus. The current employed to effect ignition is an induced current, the tension of the current taken from the secondary or storage batteries, or that from the dynamo, whichever be employed, being reinforced by means of powerful induction coils.

Figs. 6 and 7 are so admirably drawn that but little difficulty will be experienced in comprehending the whole of the chain of operations, comprised in the production of the spark actually causing the ignition of the explosive gases in the cylinders of the motor.

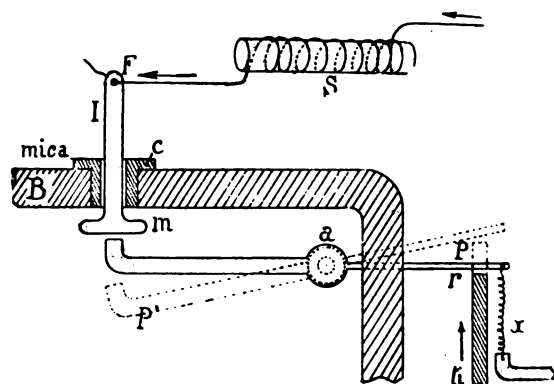


FIG. 6.

S. Induction coil.  
F. Conducting wire.  
I. Sparking plug.  
m. Head of sparking plug.  
C. Mica insulator.  
B. Outer walls of cylinder head.  
a. Axle of contact breaker.

r. Distance (2 mm.) between rod and lever.  
P'. Contact breaker (in interior of cylinder).  
P. Lever actuating contact breaker (on exterior of cylinder).  
x. Spring holding down P.  
ti. Rod actuated by cam.

At I, Fig. 6, will be seen the stem of the sparking plug, this passes through the main walls of the explosion chamber of the cylinder B, being insulated therefrom by the mica insulator C surrounding it. This stem is terminated at the end placed in the interior of the cylinder, in a plate-shaped disc m. A lever P, made of nickel and turned up at its free end, is keyed to the axle a. The normal position of its turned-up end is in contact with the plate-shaped disc m, terminating in the sparking plug I. To the axle a, but on the outside of the cylinder walls,

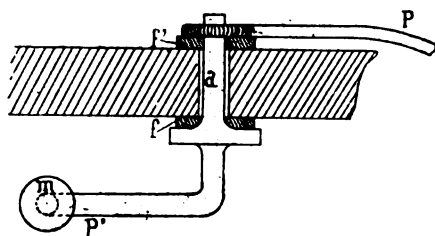


FIG. 7.

m. Disc or head of sparking plug.  
P'. Arm of the contact-breaking lever.  
a. Axle of P' and lever P.  
P. Arm of the lever P on the exterior of cylinder.  
t, t'. Asbestos washers or joints.

is keyed the rod or lever P; to the outer end of P is attached a coil spring x, which causes the point of P' to be kept in contact with the disc m, owing to the fact that P' is keyed to the axle a in such a manner that its movement is in the same plane as that of P. The striking-rod ti, when it is made to rise by means of its cam, overcomes the tension of the spring, and closing the gap r (which measures 2 millimètres), causes the contact between the end of P' and m to be broken, with the result that a spark is produced. This actually takes place when the piston is on its first

upward, or compression, stroke, the spark being produced before the compression is completed, and when the rising piston has still to make 18 millimètres travel before completing its compression stroke. The spark is produced by the rupture of the flow of current from the induction coil S, through the plug I, the plate or disc m, and the lever or "trembler" P to the axle a, whence it passes to "earth," or, in this case, the "mass" of the motor to which the negative circuit is attached.

In Fig. 6 the whole arrangement is seen in elevation, whilst a view in plan is given in Fig. 7. When the cam is not lifting the rod ti as seen in the position shown in solid lines in Fig. 6, the 2 millimètre gap is plainly seen as at r. When the rod ti is lifted, the circuit of the current remains open for a certain length of time, determined by the length of the cam. When the cam has passed from contact with ti, this latter is made to descend by the tension of the helical spring fixed thereto, and at the same time the lever P is brought down by the spring x, turning the axle a, and bringing the point of P' again into contact with the disc m of the plug I, thus re-establishing the circuit until the next passage of the cam brings about a further cycle of these movements. The actual period of consumption of current in each cylinder is one-fifth of the cycle—that is to say, one-fifth of each two revolutions—therefore it follows that the total period of consumption in the four cylinders equals four-fifths of the time occupied in completing the cycle, or two revolutions.

It has been stated that the production of the spark is made at a point when the compression is still incomplete by 18 millimètres of the piston's compression stroke. This is its normal period of production, and means are provided which permit the advancing or retarding of the production of this spark until it is produced exactly at the correct instant; but as this leads to complicated developments, it must be dealt with in a separate section.

(To be continued.)

MR. HAROLD CADLE has opened offices at 110, Cannon Street, E.C., where he will act as sole agent in London and district for Messrs. T. Coulthard and Co., Preston.

THE Starr Bros. Bell Company, East Hampton, Conn., U.S.A., are bringing out a new bell for automobiles; it will be a 3½ in. gong bell of attractive form and adapted to be operated by the foot.

A CORRESPONDENT of the *Daily Chronicle* suggests that motor-vehicles should be stationed at certain inclines in the much frequented streets of London to help van horses in difficulties.

THE second annual general meeting of Stirling's Motor Carriages (Limited) was held in Glasgow on the 29th ult., when the directors' report and balance-sheet were adopted, and a dividend of 5 per cent. for the past year declared.

THE London newspapers are not alone in making use of automobiles, for we learn that the proprietors of the *Yorkshire Telegraph and Star* chartered a motor-car to take the papers to Barnsley on Christmas Day, no train being available.

THE second Automobile Club House dinner of the season is to be held on Wednesday evening next, the 10th inst. As already announced, Mr. Thos. H. Parker, M.I.M.E., will, after the dinner, read a paper on "Electricity on Common Roads."

AT the last meeting of the Automobile Club of America it was announced that Mr. John B. Walker, of the Mobile Co. of America, Tarrytown, N.Y., had offered the club a county club house at Kingsland Point, north of Tarrytown, fully furnished, for the year 1900. The offer was gratefully accepted.

THE following additional entries of motor-vehicles for the Automobile Club's 1,000-mile trial have been intimated:— In the Amateur Class: Count Zborowski, 24 h.p. Cannstatt Daimler; Mr. Ernest Hutton, J.P., Panhard; Mr. Alfd. Harmsworth, three motor-carriages; Mr. J. Hargreaves, J.P., 12 h.p. Daimler; Mr. Charles Parker (of Leeds), 2½ h.p. De Dion tricycle. In Section I.: The Edinburgh Autocar Company, 5½ h.p. Daimler. In Section III., Class A., the Clipper Pneumatic Tyre Company enter a carriage fitted with Clipper pneumatic tyres.

## FURIOUS DRIVING CASES.



AT Derby Borough Police Court, on Monday, Arthur Vickers, of Nottingham Road, driver, in the employ of the newly-formed Derby and District Motor Car Company, was summoned for driving a motor-car in the Corn Market on 26th December at other than a reasonable and proper speed. P.-C. Cox said the car was going at twelve miles an hour. Superintendent Clamp said the officials of the company had been warned, and were requested to warn their drivers about the furious rate they drove the cars. A fine of 10s. and costs was imposed.

AT the Cambridge Borough Police Court, on the 29th ult., Mr. Herbert J. Storey, cycle agent, of Mill Road, was summoned for driving a motor in Petty Cury, on December 21st, at an unreasonable and improper speed. He pleaded not guilty. P.-C. Maskell stated that he was on duty in Petty Cury on December 21st, and saw the defendant driving a light locomotive through that thoroughfare, in which there was a great deal of traffic at the time. Defendant was coming from the direction of Market Hill, and three cyclists were entering Petty Cury from Sidney Street end. One of the cyclists, who were on the right side of the road, collided with the motor-tricycle, which was at first in about the middle of the road, but in taking the turn went very close to the off-side. The motor was travelling at a very great speed, and no alarm was sounded. The cyclist who was thrown off refused to take proceedings. The motor was travelling at ten miles an hour, and after the collision it was brought to a standstill in two or three yards. Witness told the defendant he was coming too fast through the Cury, giving his opinion that he was travelling at ten miles an hour. Defendant denied driving at an excessive speed. He asserted that the constable was no judge of speed. William Rutherford, Scotland Road, Chesterton, clerk to the Borough Surveyor, said he saw the defendant on a motor-tricycle on the wrong side of the road in Petty Cury driving at a very fast pace, considering traffic in the thoroughfare. Defendant, having affirmed, said he admitted he hugged the pavement on the Post Office side. The collision took place as the constable stated, but it was so gentle that the cyclist was not hurt. If he had been on the bicycle or driving a horse and cart the collision would have occurred just the same. He was not travelling at anything like ten miles an hour. Dr. Cooper said the magistrates were satisfied that the defendant was driving at a greater speed than was reasonable. He would be fined 10s., including costs.

[In connection with this case Mr. Storey writes us as follows:— "Needless to say the pace was not more than half the rate stated, and the tricycle was pulled up in three or four yards upon seeing three cyclists in single file coming round a corner. The first two cleared, and the last man just touched the tricycle and went down; he was not injured in the least, neither his machine, but, of course, Mr. Policeman wanted a job; hence the charge, and fine of 10s."]

## MOTOR-CAR ACCIDENT IN SCOTLAND.



SHERIFF BURNET gave judgment last week in Aberdeen Sheriff Court in the action at the instance of Mr. Wm. Cromar, plumber, Aberdeen, against Mr. Wm. Harper, manager of the Benz Motor-Car Company, Aberdeen, in which the pursuer concluded for £500 of damages for personal injuries sustained by him through having been, as he alleged, run down by a motor-car, driven by the defender, on the south Deeside Road, opposite the Mill Inn, on 6th August, 1898. The defence was that the pursuer was not touched by the car, and that he sustained his injuries through falling over his bicycle on the road. The sheriff substitute has sustained the defence, and absolved the defender, with expenses. In his note, the sheriff substitute states that he holds it proved that the car was travelling at a rate of about 6½ miles an hour, "a rate which was neither excessive, nor, under ordinary circumstances, at all dangerous; and no blame can attach to the defender for using it even in passing a crowd of people, when, as all the witnesses say, at least half the road was clear." He also says that the allegation that the car really touched the crowd, or the pursuer, is satisfactorily disproved. "I base my judgment upon the opinion that the pursuer has failed to prove the case alleged on record. But I am, at the same time, satisfied that that case is an after-thought on the pursuer's part, and that he has failed to prove it because the facts which actually happened are inconsistent with it."

## THE BEESTON MOTOR COMPANY, LIMITED.

THE annual meeting of the Beeston Motor Company was held at the works, Cheylesmore, Coventry, on Friday last week. Mr. Rowland Hill, J.P., presided, and there were also present the other two directors (Dr. Iliffe and Mr. S. Gorton), the solicitor (Mr. S. R. Masser), the secretary (Mr. E. F. Peirson), and the auditor (Mr. Herbert Pepper). No shareholders attended. The chairman said he was sorry there was not a large meeting, but he presumed that was due to the bad weather and the season of the year. The accounts showed that the company had made a profit of £712 14s. 6d., and he thought, considering the difficulties of the motor trade and the cost of experimenting, that the Board were to be congratulated on the result. Mr. Gorton seconded the motion for adoption of the report, and certainly thought the year a fairly satisfactory one. There were a number of cycle manufacturers who were now at work on motors, but they would have to do what the Beeston had—pay for

experience. England was ten years behind the French and Germans, but he thought that now the Continent was being caught up. The report was adopted. On the motion of Dr. Iliffe, Mr. R. Hill was re-elected a director, and that gentleman said his best services would still be at the disposal of the company. Messrs. Pepper and Rudland were re-elected auditors.

At a meeting of the Newcastle Watch Committee last week, the question of granting new licences for motor-cars to run within the city during next year was considered. It was stated that out of the 33 licences granted during 1899 to run motor-cars there were only ten applications for renewal.

AN order has been issued by the Commissioners of the District of Columbia, at Washington, U.S.A., to the effect that the speed of automobiles and other vehicles of similar type shall hereafter be limited to twelve miles an hour within the city limits, and fifteen miles an hour in the country adjacent to the city.

REFERENCE has frequently been made in these columns to the suitability of motor-cars for the work of doctors, especially those resident in country districts, and it is satisfactory to find that the number of members of the medical profession making use of automobiles in place of horse-drawn vehicles is steadily increasing. If any doctor is wavering as to making a change he should be reassured by the experience of the doctor whose practice is in a hilly district of the West Riding of Yorkshire, who for some months has been using a "Marshall" car, built by Messrs. Marshall and Co., of Clayton, Manchester. He has driven it over 1,000 miles, the daily average being seventeen miles. The doctor in question remarks that he has "kept horses for the last thirteen years, but never again," he considering the automobile not only a much pleasanter means of getting about, but also much cheaper.

## TO CORRESPONDENTS.



All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

Vol. I.]

LONDON, FRIDAY, JANUARY 12, 1900.

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## COMMENTS.



IT is freely conceded that in one department of motor-vehicle construction at least, viz., that of heavy steam motor-wagons, British firms stand at the head of the list, and this, too, in face of the many difficulties they have to contend with in respect of the conditions and regulations imposed by Parliament and the Local Government Board. In the present issue we devote considerable space to a description of a new steam motor-lorry—the Simpson-Bodman. From the statement made by the builders that they have found it necessary to experiment with and invent in practically every detail of the vehicle it is evident that the lorry they have produced is not the result of mere guess work. No doubt the new wagon will compete for the honors in the trials of the Liverpool Self-Propelled Traffic Association in October next, and we shall look forward to the results with interest.

### Motor-Wagon Trials in Bradford.

THE motor-wagon trials in connection with the Yorkshire Cycle and Motor Show which is to be opened on Saturday took place on Tuesday. Although seven makers had entered for the trials, only two competed, viz., Messrs. Mann's Steam Car and Waggon Company, Leeds, and Messrs. T. Coulthard and Co., of Preston. The wagons left the Belle Vue Barracks at 10.30 a.m., and travelled to Keighley. Owing to an accident to a steam pipe, the Coulthard waggon had to wait at Keighley for repairs, which were not completed in time to allow the full run to be made. Another trial was, however, to be made on Wednesday. The Mann motor-wagon, which carried bales of wool weighing four tons, besides three passengers, performed the whole journey to Kildwick and back at an average speed of about five miles an hour. The official tests were made by Professor Goodman, of Leeds, assisted by Mr. Cyril Lupton, of Bradford. The trials were witnessed by representatives of various trade organisations, including the Bradford Dyers' Association, the Bradford Coal Merchants Association, and the London Brickmakers' Association.

### The Automobile Club's 1,000- Mile Trial.

THE arrangements in respect of the Automobile Club's 1,000-mile trial are proceeding apace. The secretary continued his tour of inspection on the 5½ h.p. Daimler wagonette on Thursday, the 4th inst., from Leeds, *via* Harrogate, Bradford, Wakefield, and Barnsley, to Sheffield, 74½ miles. The roads were in bad condition. On Friday last the run was continued from Sheffield, *via* Worksop and Lincoln to Nottingham—82½ miles. The sporting editor of the *Sheffield Daily Telegraph* took a seat on the car for this run, but in spite of extra warm clothing which, in accordance with the advice

given him, he wore, he found himself unable to stand the cold and had to abandon the run at Worksop. The Duke of Newcastle allowed the inspecting car to run through Clumber Park. It is suggested that His Grace should be asked to allow the whole of the trial vehicles to travel at top speed through Clumber Park, and that their times may be taken at the two lodges. It has been decided to adopt the suggestion made by Mr. F. M. Bostock, of Cheltenham, that the route should pass through that town. The Winter Garden will most probably be obtained for the display of the trial motor-vehicles. It is probable that the trial vehicles will also be shown during a period of two hours at Harrogate before the Victoria Baths, and a similar exhibition will take place the same day in a public square at Bradford. At Lincoln the editor of the *Echo*, Mr. Wilkinson, Mr. C. H. Gilbert, and others, proposed to form themselves into a Local Committee to arrange for the display of the vehicles in a public square for about two hours, while at Nottingham application has been made for the use of a repository which has been recently erected near the centre of the city for a public exhibition of the vehicles on their arrival in that town. It is further suggested that the last day's run should be from Nottingham to London—124 miles—as it is thought the arrival of the vehicles at an exhibition building in London after a long day's run would go far to prove to the public the capability of motor-vehicles. Entries for the trials are being received at a satisfactory rate, the number already extending, we understand, to close upon fifty.

### The Gordon- Bennett Challenge Cup.

DISAPPOINTMENT has been felt in automobile circles by the news that the old year closed without the Automobile Club receiving any entries in respect of an English challenge team for the Gordon-Bennett Cup. We understand that the principal owners of racing cars were communicated with on the subject, but that no response followed. As already mentioned, the formal entries have been received from the automobile clubs of Germany, Belgium, Italy, and America, the date of the race being fixed for June 14th next.

### The Height of Hedges.

THOSE who seek to interfere with the right of the automobilist to travel on the highways at a speed which does not endanger human life—though it may prove harassing to tortoises and lame ducks—must be careful; for any attempt to reduce the speed indicated in the regulations now in operation may provoke incidental questions to arise, the proper settlement of which would be regarded as irksome by a large class. The Parliamentary Committee of the Essex County Council has recommended the Local Government Board to make a new regulation to the effect "that the speed of light locomotives on turning corners should not exceed five miles per hour." In the discussion at the full meeting of the Council, Mr. G. T. Bartrum thought instructions should also be given to have hedges

at corners cut low, and the responsive "hear, hear" of several councillors was heard to approve the idea. There is no doubt the height of hedges at the corners of lanes is a serious difficulty with all who ride (whether they are drawn by horse or motor), and if any restriction of speed is to take place at these points it must also be accompanied with a restriction of the height of everything that obscures the view of vehicles or pedestrians coming at right angles along roads that cross. Councillor Wakelin, speaking as a farmer, said he often received letters asking him to have his hedges cut, but he should only do that when it suited him. Evidently the matter is important, and the mere suggestion that owners of vehicles wanted to order farmers to cut down the height of hedges would cause something like a rising amongst depressed agriculturists, who would plead to be let alone. That is exactly the position of the automobilist. He does not want a speed which is most reasonable to be cut down at the bidding of local authorities who are inclined to bow to tradition and hearken only unto the constituents who own horses.

#### More Suggested Regulations.

BUT the Essex county councillors are not only concerned with turning corners, and they have petitioned the Local Government Board to adopt the following proposals:—That no person should be permitted to drive a light locomotive in a public place until he has obtained a certificate of proficiency from the Local Government Board; that all light locomotives be registered, and bear the name and address of the owner painted thereon, in large letters, or that they carry a denoting mark or number, so placed as to be at all times easily seen by the police; that the Local Government Board be requested to fully advertise their regulations throughout the county by means of posters and otherwise. As to the first of these, every automobilist would agree and rush away to obtain his certificate without difficulty. But would the Essex farmers and market gardeners also impose such a test on those who are employed in charge of their great wagons that take produce from Romford, Brentwood, and the district round about, to Covent Garden? They would certainly have to find other men, if certificates of competency were required. If motor-vehicles are to be numbered, why not horse-drawn traps and vans? With regard to the suggestion as to posters, etc., we have no objection, but probably the Society for Checking Advertising Abuses would protest if our Westmoreland hilltops and Derbyshire dales were to be desecrated by the posting of official orders with regard to motor-cars. Otherwise, there is little to be said against the proposal, especially if the regulations against the furious driving of horses, mules, and donkeys were similarly made known.

#### "The Persecuted Motors."

UNDER this heading the *Edinburgh Dispatch* reviews the offences during the past year in which the motor-car was concerned, coming to the following conclusion:—"Occupying a class which may be said to stand midway between the civil and criminal prosecutions are those cases that deal with charges of furious and reckless driving. During the year the public have become tolerably familiar with indictments of this nature brought against drivers of motor-cars. At present the convictions and acquittals stand about equal. One thing is worthy of remark—that in not a single case has injury to the lieges through the speed of these vehicles been proved!" In this latter statement is a clear demonstration of the fact that we have so often urged in these columns, viz., that the proportion of dangerous accidents through motor-vehicles is below that resulting from horse-drawn vehicles.

#### The Engineer and Motor-Cars.

AFTER the very hostile position taken up by the *Engineer*, it is refreshing to read in the last issue of our contemporary, in the course of an article on the progress of Mechanical Engineering during 1899, that "Considerable progress at last seems to have been made in motor-car construction. A great deal has been

learned, among other things the important truth that a light mechanical car cannot be made to stand hard work on country roads. The intelligent visitor to the Crystal Palace during the recent cycle show could not, we think, fail to be impressed by the difference between the massive, well-built carriages of 1899 and the toy Victorias of 1896. As to the motive power, it may be said that, for the lighter pleasure vehicles, the light oil, or Daimler system, is, for the present at all events, first, though it is fair to say that Mr. Roots, the persistent and able advocate of the heavy oil engine, is making and selling vehicles pretty freely. For the heavier, or motor-van type, steam has so far given by far the best results, whether the fuel used be petroleum or coke."

#### The Load Limit.

THE *Liverpool Daily Post* says it is difficult to perceive any unanswerable objection to the enlargement of the load limit of four tons to six tons on heavy motor-vehicles, and then proceeds to point out that "Roads are made nowadays with such firm foundations that no special damage need be apprehended. With moderately broad wheels, indeed, the motor may approximate somewhat in its incidental functions to a road roller, instead of cutting channels in macadam after the manner of the heavy-laden horse-lorry." Everybody must recognise that the railway companies have failed to meet all the needs of short-distance traffic; hence the employment of horses under many conditions which could be adequately and economically fulfilled by motor-vehicles if the load were allowed to be increased. The great obstacle, our contemporary explains to the people of Liverpool, is the tying down of motor-vehicles to a load of less than half of what a sturdy team of horses can manage. Its removal would strike the fetters from inventive genius by allowing a wider range in the choice of metals and the weight of parts, whose strength must now in many cases be sacrificed to the necessity of lightness.

#### The Motor Deal.

JUST now the financial papers are much exercised as to the doings of the automobile world, and the *Financial News* has ceased its chronicle of accidents to record what it describes as "The British Motor Mystery." Firstly, our contemporary declared that a "rig" had been organised in British motor shares, which Mr. A. R. Harvey denied in its issue of the 3rd inst., adding the information that "until six weeks ago I had never seen, nor had a deal with, Mr. H. J. Lawson in my life," and making an offer to send £1,000 to the Lord Mayor's Soldiers' Fund should an arbitrator—Mr. Alfred Harmsworth was suggested—decide against him. £1,000 was to be deposited by Mr. Harry Marks, M.P., to be remitted to the fund in the event of Mr. Harvey's assertions being proved.

#### From an American Source.

THE next reference to the matter in the *Financial News* appeared on Monday in a long extract from its Philadelphia namesake, in which the history of the organisation of the Anglo-American Rapid Vehicle Company was recounted and some statements made which will interest, and probably amuse, some of our readers. "The company," says the *Financial News* of Philadelphia, "will take over six British companies, of which the British Motor Company is the foremost. . . . Orders aggregating 12,000 vehicles are stated to be on the books of the British companies at this time, and an order from the Humber Motor Company for 10,000 more, to be made in the United States, for export, is in hand. . . . A line of oil motor-vehicles is stated to be now in operation in London and other cities, and it is claimed these vehicles can make a run successfully of 100 miles. . . . The 75,000,000 dols. stock will be all common, fully paid par 100 dols. Roundly but 15,000,000 dols., it is stated, will come upon the market and that not until the position of the company, commercially and otherwise, is so known that the shares are likely to command a good price."



### Operations Commenced.

THE latest development comes by cable to our financial contemporary in the announcement of the arrival of Mr. E. J. Pennington at New York on Saturday, "with an office staff and a large number of models, to open the elaborate offices in the Commercial Cable Building taken by the Anglo-American Rapid Vehicle Company. The promoters state that the new company aims to control all motor patents, that no public issue of stock will be made, and that their business will be confined to the manufacture of rapid vehicles for the American trade and for export to the English and continental markets. They claim to have made a combination of all the important manufacturers in America to manufacture on a large scale, so that they will not need to erect a plant for themselves." Mr. W. W. Gibbs, of Philadelphia, the former president of the Electric Vehicle and Storage Batteries Companies, is the president, with Mr. F. D. Carley, of New York, formerly president of the Monetary Trust Company, as vice-president.

### Automobiles at Hunting and Shooting Meets.

A NOTABLE feature of the annual autumn meeting of the Meadow Brook Hunt Club, states an American contemporary, was the presence of several automobiles, this being the first occasion in the history of sport in the United States on which the popular horseless carriage has taken its place in line with the road coach, the brake, and the whole range of sporting and road vehicles. A sight so novel naturally attracted much attention. Even the society people at the hunt, to whom automobiles are as familiar as four-in-hands, could not refrain from some expressions of surprise when they saw the noiseless vehicles speeding over the Long Island country. In France, too, the automobile is beginning to make its appearance at similar meetings, the illustration given on another page—for which we are indebted to our contemporary *La France Automobile*—showing a meeting of automobilistic partridge shooters at the estate of M. Ch. Boudin, at La Bosse.

### Motor-Vehicles in South Africa.

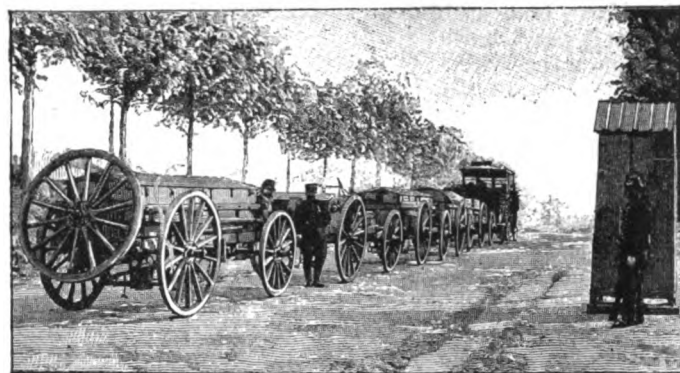
CONSIDERING that the English motor-cars of to-day are but the products of three years' practical experience, and remembering also that the industry in this country has been hampered by restrictive legislation as to speed, whereas in France there is no such limitation, it is not to be denied, says the *African Review*, that English manufacturers have shown considerable activity and ingenuity in developing the industry. With the popularisation of horseless vehicles in this country, manufacturers will, no doubt, pay greater attention to the Colonies, of which none offer a better field than South Africa. Motor-vehicles have already been imported into the country for commercial purposes, and have, with the exception of one or two which have gone into Rhodesia and are there of little use on account of the absence of good roads, given general satisfaction.

### A Newspaper's "Demon."

THE *Herts. Standard* may be an excellent chronicler of county news, but its views of motoring are antiquated, and need considerable revision. After referring to the motor-car as a "terrestrial flying machine" our contemporary goes on to say that "Hockliffe, being situated conveniently between London and Coventry, has day by day since the inception of the motor-cars seen their number steadily increase until 'Mo-o-tor' has become the constant cry of the small boy. The 'Terror of Terrors,' beyond doubt, consists in a sort of trolley contrivance, used by the Coventry trade mechanics to convey materials to and from London. It can only be remarked of these oily and fiery 'demons' that the sooner such are relegated to their several spheres the better for the general public." In this latter sentence the *Herts. Standard* is unaccountably spiteful, and we can only observe that the villagers who—again we quote from our contemporary—"do not despair of yet seeing a pantechicon flash past" evidently possess greater prescience.

### Automobiles for Military Purposes.

IN several of our recent issues reference has been made to the question of automobiles for military purposes, and a week or so ago we announced that the German war authorities had definitely placed orders for a number of Cannstatt-Daimler wagons. We are this week able to give two illustrations showing what is being done by the French military authorities in the way of utilising automobiles in connection with the service. The

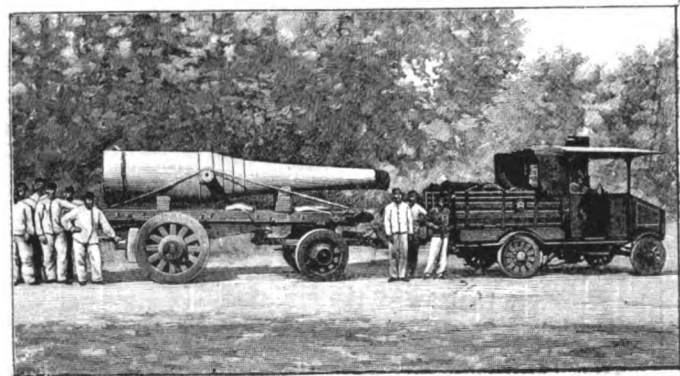


A SCOTTE STEAM MUNITION TRAIN USED IN THE FRENCH ARMY.

first of the illustrations, for which we are indebted to *La Nature*, depicts a complete automobile military munition train, and the second a motor-tractor hauling a heavy siege gun. The train consists of a Scotte steam tractor and six wagons of the type now largely used in connection with public services of country towns in France not provided with railway communication.

### The Advantages of Automobiles in the Army.

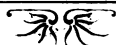
It is nearly twenty-five years since the French army authorities adopted traction-engines. These are, however, now being discarded owing to their heavy weight not permitting them to be taken over many of the country bridges, and in 1897 it was decided to give the Scotte vehicles a trial; and these tests were continued in 1898, and again last year, until now it has been definitely decided to introduce them into the French Army. The Scotte tractor weighs from 5 to 6 tons and does the work that was formerly performed by thirty-two horses; not only so,



A SCOTTE STEAM TRACTOR HAULING A HEAVY SIEGE GUN.

but the absence of the horses decreases the length of the train by almost one-half, and reduces the attendant *personnel* from 180 to only 120. The speed of the Scotte road train is much faster than that of traction-engines, and as there are no stops necessary for changing or resting the horses, the journey undertaken can be performed in a minimum of time. Another important advantage for the automobile train is that in view of its relative shortness as compared with that of a horse-train, the number of soldiers required to guard it is consequently less. It is to be hoped that our military authorities, who have apparently declined to inaugurate trials with motor-cars on their own account, are keeping pace with what is being done in connection with the introduction of automobiles in the armies of the Continent.

# The Simpson-Bodman Steam Lorry.



THE steam lorry described and explained in the following lines is the result of nearly four years' continuous experiment. The combination in the experimenters of the professions of engineer and carriage builder, and the fact that they have been enabled to devote themselves entirely to this subject is proof, if of nothing more, that they must have amassed a fund of experience of points to be avoided, as well as of the desirable features necessary to make heavy goods transport commercially successful. In the light of the restrictions placed upon the use of heavy motor-cars by the Act of 1896, legalising their working on the highways, and of the totally different conditions that carrying and internally propelling the loads over very vibratory roads at good speeds involved, Messrs. Simpson and Bodman, of the Pomona Engine Works, Cornbrook, Manchester, the builders of the vehicle under notice, remark that it is not surprising that prior experience has proved of very little value in the design and construction of steam lorries. Scarcely a feature, whether of lorry design and suspension, the generation of the needful power, or the transmission of the power to the road wheels, existed prior to 1896 in a form satisfactory to work under the conditions that modern users will demand. We learn that it has been necessary to experiment and invent in: Framing and suspension of lorry work, construction of wheels, engine construction, transmission of gearing to apply the engine power to the road wheels, generator construction, feeding, and control. Bearing in mind that the margin of weight allowed is only about 33 cwt. over the weight of a horse-drawn lorry, at which motor-wagons are to supply a power capable of working continuously

a full two or three horse load at a speed two and a half times the horse speed, to equip a lorry with braking and manoeuvring appliances of a far superior type to any horse lorry, and construct a lorry to stand the increased wear and vibration that increased speed involves, some idea of the difficulties can be obtained.

In the system described below the makers claim to have found a solution that is in the present stage thoroughly commercial, and only needing progressive manufacture to bring it to the mechanical perfection that shall entitle it to rank as an ideal method of road transport.

The available area for goods on the lorry illustrated in Fig. 1 is 78 square feet, and the springing or suspension is for a load up to  $3\frac{1}{2}$  tons, arranged to come into full action when the load exceeds 2 tons. Care is taken to avoid too harsh an action of the suspension under light load, and also that the distribution of the load by means of the four-spring method shall be so effectual over the length of the rear axle as to render it safe to place the entire live load on this, the driving axle. The circle that the lorry can turn in is given as 33ft. in diameter. The illustration Fig. 1 shows the method of putting the steering arms that move the wheels for "locking" outside the wheels, instead of, as is usual, inside, by which means a longer arc for locking the wheel and a more mechanical arrangement than the usual welded arm are claimed to be obtained. The general arrangement of the lorry is that

the driver stands upon the footplate behind the generator, having to his hand the steering wheel, the throttle-valve handle, reversing handle, by-pass to the boiler, pump feed, and the brake lever.

As will be seen from Figs. 1 and 2, the framing consists of four longitudinals connected by (in the rear) two transverse

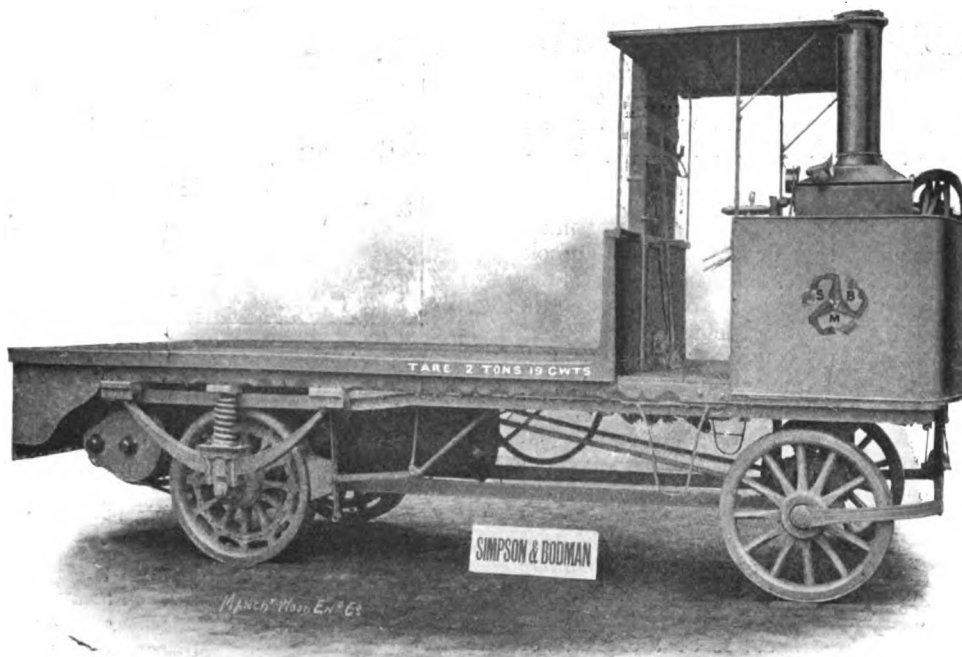


FIG. 1. GENERAL VIEW OF SIMPSON-BODMAN STEAM LORRY.

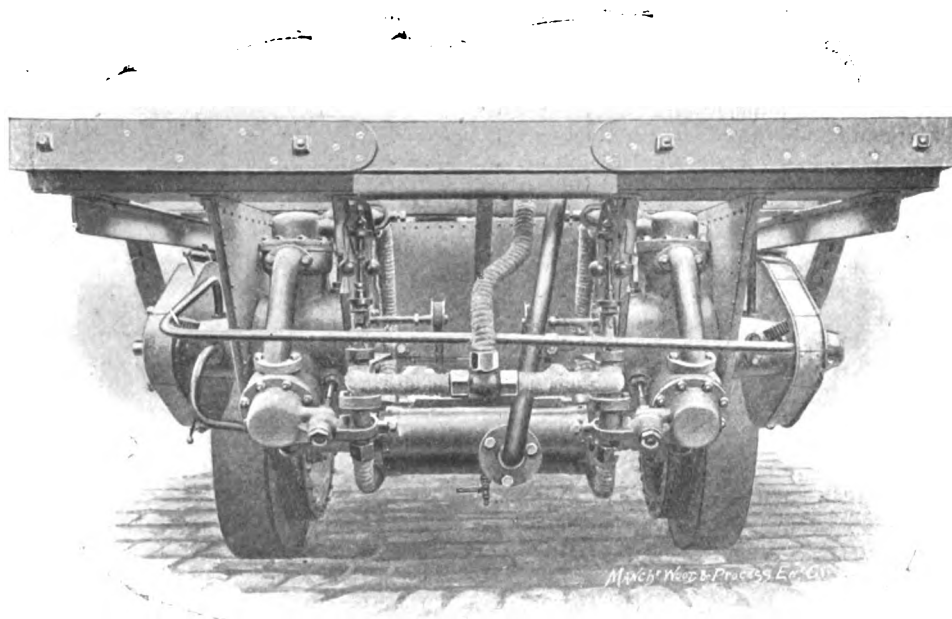


FIG. 2.—REAR VIEW OF SIMPSON-BODMAN STEAM LORRY, SHOWING ENGINES IN POSITION.

frames. This rear framing is supported by four plate springs of very deep camber, so arranged that each spring is directly under one longitudinal bearer. To these plate springs is attached the main or driving wheel axle. Each driving wheel is mounted between a pair of springs, and thus the axle is supported throughout its length. The fore part of the framing is carried

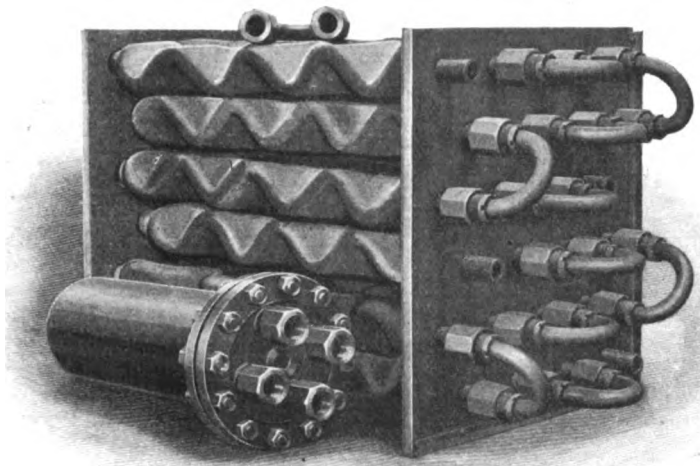


FIG. 3.—GENERAL VIEW OF SIMPSON-BODMAN BOILER.

through spring-loaded pins attached to a transverse wood framing reinforced with steel plates. To this transverse framing is attached the fore axle, and to the same framing, by means of a central bushing are two perch-bars connecting the two axles. These perch-bars are of ash suitably strapped and strengthened. They are united to the rear axle by circular steel collars, which embrace discs formed on the axle, but keyed eccentrically; this is for the purpose of obtaining a rapid and fine adjustment for the chain drive. The front axle is free to oscillate vertically with respect to the main framing.

The engines are placed at the rear (Fig. 2), so that a minimum of noise reaches any horses the lorry overtakes or meets. This position for the engines is also considered the most convenient, as on raising the tail-board the engines are accessible in every part when the lorry is fully loaded. Immediately in front of the engines, and so disposed that the entire weight is on the driving axle, is the water tank holding about 100 gallons, sufficient for an average 15-mile run. This tank is filled by a steam-lifter sucking through hose-piping. The length of the hose and size of the lifter is arranged to take water over an ordinary bridge parapet and to fill the tank in ten minutes. Arrangements are made that this pipe shall always be in position, merely requiring to be uncoiled and run out to the stream or pond. The pump that feeds the boiler is placed handy to the driver, and in order to obtain a slow movement is driven off the road wheel, which has a cam or eccentric worked in its stock. The generator is fixed at the front, the fire-door being level with and on the inside of the footplate, ample room being provided on the footplate for the operation of stoking, etc. The fuel is bunkered at the sides of the generator, sufficient room being provided for 700lbs. Welsh coal, or sufficient for nine or ten hours' running.

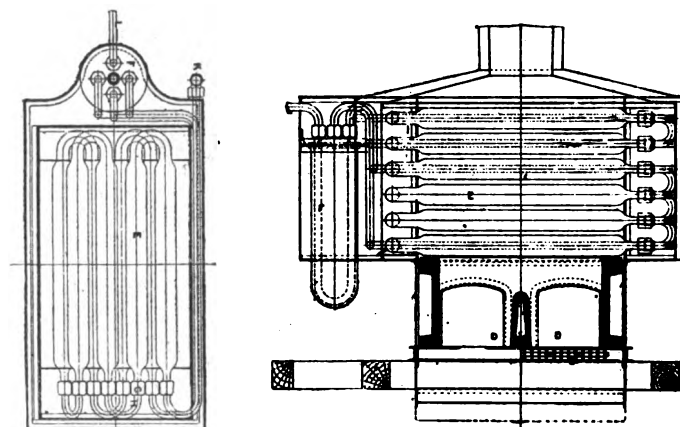
The essential differences between the Simpson-Bodman lorry and other systems are stated to be: (a) a stable suspension of the car and exceeding mobility of the vehicle in manœuvring, owing to the small circle it can be locked in; (b) a type of generator which is in detail of a coarse, unrefined nature, with a minimum (twenty-four) number of joints, such joints being always accessible to the driver when under full steam, and of a type mechanically and theoretically correct, and a generator which never has more than a few quarts of water under pressure; (c) an extremely simple form of engine, with an absence of loose or moving parts in the valve or reversing gears; (d) a transmission of the engine power to the driving wheels, involving a minimum use of gearing and the adoption of independent driving to each side of the car. The rear axle is of weldless steel tubing, fitted with anti-friction boxes to the wheels and provided with metal thrust collars, the

front axles being treated in the same way, with the result that the car is, it is claimed, capable of being moved, when not under steam, by three or four men.

The generator (Figs. 3, 4, and 5) is practically a built-up coil of strong weldless steel tubing. In the course of manufacture a plain round tube is reduced at the ends and in the centre, passed through a die press, and alternately indented on the Row system, so that an extremely restricted passage is obtained, these passages alternating about 168 times in the generator. It will be apparent that any fluid forced through these tubes must encounter such a series of twists and baffles that it is absolutely broken up and brought into intimate contact with the tube walls. The joint used to couple the ends of the tubes to each other is that of the Haythorn Tubulous Boiler Syndicate. This is claimed to be the strongest form of screw-joint known, and is capable of withstanding any range of temperature without leaking, and can be tightened in a moment. A generator is composed of six single bent tubes of twelve elements, which are joined up in a series and placed in a suitable casing. The generator is tested to four or five times the working pressure; even when heated to redness it is stated to remain quite tight under its full pressure. The pressure of steam employed under actual working condition is from 100lbs. to 250lbs. per square inch—that is, its temperature ranges from 340deg. to 390deg. Fahr., but the temperature of the tubes is usually from 600deg. to 1,000deg. Fahr., consequently

the amount of superheat is very considerable. The steam as generated is led into the steam drum, in which is a bent or U-tube (see Fig. 5), and through this tube passes the feed water, either direct from the feed pumps or after it has passed through one or two rows of tubes directly below the flue to cool the flue gases. The total weight of the generator is 645lbs., and of the steam cylinder which constitutes the superheat regulator and feed-water heater, 98lbs., or a total of 743lbs., or, with all mountings, casing, funnel and attachments, 981lbs.

The method of working the generator is as follows:—Assuming the generator is quite dry, the fire is lit, and after it has got brightly to work a few strokes of the hand pump are given. This water will raise pressure enough to set the steam jet in the flue to work and to raise the fire quickly. In about forty minutes from lighting the fire it will be found on using the hand pump that pressure sufficient for starting the lorry is at once obtained, and if all is ready the engines can be warmed up and the car started. The pump driven off the road wheel now takes up the work of feeding the generator, and its delivery is regulated by the driver who, if he wants more pressure, allows



FIGS. 4 AND 5.—PLAN AND TRANSVERSE SECTIONAL ELEVATION OF SIMPSON-BODMAN BOILER.

more water to pass; if less, he opens his by-pass valve and returns the water to the suction. The quality of the steam is so high that very low pressure will, it is stated, work the car. In Manchester streets, with three tons of load, 70lbs. pressure will suffice; in the country about 100lbs. per square inch. It is possible to vary this if a higher pressure is wanted in a few

moments, whilst avoiding running generally under the extremely high pressure usually employed. At the same time, should the car be stopped, the pressure can be let out in a minute or so and the boiler stand empty waiting for a few strokes of the hand-pump to restart it.

In order to obtain as great simplicity in the engines as in the generator, the three-cylinder single-acting engine with simple reversing gear shown in Fig. 6 was designed. The extreme steadiness of this engine is exemplified by the illustration, which is a reproduction of a photo taken while the engine was running at 475 revolutions per minute. It will be noticed that the engine is simply supported on the test table as it is on the lorry, by two 14-gauge steel plates. The exposure for this photograph was 90 seconds. Every line is perfectly sharp, and a rown piece is standing on its edge on the top cylinder. The valve gear is always a crucial point in engines for road traffic, in that the engine should be a reversing engine with all joints and moving parts other than the valve rods themselves eliminated. Messrs. Simpson and Bodman obtain this by plain mushroom valves opened by a cam driven off the crank pin, and reversed by simply drawing the cam in and out of its sleeve. From the driver to the cams themselves there are only three joints in the handles, levers, and gear, and none of these are moving or subject to stress except at changing gear. There are no packed glands or brass adjustments required from the driver, whose attention to the engines is really relegated to seeing that an ample oil reserve is maintained in the crank chamber.

It will be noticed that the admission valves are also safety valves, as, should water enter, the valves simply lift. The total number of parts in the engine is very small. The complete engine, with its gear case and set of gearing chain pinions, holding plates and bolts, etc., as seen on the car, Fig. 2, weighs but 2cwt. Using ordinary steam at 100lbs. per square inch, the motor runs at 500 revolutions per minute and develops  $8\frac{1}{2}$  h.p. There are two such motors, one on each side, each actuating its own driving wheel, the two motors having nothing in common, save the stem or exhaust pipes. Each crank-shaft carries a steel pinion, gearing into a bronze spur-wheel on a short shaft, carried in brackets attached to the motor-casing. On these brackets are the pinions from which the motion is transmitted by chains to the rear road wheels.

By the use of six cylinders (three to each engine) a very constant effort is obtained; two cylinders are always ready for

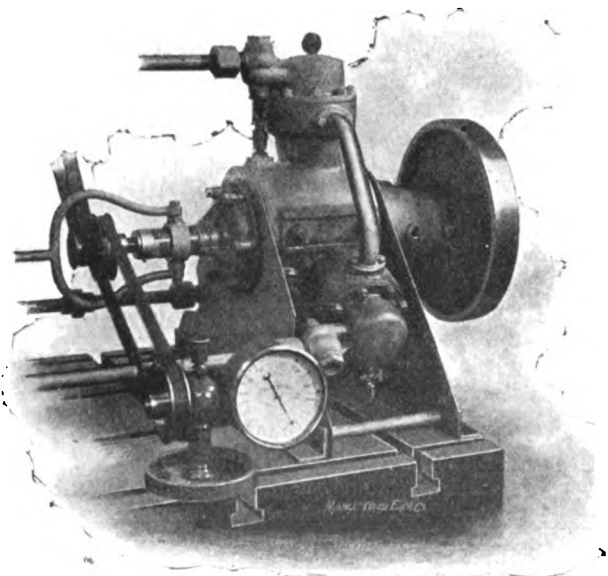


FIG. 6.—GENERAL VIEW OF SIMPSON-BODMAN ENGINE.

starting, and almost invariably the vehicle can start straight-forwards. Steam is admitted to the engines through the throttle valve by the driver. After doing its duty in the engines it is collected in a receiver between them, which has the effect of removing the beat of the exhaust: this passes forward to the base of the flue, where it is superheated and rendered invisible,

and, issuing from a nozzle, promotes the needful draught for the fire.

There are no clutches for effecting changes of speed, but there are three sets of pinions of wheels for each vehicle, giving ratios of 10, 13, and 24. The spur gearing (Fig. 7) is so arranged as to be accessible in a few moments to the driver, who is able in

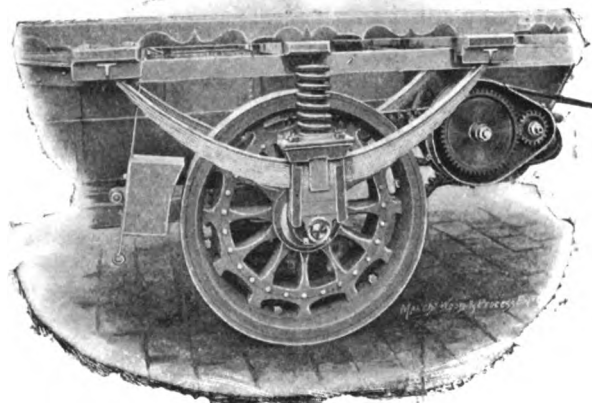


FIG. 7.—VIEW OF ONE OF REAR-WHEELS OF SIMPSON-BODMAN STEAM LORRY.

a contingency to alter his gearing, obtaining practically double his ordinary running power, or by putting in a higher gear if he is working light in the country he can obtain 50 per cent. increase of speed.

The rear road wheels (Fig. 7) are copied from an old traction-engine pattern made by a small country wheelwright, who worked on that class of work thirty or forty years since. The spokes are dished, but the face and off spokes are dished reversed to each other; the tire is flat, and when shod the wheel draws into a perfectly upright wheel, designed for and capable of working parallel with the ground. All the spokes are double faced, the second face being on the chain wheel line; these faces are carefully lined in all around, so that a clean drive from spoke to spoke is obtained without any tendency to twist the spokes. Oak stocks or naves are fitted to the wheels. The steering is by worm and screw, actuated by a vertical spindle placed close to the driver. An important feature of the Simpson-Bodman steam lorry is that every part is made to gauge and template, and is renewable in a few hours.

MR. W. WORBY BEAUMONT contributes an article on "Progress in Automobile Construction" to the current number of the *Engineering Magazine*.

THE village of Gayton, near Lynn, has just been the scene of a double wedding in one family. The brides, bridegrooms, bridesmaids, and the whole of the wedding party were conveyed on motor-cars to the church at East Walton.

IN its first issue for the current year the *Queen* has five paragraphs entitled "Automobilisms" by its cycling editor. They are concerned with the motor-vehicles which formed a striking feature of the Stanley and National Cycle Shows.

AT the meeting of the Birmingham Association of Mechanical Engineers on Saturday last, Mr. J. J. Inness, the recently elected president, prophesied great improvements in motor-cars in the near future, and expressed his own preference for electricity as a motive power.

AT the last meeting of the Bucks Standing Joint Committee, a letter was read from the Surrey Standing Joint Committee asking the committee to join with them in appealing to the Local Government Board to adopt some regulations such as the placing of a number or mark upon every motor-car, so that there might be better identification of light locomotives. The chief constable said he approved of the proposal, and the committee decided to support it.



## The Progress of Automobilmism in 1899.



ALTHOUGH nearly everyone now admits that motor-cars have become more common on our roads, it is only those intimately connected with the motor-car industry and those who take an interest in the question of automobilism who can fully realise the immense progress that has been made during 1899. Now that we have just entered on a new year it may not be amiss if we briefly review the course of events in the automobile world during the past twelve months, and, to begin with, we think we are safe in stating that not in any year since the Act which freed "light locomotives" from the restrictions which previously prevented their progress through the streets

and trips organised by these clubs and associations, have all served to convince even the most sceptical that automobile locomotion has passed through its first stage of experimentation, and is now emerging, if it has not already emerged, into a strictly practical stage of definite manufacture. Improvements in detail are, of course, continually being made, just as they are in locomotives at the present day, even after some sixty years of successful working. We do not desire to convey that perfection has been reached, but we do wish to place on record the huge advancement which twelve months have brought about.

Dealing first with vehicles propelled by means of petroleum-



*Cliché de]*

AUTOMOBILES AT A FRENCH SHOOTING MEET. (See page 745.)

*[“La France Automobile.”]*

unattended by the "red flag" and its bearer, came into operation, have the advances made been so great, relatively, as during 1899. The causes for this rapid expansion are not far to seek. Frequent trials of both a public and private character have demonstrated to positive conviction (1) that road locomotion by automobile vehicles is possible; (2) that it is unaccompanied by any other danger than is progression by horse-drawn vehicles; (3) that in the hands of competent persons the mechanism of a properly constructed motor-vehicle is not liable to internal breakdowns or ruptures; (4) that the expense of up-keep, as well as the cost of travelling, is less with an automobile vehicle than with horse-drawn carriages; (5) that the potential travelling capacity of an automobile vehicle for any given period is considerably greater than that of a horse-drawn vehicle. The various trials of automobile vehicles that have taken place in this country during the year, including those of the Liverpool Self-Propelled Traffic Association in January and July, of the Motor-Car Club in May, of the Automobile Club in June, the Commercial Efficiency Trials of the *Motor-Car Journal* in July, and the 100-mile trials of the Automobile Club in the autumn, besides the innumerable tours

spirit motors, which still lead the way in point of numbers, many new vehicles, some of original design, have seen the light. The two largest concerns have been busily engaged in the production of vehicles of the Panhard type, but in which such improvements and modifications have been made as to earn for them an unexcelled reputation. The feature of the year in this branch has, however, been the increased attention devoted to the production of a lighter type of petrol-car than the Daimler. Space is not available to mention the whole of the new cars which have been introduced, but examples of the type referred to are to be found in the Critchley, "Princess," Marshall, Humber, Beeston, Lanchester, Endurance, Ivel, and Blake cars. The Benz car maintains its popularity, an indication of which is to be found in the fact that cars on similar lines are now being constructed in this country by several concerns, notable among which is the Star Motor Company, of Wolverhampton. Reference has frequently been made in this journal to the growing popularity of light two-seated voituresses in France, and we are glad to find that British firms are beginning to devote increased attention to this class of vehicle. Of this type the Accles-Turrell, the



Osmond, Humber, Progress, and the Jackson Doctor's cars may be mentioned. It is in this class of automobile that we look for considerable developments during the next twelve months. The production of a light non-cumbersome car at a moderate price will greatly extend the circle of would-be automobilists, and thus aid in no mean measure in the spread of automobilism in this country, just as the introduction of the voiturette has done in France.

In regard to engines taking power from explosive admixtures of the vapours of paraffin oils in conjunction with air, there has been little progress. Messrs. Roots and Venables still continue to successfully utilise engines worked by heavy oils, while the McLachlan Engine Company and Messrs. Geering have entered the lists in this branch, in which, however, it cannot be said that much development has taken place. The difficulty which appears to be insurmountable is in regard to the fumes of the gases exhausted from the cylinders. It is apparently impossible to thoroughly deodorise these fumes with certainty and under all conditions of running, starting and stopping, and thus the system of using heavy oils has made but a slow advance.

The petrol-spirit motor section cannot be left without a reference to the rapid manner in which cycle manufacturers have during the past year taken up the manufacture of motor-tricycles and quadricycles, and to the way these machines have caught on with the public. There are now quite a dozen firms turning out motor-vehicles of this type, but although the three-wheeler, by reason of its relatively low price, is likely to remain popular for some time, we cannot help feeling, as indicated above, that the "quad," just as it has done in France, will eventually give place to the more comfortable sociable voiturette.

Coming now to steam vehicles, the advance in this department has been great. In another place, in 1896, we ventured to prophesy that England, which had for so many years held a pre-eminent position in the utilisation of steam power, would soon be found in front of her Continental rivals, in spite of the long start which the latter had in carrying out experiments. The prophecy then made has been fulfilled to the letter, and to-day we have pleasure in putting on record that England is at the front in this section of self-propelled locomotion. During the past year our constructors have supplied steam road vehicles for use on the Continent, in South Africa, in Ceylon, and in a great many provincial centres of Great Britain, as well as in the metropolis. The reason for this is at once apparent on an examination of the steam vehicles of Continental and British constructors. Those of Continental origin are, in the first place, much too heavy, besides too wide and too large to render their use possible under the stringent conditions laid down in the Light Locomotives Act and the Local Government Board's regulations. In the next place, the complications of their mechanical details are much too severe to pass muster in England. Those constructors in England interested in steam vehicles for heavy loads complain, and we think with justice, of the stringency of the British regulations; but there is no doubt in our mind that it is this very stringency that has acted as a spur in necessitating the overcoming of those difficulties to which these regulations give rise. The narrowness of width laid down in the regulations and the weight restrictions have caused British ingenuity to be exercised most profitably, with the result that to-day the engineers of England are producing steam vehicles for heavy loads which owe no part of their design, equipment, or method of construction to foreign inventors, and which are, moreover, capable of competing successfully and commercially against the steam vehicles produced in any other country.

While suggesting that in some measure the success of English-built heavy steam-vehicles is due to the onerous conditions imposed, we do not wish it to be for a moment imagined that we are against the proposal to increase the tare-weight limit. On the other hand, we think the time has now come when the Local Government Board should have no hesitation in meeting the demands of builders of this type of vehicle, which at Liverpool in July and August last were submitted to almost every conceivable test. During the year considerable improvements have been effected in the heavy steam-wagons already on the market twelve months ago, notably in the Thornycroft wagon, which

took the gold medal in the trials at Liverpool. New steam-wagons have also been brought out by Messrs. Simpson and Bodman, Messrs. Bayleys, Limited, Messrs. Toward and Co., the Clarkson and Capel Steam Car Syndicate, the Verity Motor Company, Messrs. Musker, and Messrs. Beach. In passenger cars Mr. C. T. Crowden has introduced a steam-wagonette, but so far there is no light steam-car available, of English construction, of the type now being turned out by several firms in America, although we hear of several experimental vehicles being in course of construction in different parts of the country.

As regards electrically-propelled cars much progress has been made, although the accumulators will continue to be the *bête noire*. The Headland's Company and Messrs. McKenzie have brought out some neat types of cars; Mr. C. Oppermann, too, has introduced a new frame and method of gearing, and when we last had a chat with him had something new on the stocks in the way of accumulators. Several new cars, in which electricity supplies the motive power, have also been brought to the notice of the automobile world, among which are the Joel, the Clift, the cars of the Electric Motive Power Company, Limited, and those of the Electrical Undertakings, Limited. The last-named concern is sparing neither money nor time in its efforts to produce the ideal electrical vehicle, and the success achieved has been well shown by the runs its cars have made from London to Brighton on one charge of the batteries. As mentioned above, it is the accumulator question which has still to be solved, and although much has been done, much remains to be accomplished ere electrical cars can become as popular as the builders of such vehicles would like to see them.

The advance in automobile road locomotion in England has been due not only to the competitive trials and pleasure tours mentioned in a previous part of this article, but also to the public exhibition of vehicles in an organised manner. The many small exhibitions in connection with cycle shows held both on the Continent and in this country were completely dominated by the magnificent show organised by the Automobile Club de France, and held in Paris in June last. This was undoubtedly the largest, most complete, and best organised exhibition of motor-vehicles ever held, and it naturally attracted not only the automobilists of the European Continent, but also English constructors and others interested in the new industry in Great Britain. The exhibitions of motor-vehicles held at Richmond in June and at the Agricultural Hall, Islington, in July last, too, contributed in no mean degree to the further education of those interested in the automobile movement in Great Britain. The latter was the largest and most complete show yet held in this country, and a large number of French and German vehicles and appliances not previously seen in England were exhibited for the first time. It was this exhibition, perhaps, which most forcibly brought home the fact to English constructors that there was a demand for a light two-seated motor-vehicle, and that if they did not lay themselves out to market such a car their place would be taken by the Continental cheap, light, and gracefully-designed vehicles. Several makers have taken the lesson to heart, and we know that some extremely graceful cars at a low price are now on the stocks, and will be ready for the spring trade. The forthcoming exhibition in April next at the Agricultural Hall promises to be even more successful and instructive. Over seventy firms have already given their adhesion. The running or demonstrating track, 320ft. long and 100ft. wide, which was one of the features of last year's show, will again be one of the attractions.

(To be continued.)

THE Motor-Car Club will, we learn, hold a hill-climbing competition in the Spring, open to all classes of motor-vehicles. Such an event if held at a convenient time and place should attract a good entry.

THE Edinburgh Autocar Co. have received delivery of the first of their twelve new cars ordered from the Daimler Motor Company. It is of the wagonette type, arranged to carry ten passengers and the driver, and is adapted to take Mr. Outhwaite's patent cover in wet weather.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

**Belgian Exhibition.**

PRINCE ALBERT of Belgium has accepted the presidency of honour of the Salon du Cycle et de l'Automobile, which, as previously announced, will be held at Brussels from March 31st to April 8th.

The Salon will be under the patronage of the King of Belgium, and one of the presidents will be Comte der Straten-Ponthoz, the president of the "A.C.B."

**Dieppe's Proposed Club.**

ON the initiative of the Comte Sainte-Marie d'Agneaux strong efforts are being made at Dieppe to form a local automobile club. There exists in the neighbourhood a considerable number of *chauffeurs*, many of whom have already intimated their desire to join the proposed association. Preliminary meetings have been held, and very soon Dieppe will be added to that ever-increasing list of provincial towns possessing an automobile club.

**The Belgian Team for the Bennett Cup.**

LESS arbitrary than the "A.C.F.," the Committee of the Belgian Automobile Club has now, according to *La Belgique Automobile*, decided to make the final selection of its team for the Gordon Bennett Challenge Cup upon the result of a preliminary contest. The Paris-Bordeaux event has been selected as the trial race, and accordingly those Belgian *chauffeurs* best placed in this *course* will be qualified to represent their mother country in the cup contest. As previously stated in these columns, the competing clubs will be those of France, the United States, Germany, Belgium, and Italy.

**Motor-Bicycle Records.**

ON Saturday afternoon last, at the Parc des Princes, Paris, M. A. Fossier made a successful attack upon the motor-bicycle records, beating the existing figures for all distances from ten to twenty-one kilometres. Riding a machine belonging to Léonce Girardot, he failed to achieve record times until the tenth kilometre was reached, but from that point until the twenty-first kilometre, when he was compelled to retire in consequence of a punctured tire, he travelled exceptionally fast. His times were:—10 kilometres, 8mins. 40secs.; 11, 9mins. 29secs.; 12, 10mins. 18½secs.; 13, 11mins. 7½secs.; 14, 11mins. 52½secs.; 15, 12mins. 16½secs.; 16, 13mins. 37½secs.; 17, 14mins. 30secs.; 18, 15mins. 21½secs.; 19, 16mins. 11½secs.; 20, 17mins. 1½secs.; 21, 17mins. 53½secs. This gives an average speed of seventy-one kilometres per hour.

**Speed Limits Again.**

IN many of the continental towns the lenient attitude adopted by the authorities towards automobilism in the matter of speed has been outrageously abused by that class of *chauffeurs* whose sole delight is fast driving and who indulge in it regardless of consequences. One town after another is now finding it necessary to take stringent measures to curb the recklessness of these individuals, and in doing so they are compelled to punish the innocent with the guilty and make the whole automobile community to suffer. There is, however, a limit to the stringency of the regulations controlling the circulation of automobiles, and if the report from Mannheim be true, the authorities of that town have carried the severity of their regulations to the extent of absurdity. To set the maximum speed at which a motor-vehicle may legitimately travel at six kilometres per hour in the town and twelve in the country is reducing the automobile to about the bath-chair level, and it seems almost incredible that the authorities of a town like Mannheim, which fosters in its midst

one of the largest German automobile firms, should have issued so ridiculous a rule. It is hardly likely that the local *chauffeurs* and those interested in the industry will accept this ruling without lodging a protest against its injustice.

**A German Motor Parcels Delivery Car.**

A NOVEL motor parcels delivery car, suitable for the requirements of the Post Office for the parcels post work, has lately been constructed by the Gesellschaft für Automobil-Wagenbau (System Loutzky), 49, Franzosischestr., Berlin, W., of which a general view is given in Fig. 1. The frame of the vehicle is of tubular construction. Provision is also made at the rear for two persons, while the parcels chest in front has a capacity of  $\frac{3}{4}$  cubic metre. The chest is provided with double outwardly-opening doors on one side; there is a shelf

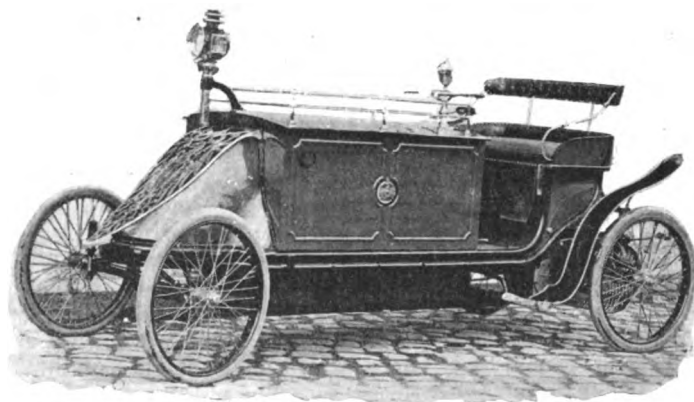
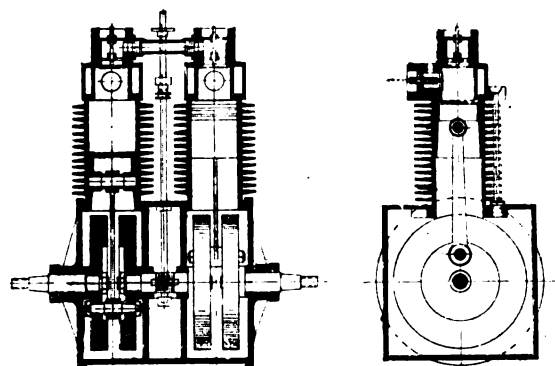


FIG. 1.—GENERAL VIEW.

inside, while the top is provided with railings. The motor (Figs. 2 and 3) is of the vertical two-cylinder type, it is fitted with electrical ignition, and is capable of indicating 5 h.p. For cooling purposes, radial discs are provided to the cylinder; while the explosion chamber is water-jacketed. The speed of the motor ranges from 1,500 to 1,800 revolutions per minute. The engine is geared direct to the rear axle, by means of a two-speed gear, a friction clutch being also provided, which permits the motor to be instantly thrown out of gear, when necessary. The petrol tank, which is located under the riders' seat, has a capacity of thirty litres, while the water tank is located in the forepart of the vehicle. The water circulation is maintained by a small pump, a cooling coil being also provided. The motor is arranged to be started from the driver's seat, while the steering is controlled by



FIGS. 2 AND 3.—SECTIONAL ELEVATIONS OF MOTOR.

a hand wheel acting on the front wheels. Ample brake power is provided, there being two band brakes on the rear axle controlled by a foot pedal, as also tire brakes. The wheels are of the cycle type, shod with pneumatic tires. The vehicle, which measures 11ft. long by 4ft. wide, weighs about 7cwt. and is able to carry a similar load. The maximum speed is twenty-five kilometres per hour. The German postal authorities are reported to be giving the Loutzky vehicle a trial in connection with the delivery of parcels.

### The Nice Week.

THE entries for the various events, which will take place during the automobile fête, to be celebrated at Nice in March next, have already begun to arrive, and include the names of many well-known racing men. In the speed section I find that the following *chauffeurs* have signified their intention of competing:—MM. Paul Chauchard, Et. Giraud, Charron, Girardot, Albert Lemaitre, Mercedes, de Turckheim, Mouter, Lubecki, Pascal, René de Knyff, Gilles Hourgières, Degrais, and Levegh. The tourists are so far represented by MM. Léon Desjoyaux, Paul Chauchard, Gondouin, Stead and Valton, while MM. Lubecki and Desjoyaux have also entered cars in the category reserved for vehicles weighing more than 1,000 kilos. With such representative entries keen racing may be anticipated. Automobilists desirous of competing should forward their names to the Automobile Club of France, the Automobile Club of Nice, or *La France Automobile*, 68 Avenue de la Grande Armée, Paris. At Cannes the authorities propose to organise an automobile fête for February 21st. Races for different classes of vehicles will take place on the Promenade de la Croisette.

### A Comparison of Accidents.

THE most recently published list of horse and automobile accidents in no way differs from its predecessors in emphasising the great increase of safety secured by the employment of the motor-vehicle. *Le Vélo*, to whose energy these monthly statistical tables are due, has also issued a complete summary of the accidents caused by the horse during 1899 and a list of those occasioned by the motor-car since the opening of the record in July last. To the students of these two rival methods of locomotion the figures presented will afford instructive reading. Dealing with the last month of 1899 we find that the horse's eccentricities have resulted in 708 accidents, 656 persons receiving injuries and 52 being killed outright. Against this record only 21 accidents can be charged to the account of the automobile, and these gave rise to but one death. The figures as compiled during the past year are as follows:

|           | Horse Accidents. |          | Automobile Accidents. |          |
|-----------|------------------|----------|-----------------------|----------|
|           | Deaths.          | Injured. | Deaths.               | Injured. |
| January   | 25               | 332      |                       |          |
| February  | 20               | 323      |                       |          |
| March     | 32               | 385      |                       |          |
| April     | 27               | 340      |                       |          |
| May       | 35               | 421      |                       |          |
| June      | 52               | 567      |                       |          |
|           | 191              | 2,368    |                       |          |
| July      | 78               | 770      | 5                     | 27       |
| August    | 52               | 620      | 1                     | 26       |
| September | 67               | 745      | 1                     | 33       |
| October   | 92               | 814      | 0                     | 23       |
| November  | 96               | 783      | 1                     | 35       |
| December  | 52               | 656      | 1                     | 20       |
| Total     | 628              | 6,756    | 9                     | 164      |

The comparison during the last six months of the year gives, therefore, a record of 437 deaths and 4,388 injured by the horse, as against 9 killed and 164 wounded by the automobile. As already announced in these columns *Le Vélo* will, from the 1st of the current month, keep in addition a record of bicycle accidents.

### Motor-Car Spirit Depots in Holland.

*L'Automobile Belge* publishes a list of dépôts in Holland where motor-car spirit may be obtained. As it may be useful to some English motorists I reproduce the list below:—Messrs. de Haas, Arnhem; M. L. A. de Waal, The Hague; M. Payens, Eindhoven; M. Cox Geelen, Ruremonde; M. P. J. Jansen, Bois-le-Duc; M. J. L. Otto, Dordrecht; M. Hostinck, Utrecht; M. Vander Crab, Middelbourg; M. Van Dorp, Leyden;

M. H. B. Goettsch, Arnhem; M. T. de Witt, Hilversum; M. T. P. Van. den Berg, Utrecht; M. Max du Moulin, Maestricht; and M. H. J. Gorter, Zwolle.

### A New Club in Paris.

It is announced that a number of amateur sportsmen and owners of horseless carriages, desirous of keeping apart from all commercial or industrial questions and only devoting themselves to sport and to touring, have decided to found a new club, which will be called the Rallie-Auto. The statutes of the new club are already drawn up, and admission to it will be very difficult. There will be a clubhouse in Paris and one in the country, the latter on the banks of the Seine at Meulan, near the Cercle de la Voile. The Rallie-Auto will make its first demonstration on the occasion of the race known as the Course du Catalogue, which is being organised by *La France Automobile* for February 18th next.

### Motor-Car Construction in Belgium.

LA SOCIÉTÉ DES ATELIERS VIVINUS, 244, Rue de Progrès, Brussels, whose motor-voiturette was illustrated in the *Motor-Car Journal* for June 16th last, lately celebrated the completion of the 100th car of this type. According to *L'Automobile Belge* the company has received an order from England for 200 Vivinus cars, and in order to cope with the demand the works are to be enlarged.

THE *Hore Gazette* is the latest newspaper to start a column of "Motor Notes."

MR. ANTONY G. NEW contributes an article on "Oil Engines and Motor-Cars," to the last issue of the *Engineer*.

IT is stated that a company is making arrangements for placing motor-cars on the streets of the principal towns in New Zealand.

HERR GOTTLIEB DAIMLER, has received the title Kommerzienrath, the German for Privy Councillor. The honour was conferred on him by the King of Wurtemberg.

ACCORDING to a report of the Austro-Hungarian Consul at Madrid to his Government, there is an opening for the sale of motor-cars in Spain. There is, says the Consul, not only a good sale of suitable cars to private customers, but there is also a fair scope for the introduction of motor-car passenger and goods services between many places in the various provinces of Spain.

NOW that motor-cars are being so extensively used in the United Kingdom, the number of firms giving special attention to the sale and supply of platinum ignition tubes is steadily increasing. Among the number is Messrs. Derby and Co., platinum merchants, of 44, Clerkenwell Road, E.C., who are now, we learn, in a position to supply all makes of tubes to suit each kind of car.

THE committee of the Automobile Club is shortly to take into consideration the appointment by the club of hotels at which (1) motor-car spirit is sold at a suitable price; (2) a hose is kept suitable for filling motor water-tanks; and (3) at which no charge or a moderate charge is made for the storage of a motor-vehicle, the owner of which makes use of the hotel. Members are invited to communicate to the secretary of the club the names of hotels which they can recommend.

THE employees of the Edinburgh Autocar Company last week organised a New Year supper, to which they invited the directors. Mr. John McDonald, chairman, presided, and was supported by Mr. Norman D. McDonald and Mr. Edwin Adam. The latter gentleman briefly referred to the friendly and co-operative relationships existing between the men, Mr. Outhwaite, the manager, and themselves. He made some very useful remarks regarding the responsibility of drivers, and urged upon his audience their duty to the public. As a mark of their esteem, Mr. John McDonald, on behalf of the employees, presented Mr. T. Roland Outhwaite, the manager, with three handsome useful solid silver articles, suitably engraved, which were duly acknowledged.

# Electricity on Common Roads.

By THOS. H. PARKER.



THERE was a good attendance of members at the monthly dinner and discussion of the Automobile Club at 4, Whitehall Court, S.W., on Wednesday, when Sir Edgar Vincent, K.C.M.G., presided. A paper was read by Mr. Thomas H. Parker, of Wolverhampton, which was illustrated by fifty-one lantern slides. These were introduced during the reading of the paper, and at its conclusion were again shown, so that those present might elucidate further information from Mr. Parker. Below we give the paper:—

Having been called upon by the Committee to contribute a paper for the benefit of the members of this Club, and being a member having its interest and that of the movement at heart, I will endeavour to give a short sketch of the history of electricity on common roads in this country, together with some personal experience, and invite discussion and correction on the history of the past, which in the whirl of the present enthusiasm has been overlooked and forgotten. In the year 1882 my father, Mr. Thomas Parker, exhibited on the lecture table at the Coalbrookdale Institute, Siemens and Edison incandescent lamps, supplied with current from accumulators of his own make and design, and in the same year he discovered that the action of nitric acid facilitated the formation of accumulator plates, and took out a patent in which the novelty of the chemical agent was claimed. A singular coincidence occurred with regard to this patent. Two specifications reached the Patent Office claiming this novelty about the same time, one from M. Gaston Planté, of Paris, the other from Mr. Parker. The Solicitor-General met the case by dividing the patent between them. It was about this time that a partnership was arranged between the late Mr. Paul Bedford Elwell, of Wolverhampton, and Mr. Parker, the latter going to Wolverhampton, and this partnership created the business known as Elwell-Parker, Limited. Arrangements were made with M. Planté, and the manufacture of accumulators and general electrical work was commenced on a large scale. Soon after Faure and Sellon discovered the paste battery, which soon superseded the Planté-Parker cell. Elwell-Parker, Limited, took up the manufacture of the new accumulator, afterwards transferring it to the Electric Power Storage Company, since which time very little alteration has been made in the material used in accumulators, although during the past three years many successful attempts have been made to reduce the weight and increase the output. In the year 1884, soon after the advent of these new batteries, Mr. Elwell designed and built an electric carriage, the general design of which was similar to the four-wheeled hansom cabs to be seen about the London streets, except that the driver's seat was inside the vehicle instead of behind. It had single bogie steering gear, manipulated from the driver's seat by means of a long lever connected to the bogie by links and rods, the springs were elliptic, the wheels of wood, with steel tires, the brake of the ordinary carriage type applied by a foot lever, and there was an auxiliary hand brake on the back axle. This axle was similar to those commonly used on tricycles, having a differential gear in the centre enclosed in a metal case. A small series-wound motor, with diamond-shaped magnets and having a normal speed of 1,500 revolutions per minute, delivered its power direct to the periphery of the gear case by means of, at that time, a novel form of worm gear and flexible coupling. The worm was an ordinary coarse pitch thread, the wheel being formed of a number of studs screwed and riveted into the periphery of the gear case, and upon

each stud was a small roller shaped to fit the groove and pitch of the worm. The flexible joint allowed for any movement between the motor, which was fixed to the body, and the gear on the axle. The batteries were of the paste type, being twenty-four in number and weighing about 6cwt.; they were stowed neatly away in the back of the body of the car. The several speeds of the car were obtained by arranging the batteries in parallel and series and with resistances; the backward movement had a separate reversing switch. A trial was made under the Light Locomotives Act then in force, the maximum speed attained being five miles per hour. All went well until the steep grade of Queen Square was reached, when some of the sheds in the worm wheel sheared and the car came to a standstill. The gear was, however, removed, and the car reached its destination—the coach-painter's—by gravitation. It was afterwards repaired and taken to Mr. Elwell's private house at Albrighton, and from there it went to London. Later, it was shipped for Paris, but about halfway across the Channel the vessel foundered. Some time after the boat was raised, and the motor and gear came back to Wolverhampton to be used for other purposes. Thus ended the career of what I believe to be the first British electric motor-car. Not long after this Mr. Ward commenced his work on omnibuses, and placed an order for a vehicle of his design with the Electric Construction Corporation (late Elwell-Parker, Limited) in 1890. This 'bus—the first built in Wolverhampton—had a very respectable appearance, but, like most of Mr. Ward's work, was very heavy. In fact, it was said to weigh, when loaded, over eight tons. After a series of trials in London, the London Electric Omnibus Company was formed in 1896, with Mr. Ward as chief engineer, and a great deal of money was spent in trying to gain success. Although this was not achieved, Mr. Ward must be credited with having built the first and second electric

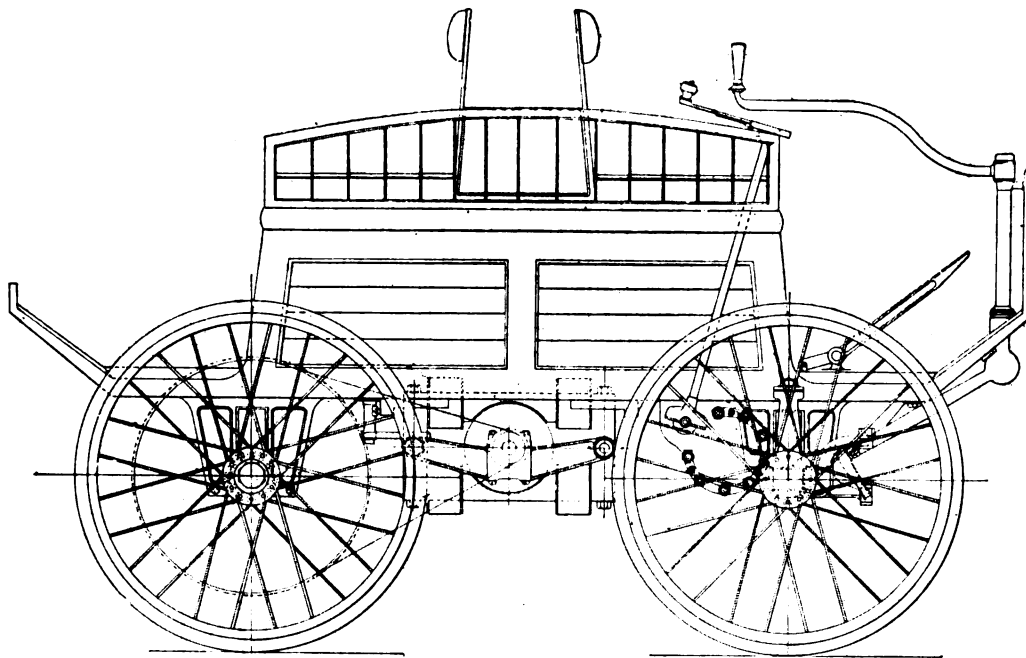


FIG. 1.—ELEVATION OF REAR-DRIVEN ELECTRIC DOG-CART.

omnibuses that were licensed by the police authorities for passenger traffic in London. The passing of the Locomotives on Highways Act in 1896 brought a number of names to the front, chief among them being Mr. Bersey, who must be credited with the design of the first electric cab to obtain a licence. Pope, Headland, Riker, Elieson, Britannia, and Oppermann, are familiar names in the electrical field. At this date I was occupied erecting electrical and general machinery in the Transvaal, where electric motors—with few exceptions shunt-wound—were used for nearly all auxiliary purposes above and below ground. Many of our troubles with the electric plants were caused by the controllers sent out with these motors. After giving considerable thought to the problem, I succeeded in devising a means of preventing the main circuit being closed before the shunt, and of breaking it with all resistance in circuit before the shunt, each movement being locked, only one handle being required, as against two or three in other designs. I sent the designs to Wolverhampton for use in the factory. On hearing that the Bill to allow motor-cars to run on the streets of England had been sanctioned by Parliament, and feeling sure that the controller could readily be adapted for controlling electric-cars, I set sail for England to make a start in the new industry. Immediately after my arrival, I began to work on the design of an electric car. The section of road over which it was obvious the car would have to run lay between my father's house at Tettenhall and the town of Wolverhampton, a distance of two and a-half miles without a single yard of level ground in its length, the gradients varying from 1-120 to 1-15. To get some idea of the power required on a vehicle to carry nine persons was the first difficulty, but the family brougham with horse and a spring balance supplied this information. Having determined the approximate power required for speeds up to eight miles per hour, and the weight of batteries

to supply such power for three hours, the next problem was the design of the motor and gearing. Many suggestions were put on paper, the final one being two motors geared to the hind wheels through double reduction gear, the second reduction being Renold's chains; wear on the chains was taken up by eccentrics. These first motors were series-wound and designed to run at 950 revs. per minute and give a torque effort of 30 lbs. on the periphery of each armature with 25 amperes. Forty was the number of cells chosen, to permit of their being charged in series on the usual 110-volt circuits. The controlling of the car came next. To obtain the necessary changes of speed without the use of resistances was a difficult problem at one time, but now is simple enough to all of us. Three speeds forward and one backward were found to meet all requirements, and these variations were obtained by dividing the forty cells into two groups of twenty each. The three forward movements were as follows: the first, putting batteries in parallel and motors in series, gave two miles per hour; the second, batteries in series and motors in series, four miles per hour; the third, batteries in series, motors in parallel, eight miles per hour. The one backward movement, batteries in parallel, motors in series, with current in the armature reversed, two miles per hour. The next problem, and perhaps the most difficult, was the steering. Sketches were made of the Ackermann, double cycle-head, single wheel, and single bogie systems, but none of these satisfied my desires. I wanted a steering gear that would admit of a car running round a small circle with as little resistance as going straight ahead, and, after a great deal of scheming, conceived the idea of moving the front and back axles in opposite directions at the same time and through the same angle, which both in model and practical form worked splendidly (Fig. 3). It permits a car to be turned in its own length without turning the

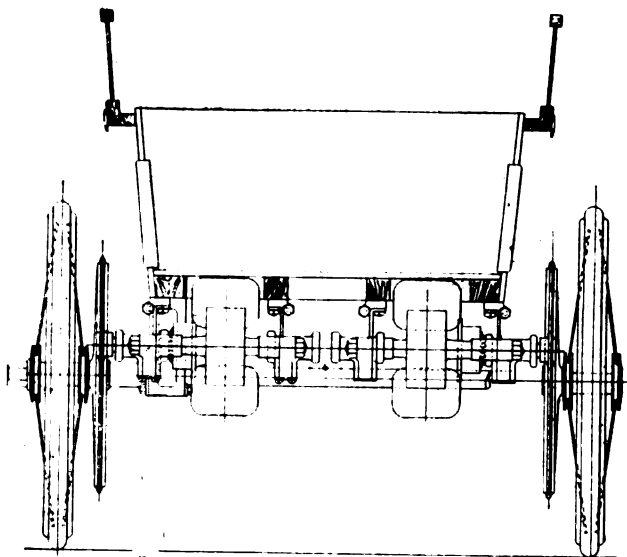


FIG. 2.—PLAN OF REAR-DRIVEN ELECTRIC DOG-CART.

wheels under the body, and is naturally twice as sensitive as a single bogie or broken-axle gear. Another great advantage is that it admits of either front or back, or all four wheels being driven, also the weight being distributed equally on all wheels, it gives a good support to the bottom of the vehicle, which can be made quite flat. A brake can be used on each of the four wheels.

Early in 1897 the Blot accumulator came to the front, and so good were the results of the tests made on some sample cells that it was decided to use them on the car. A small shop was rented, so small indeed that the car could not be moved in it. The subsequent trial was very successful; with nine persons on board we ran a ten-mile trip without a hitch. In descending some of the steep grades I found the powerful combined band of block brakes was not sufficient to check the car, and decided to dispense with series wound motors. Immediately after the trial I dismantled the motors, and had them shunt wound. The amount of chaff and ridicule I had to stand was very considerable, for such a thing as running shunt motors in conjunction with storage batteries on tramways had years before been given up as impracticable. The motors, however, were rehung, the connections made, and the car run down into the street. The result was very marked, for instead of the sudden rush of current, as at starting with the series winding, viz., 50 amperes, the car moved steadily away with less than 10 amperes, although the current was about the same when the rate of travelling accelerated as with the series winding. We then proceeded to take some tests on an incline, by running the double journey to Tottenhall and back, and so much was the work of manipulation reduced by this means that it was only necessary to set the controller for the required speed and look out for obstacles. On descending the steepest grade, the speed did not increase more than 5 per cent. and it was very gratifying to see the ampere-meter reading at twenty amperes to the good, instead of one's knowing that the brake

blocks were being worn away. It was also found that, in case of need, it was possible to bring the car to a stand on a 10 per cent. grade from full speed ahead in 3 ft., without reversing the motors or using the brakes, which was an impossibility with the series motors. The difficulty of keeping a constant voltage across the field magnets of the motors, while varying the voltage across the armatures by grouping the batteries and armatures in series or parallel, was overcome in the following manner. The field magnets of each motor were wound to give saturation with 40 volts, the cells, forty in number, were divided into two sections, each giving 40 volts, and were separately connected across the field magnets, which arrangement left the batteries and armatures free to be grouped as desired. This original car ran daily for two years without a hitch or breakdown. Owing to illness and completion of engagements my connection with motor manufacture has been partially severed for the past three months. The original controller described in the first part of the paper, for use on ordinary high tension circuits, comprises two rollers or discs fixed to the centre spindle, actuating two levers connected to the two switches top and bottom. In starting from zero the one disc which is slightly in advance of the other first puts on the shunt switch and locks it on, leaving the handle free to turn a full revolution in the same direction; the next portion of the revolution puts on the main switch and locks it on, allowing the main current to flow through the armature with resistance in the circuit. This resistance is determined by the switch arm, carried on the central spindle below the discs working on an ordinary divided resistance ring, and in this case admits of twenty-four points of regulation in a single turn of the handle, when stopping the motor. It follows that the maximum resistance must be put into the circuit ready for starting again before breaking the main circuit. Again the main circuit must be broken before it is possible to break the shunt, thereby avoiding all danger of burning the armature, which would be the case if the shunt were broken first. Further, if the motor has to be stopped and started often, the shunts can be left on, by which arrangement no damage is done to the insulation by the high voltage due to induction on breaking shunt circuits. In the design for double-bogie steering the bogies were coupled to a nut running on a screw in the centre of the car set parallel to the axles: the screw was coupled on the steering wheel, and had a ratio of 15-1.

The complete car to seat nine passengers weighed unloaded 30 cwt., and would run twenty-five miles at eight miles per hour with one charge, the mean discharge on the level at this speed being 26 amperes at 80 volts. When fully loaded it would mount any of the very steep gradients in the district of Wolverhampton. The Blot battery used on this car has a capacity of 110 ampere hours at a discharge of 25 amperes. The cell is a modification of the Planté, the plate being made up in bobbins of corrugated and plain pure lead tape, each bobbin being cut into two parts and suspended to the frame, the loose ends being allowed to go free for expansion and contraction, which entirely avoided buckling. The enormous area gained in this method of construction gave it a great advantage over other batteries at that time, having regard to weight for output. It stood the wear and tear of the road very well for three months; then the ribbons commenced to crumble and fall, short-circuiting the cells internally. These were removed to give the paste batteries of various makers a trial; some stood for three months, some for four months. The results were very disheartening and costly. I determined to build a lighter car, to carry four persons. This had two motors fixed to the body driving direct with single reduction gear by chains and was steered with Ackermann gear; it weighed 23 cwt., unloaded, of which 11 cwt. were batteries. The average discharge current on the level was 18 amperes at 80 volts, speed 9 miles per hour; in this respect the results were better than with No. 1 car, but its climbing capacity was not so good, although it would with labour mount the same gradients. These motors developed two h.p. each at 560 revolutions per minute, and weighed 2½ cwt. each (Figs. 1 and 2). A car of similar dimensions was also built with double-bogie steering, and driven by a single motor through double reduction gear on to the front wheels, with differential gear to allow for turning; this car ran very well, but the cut gear was much too noisy.

The London Electric Omnibus Company asked me to design and build them an electric omnibus; I came to London to see Mr. Ward's bus run. It was apparent that their chief difficulty was in the enormous weight—this when loaded being about 7½ tons. The experimental bus, designed and built by me at Wolverhampton, was constructed on the double bogie principle. It has two motors, one on each bogie, driving all four wheels through differential gears. The batteries were in four boxes under the seats. It has three speeds forward and one backward, two handles to manipulate the whole of its movements, and it would turn in its own length. There was a powerful hydraulic brake on each of the wheels supplied by a force pump close to the driver's seat. Its weight when loaded with sixteen persons was 3 tons 10 cwt., and 2 tons 8 cwt. empty. The mean discharge current on the level at eight miles per hour was 30 amperes at 80 volts. It would climb any gradient in the district either forward or backward when fully loaded, and, like No. 1 car, it would descend any hill at a given speed, and could be brought to a stand from full speed in 3 ft., without the brakes. The battery capacity was sufficient for a run of 25 miles with one charge.

Many samples of batteries were shown during the time I had spent on the foregoing experiments, but none were better than the Blot. Hope and money were slowly vanishing. Relief came one morning in the shape of two sample batteries from the Crowds Company, with a request to test their weight and capacity against any others we had. This was quickly done: they proved to be equal to the Blot in capacity, but the weight was only half that of the Blot, with a great saving in



bulk. To give these new batteries a fair trial needed a radical change in the construction of the small four-seated car. A much lighter body was built on to a light rectangular ash frame, and an aluminium plate was cast and fitted into the ash frame forming the bottom of the car. To this was fixed a single shunt-wound motor, a differential gear running in spherical bearings, and all necessary gear for brakes, etc. Renold chains were used on both gear reductions, the motor in this case running at 1,200 revolutions per minute. The stretch of the chain was taken up by sliding the gear-bearing brackets; spiral springs and Ackerman steering gear were used. The car complete weighed  $13\frac{1}{2}$  cwt., of which  $5\frac{1}{2}$  cwt. were batteries. The discharge current on the level at 10 miles per hour was 13 amperes at 80 volts. The vehicle would climb any practical gradient, and would run 40 miles on one charge without distressing the batteries. This car was exhibited at the Conference of the Civil Engineers in June last.

One of the difficulties with the No. 1 car was to obtain a set of wheels that would stand the strain of the rough roads, and the starting and stopping of the motors. I tried various kinds made of steel tubes, and also a set made up on the cycle principle with headed and bent spokes, but neither of these kinds would run for more than a week without becoming dangerous. The difficulties led up to the designing of a wheel. In constructing it a hub of the usual kind is made, having an extra flange on each side. Holes are pierced at equal distances in these flanges according to the number of spokes required in the wheel. The spokes instead of being constructed with a head and bend, and threaded separately through the hub flange, are in this case made in such a way that two are formed by each wire. The wire or rod is placed in a small machine, set at such a gauge as the length of the spoke demands, and by simply

by the oil supply and firing point, every part possible was balanced, and having mechanically-operated valves and heavy flywheel, the speed could be varied considerably. It carried upon the crank shaft a novel form of gear, giving two speeds ahead and one astern with the movement of one handle. This gear was connected to the differential shaft by Renold chain, and was quite silent in action. The chief novelty of this gear, and the reason for its silent action, was due to its flexibility. It was originally designed for cut gear, and, the casting made, having no machinery for cutting internal gear, quotations were asked for, but the price and time were out of the question, so that I was at a loss to know what to do. On leaving the office one day, and walking up the shop to examine an electric car that was being taken to pieces, my attention was drawn to one of the Renold chains that had been taken off and thrown down: it lay in a circle, with the pinion engaged in the teeth. The difficulty of cutting internal gear was that moment solved. Instead of cutting the teeth the casting was recessed, leaving a flange. A piece of Renold chain with rivets removed was placed into the recess, and the rivets passed through the flange chain and web and clenched. To form the driving pinion the chain was turned in the reverse direction over a flanged drum. In its complete position in the centre is the gear wheel, which is connected by a chain to the differential gear. On one side is a drum with a band brake upon it, and a friction clutch; on the other side a drum with a band brake. These brakes were manipulated by cones passing under levers, and the clutch with a lever and spring. When the car was at rest these drums revolved freely in opposite directions. On arresting either one or the other, the car would move slowly backwards or forwards, the gear being 15 to 1. On releasing the band and throwing in the

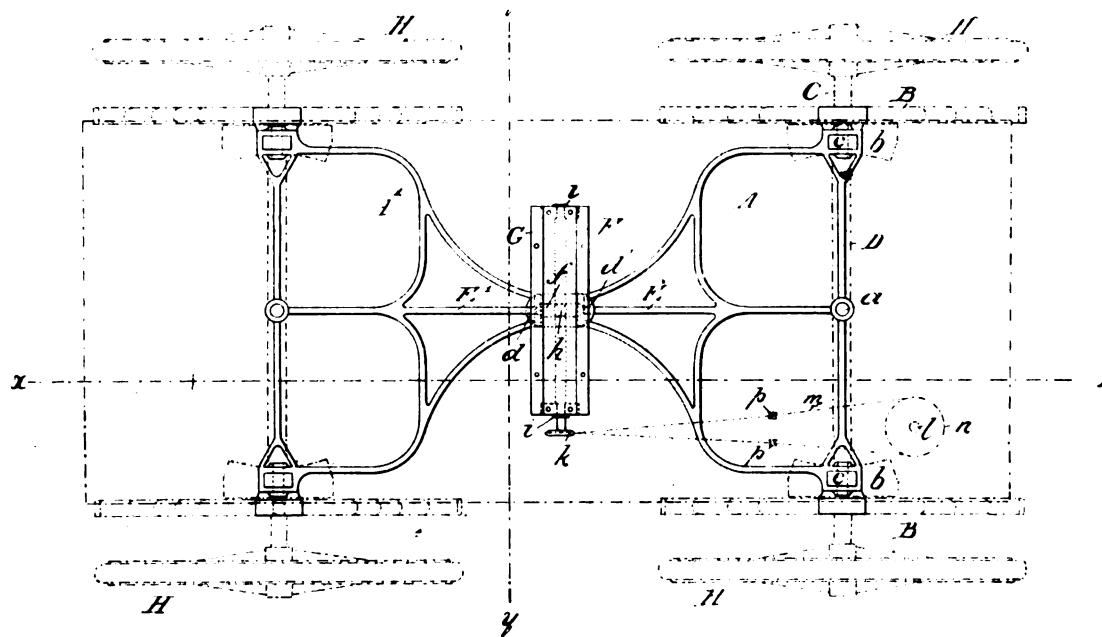


FIG. 3.—MR. T. H. PARKER'S FOUR-WHEEL STEERING SYSTEM.

turning one lever the wire or rod is bent at right angles, the bend forming a loop or eye. The eyes of these bent rods or twin spokes are inserted between the double flanges at each end of the hub, and a pin equal or nearly equal in diameter to the size of the hole in the flanges is thrust through the holes and through the eye. These pins have a slightly recessed groove in the centre of their length in which the bent eye of the twin spokes rest, and as tension is applied by means of the nipple, coupling it to the rim, the pins are held firmly, rigidly in position in the hub flanges without the necessity of bolting or riveting. No reasonable twisting strain can wrench these spokes from the hub flanges, and under test the wheel conforms to the behaviour of a solid disc of metal. It has the strength and springiness of steel in its lightest form, and is a suspension wheel of which an ordinary tangent spoked wheel is only a modification. The construction of these wheels admits of the casting in one piece of the hubs and sprocket wheels. There is no practical limit to the weight these can be constructed to carry.

Although the title of this paper confines the subject matter to electricity, the following remarks dealing with steam and oil experiments may be of interest. Some time ago I constructed an experimental oil car designed to carry four passengers. It had a single cylinder engine. The whole of the mechanical work was fixed to a steel plate fitted into a light ash frame. The sides of the body were hinged to this frame and could be removed at will to examine the whole of the mechanism. One of the chief features in the design of the engine was the arrangement of valves and levers, which are all on the cylinder cover. All valves were moved mechanically by cams on the half speed shaft, which was coupled to the crank shaft by helical gear. The cylinder water jacket, crank chamber, and crank shaft bearings were in one casting. This engine developed 6 h.p. at 600 revolutions per minute, its speed was regulated

whole of the clutch the gear turned in one direction, the ratio then being 5 to 1. It will be seen that with this arrangement it was impossible to put the car to full speed ahead without first using the slow speed, and it was also impossible to reverse the car from full speed without first steadying the car with the slow ahead gear. Throughout the whole of the experiments with this car no brakes other than those afforded by this gear were used, and to demonstrate this advantage a gradient of 1 in 6 was erected in the works, upon which the car was just as easily manipulated as upon the level, starting, stopping, going forward and backward at the will of the driver and without the aid of a brake.

#### THE DISCUSSION.

Discussion having been invited, Mr. C. Oppermann said the club was very much indebted to Mr. Parker for his interesting paper. There were very few practical men who cared to face the running fire of criticism and to show all the various trials and tests which have to be gone through before anything like perfection could be obtained. There were, however, one or two points which, he thought, might require some further elucidation. Regarding bogie steering, he was inclined to think it was a bogey in more ways than one. The sliding motion was due to the want of a thorough conception of the principles of the Ackermann steering gear. He had used this for some time and had never experienced any such slipping as had been mentioned. Regarding the batteries, the Blot accumulator seemed to be first cousin to an arrangement brought out many years

ago. It was practically the same, except that in the case of the Blot accumulator the elements resembled a skein more than a plate. Regarding chains, he thought if the Renold chains were used to any extent the experience would coincide with the unfortunate experience of the London Cab Company. The experience there was that after a very short period of wear the chains elongated considerably, owing to the small bearing surface of the links on the rivets, and got out of pitch and slipped round the large driving wheels. A properly-constructed spur gearing would meet the requirements of electric driving in a much better manner. Mr. Parker had some difficulty in regard to the noise of spur gear. Regarding the ingenious internal gear, he said the pitch and shape of the teeth in a gear of that description was not of much moment. Whether the gear was large or small made no difference—the shape of the teeth was important. He (the speaker) used a raw hide gear meshing into cast iron or bronze gear wheels, and it was a *sine qua non* that the teeth should be mathematically correct. Another very interesting invention referred to by Mr. Parker was the wheel with one continuous spoke in the form of V's; but he was altogether wrong in saying that an ordinary tangent wheel would not last seven days. He had had some in use for several years, and providing the heads of the spokes were annealed before being put into the wheel it would do all that could be expected of it. The internal gear in which the Renold chain had been put was an easy way of getting over the difficulty, but there was a still easier one. The rivet holes should have been drilled a little larger, and the rivets put through them. Five years ago he had shown Mr. Parker a similar wheel where he had drilled a number of holes round two iron discs and put a number of steel pins in them. He had got a very good internal gear in that way. He was rather surprised to hear the result of Mr. Parker's experience as to the life of the batteries. That was undoubtedly the weak point in the electrical car. He (the speaker) had a battery which would run from 20 to 25 miles a day all the year round, and not cost more than £25 per annum to keep in good order. If they could get a battery of a moderate weight which would not cost more than that, electric traction had a future before it.

Sir Edgar Vincent proposed a vote of thanks to Mr. Parker for his instructive and interesting paper. He should like to know the writer's opinion as to the maximum power of an electric motor as applied to traction—what was the greatest range that could be got out of a car, and what would it cost? He (Sir Edgar) had a Jenatzy car, which fulfilled the purpose of a town vehicle, but was very inefficient when put to country work. The pace was necessarily higher in the country than in towns, and the distances gone over very much longer. Up to thirty miles there was nothing against his car—the movement was excellent, the steering was easy, and there was no breakdown. But after a journey of over thirty miles with a speed of ten miles per hour, the limit of its capacity is soon reached. Had a system been discovered which would give better results than those?

The vote having been cordially assented to, Mr. Parker returned thanks and remarked that his experiments had been carried out in a town where the gradients and roads were perhaps the worst in the kingdom—the town of Wolverhampton. Mr. Oppermann had had the opportunity of carrying out his tests in London. With regard to the width of chains, those of the London Cab Company were 1½ in. The London cabs weighed something like 28 or 30 cwt. each. The chains he used on a car weighing 13½ cwt. were 1½ in. He did not believe that a chain 1½ in. wide was a practical thing to use on a car. If solid tires were used on an electric car he did not think it was wise to exceed a speed of 9 miles per hour. With this speed 30 miles was the maximum with the ordinary batteries he had used.

Mr. Northey thought the question asked by Sir Edgar Vincent had hit the right nail on the head. He had hoped that Mr. Parker would have indicated what types of batteries had proved the most valuable during the course of his experiments. The running of a carriage was entirely dependent on the batteries, and a carriage could be easily built to look very pretty and symmetrical if they had not to provide space for a large battery.

In the 'bus shown it was lighter in every way than Mr. Ward's, but the battery capacity was so small that it was not a practical vehicle except for small runs. Though Mr. Parker's steering gear was ingenious it was only practicable to vehicles whose wheels were all the same size. With regard to the arrangement of the motors, he asked if Mr. Parker ran his car at the top speed under the condition of the motors being in parallel, and what had been his experience with regard to controllers. He had spoken of his charging arrangement and of current being put back into the battery, thus avoiding waste of energy, but he had not described the manner in which it was done. He (the speaker) agreed with Mr. Oppermann that spur gearing could be made entirely silent, and thought that "live" axles were more efficient than sprocket wheels and chain driving.

Mr. Parker, in reply, pointed out that he had mentioned that the best results were obtained by a single motor, and not by two motors. The last car he had built had a single motor running at 1,200 revolutions per minute. The type of battery that he found to be the best, and with which he carried out his experiments, was a Crowds. What gave the greatest destruction to the cells was the fact of putting them into parallel. No doubt the best system was to keep a set of batteries intact. The best way, if possible, was to have the motor continually running, instead of stopping or starting so many times, and to have one set of cells and vary the speeds by gear. That was the only arrangement that would lengthen the life of the battery. There was no doubt that to make a perfect electric-car pneumatic tires would have to be used. The vibration on the roads, the continual stopping and starting, and the excessive discharges were the causes of batteries giving way so quickly.

Mr. F. R. Simms proposed a vote of thanks to Sir Edgar Vincent for presiding. This was seconded by Mr. Worby Beaumont, who said it was unfortunate that Mr. Parker having gone so far had given up the very useful experiments he had made. He had covered a very great deal of ground, and if he had gone on a little further he might have produced what he regarded as a most satisfactory vehicle.

Sir Edgar Vincent briefly acknowledged the compliment, and the proceedings terminated.

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AN automobile club has, we learn, just been formed at Odessa, South Russia.

THE Decauville Co. has just supplied one of their well-known voiturettes to the Sultan of Langkat, Sumatra.

MESSERS. LEIDERSDORF AND CO., of 62, Avenue de Keyser, Antwerp, have lately established a *garage* or stable for automobiles, which they are gratuitously placing at the disposal of *chauffeurs* visiting the city.

THE Palais de l'Automobile, Limited, is the title of a company which has been registered in this country with a capital of 7s. The object is to carry on the business of cycle and motor-car manufacturers and merchants.

THE Pfälz Nahmaschinen und Fahrraderfabrik (Kayser Brothers), of Kaiserslautern, Germany, have sent us a copy of their new catalogue of motor-tricycles. The machines are built on De Dion lines, two types being made, one with the bridge-axle and one with the ordinary axle. In addition illustrations are given of front-seat attachments and trailing cars, one of the latter taking the form of a parcels carrier.

SEVERAL motor-cars belonging to Mr. Bell, of Boscombe, commenced a regular service between Westbourne and Boscombe on New Year's Day. Mr. J. S. Norman, of "The Quadrant," has also a car, which he intended to have started at the same time, but as the driver had not received his official permit from the Corporation, he was unable to commence his duties.

THE authorities having investigated into the circumstances of the action against Mr. T. Roland Outhwaite, manager of the Edinburgh Autocar Company, for careless and reckless driving in Clerk Street, Edinburgh, which was recently remitted from the Police Court to the Sheriff Court, have decided to depart from the charge in respect that the circumstances do not warrant a prosecution.

## CORRESPONDENCE.

## "NEXT YEAR'S RACING SEASON."

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—My apologies are due to the Hon. C. S. Rolls in having, when writing my recent letter, overlooked the fact that he took part in the Paris-Boulogne race. As regards the 100 h.p. car, which Mr. Rolls states is at present a "castle in the air," I am not in a position to deny this or otherwise, the information being conveyed to me by the issue of the 22nd ult., in which your Continental correspondent states that M. Lemaitre had informed him that a Peugeot car, with engines of the power named, was in course of construction.

Notwithstanding Mr. Rolls' letter, I see no reason to change my opinion as to it being a long time ere we shall be able to bring the first prize in the racers' class in any of the French courses to this country, an opinion which has been strengthened by the disappointing news that no English team will compete this year for the Gordon-Bennett Cup.

Yours, etc.,  
LOOKER-ON.

Bedford, January 8th, 1900.

## THE LEVENN MOTOR-VOITURETTE.

MESSRS. ERNST AND CO., of 13, Rue Laffitte, Paris, have recently introduced the two-seated light motor-car illustrated herewith. The vehicle, which has been designed by M. C. Levenn, presents several interesting features, more particularly as regards the transmission mechanism. The motor is a two-cylinder vertical one, with radial discs for cooling purposes and electrical ignition; it is located in the fore part of the car, at "C" (Fig. 2), and drives a longitudinal shaft *A*, through the medium of the friction clutch *E*, which permits the motor to

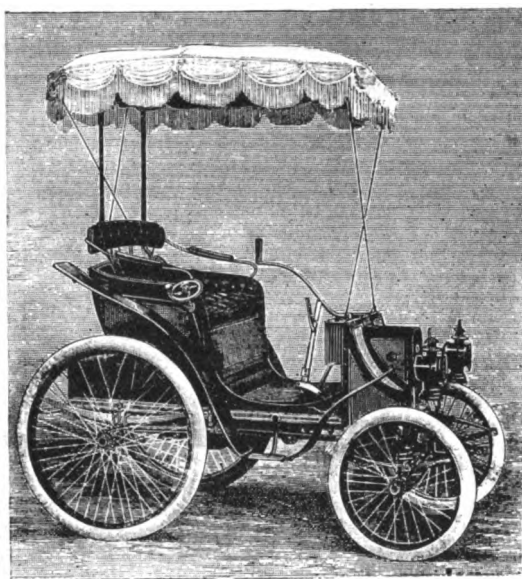


FIG. 1.—GENERAL VIEW.

be cut out from the transmission mechanism at will. The peculiarity of the car lies in the friction gear adopted to transmit the power from the longitudinal shaft *A* to the intermediary shaft *a*. The former carries at its end a large flat-faced disc *P*, in contact with two large discs *pp'* at right angles, free to be moved along by means of the fork *s* (Fig. 3) rotating continually with the square shaft *a*. Two discs are employed in place of one, in order to increase the adherence. As will be seen from the sectional view (Fig. 3) a differential gear is introduced between the two discs *pp'* to equalise the speed of rotation, they running

at slightly different speeds owing to the different points of contact on the disc *P*. The position of the discs *pp'* on

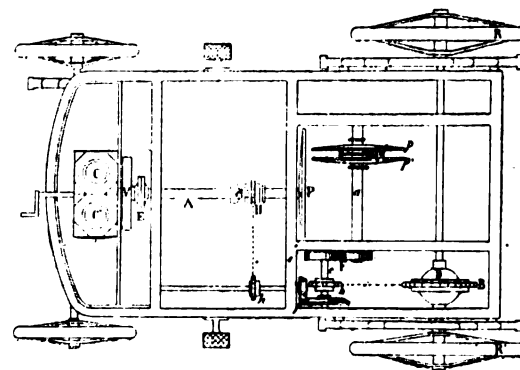


FIG. 2.—PLAN.

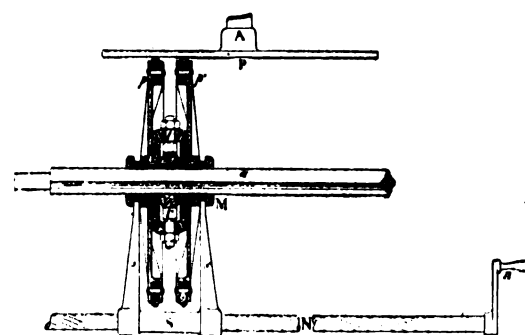


FIG. 3.—PART-SECTIONAL VIEW OF FRICTION-DRIVING GEAR.

the shaft *a* is controlled by a hand wheel at the right of the driver, and according to the position of the discs any desired speed from zero to a maximum of thirty kilometres per hour, can, it is claimed, be attained; while when the discs *pp'* are brought over the centre of the disc *P* a reverse motion is obtained. The shaft *a* is geared by the reducing pinion *F* to a small countershaft *c* from which the power is transmitted by a single chain to the rear road axle, which is provided with a differential gear *D*. While it is claimed that the friction discs give a quiet positive drive on level roads and moderate hills, an alternative gear is provided for use when mounting steep gradients. By a glance at Fig. 2 it will be seen that a second clutch is provided at *e* on the shaft *A*, on which is mounted a chainwheel *H* connected by a chain to a small wheel *h* on an intermediary parallel shaft, which terminates in a bevel wheel, the latter gearing with a similar wheel on the countershaft *c*. Steering is effected by a bar, and ample brake power is provided. The car is spring suspended both at the front and rear, while the road wheels are of the cycle type shod with pneumatic tires.

A SERVICE of motor-vehicles has just been started in the South of France between Lyons and Villefranche.

MR. ERNEST OWERS has announced his intention of giving a silver cup value £21 to the owner of the motor-carriage which shall be most successful in the amateur class in the Automobile Club's 1,000-mile trial.

THE *Motorcycle-Automobile* of Chicago, in its last issue to hand, publishes some interesting illustrations taken during the recent ride of Messrs. Entz and Maxim on a Columbia electric car, when it is claimed a run of 100 miles was made on one charge of the batteries.

THE suggestion that the Queen has been prevented from going to Nice because of the noise of the automobiles is absurd, for, as was announced in these columns at the time, Her Majesty's horses at Windsor have been properly educated to observe the motor-car with equanimity.

## MIDLAND MOTOR NOTES.

By "HERCULES."



### Automobiles and Street Traffic.

MR. CROMPTON's recent paper before the Automobile Club has been very favourably commented upon by manufacturers and motorists generally in the Midlands. It has been forcibly brought home to many that the traffic, in most of the busy streets in the larger towns here, is not regulated as it should be, and that drivers of vehicles pay little attention to other conveyances which are following. If they are on the proper side of the road, that is sufficient for most of them, even when driving in towns. As for country roads, it is remarkable how seldom one meets with a horse and trap on its right side. Drivers seem to have a preference for the wrong side, and though most of them are willing enough to cross over on meeting a vehicle, some delay is always caused when a faster vehicle comes up from behind and desires to pass. Those who have seen motor-cars in constant use in Coventry and Birmingham can confirm Mr. Crompton's statements as to the distance in which an automobile can be brought to rest, and the ease with which they can be manoeuvred. These are advantages possessed by motor over horse propelled vehicles which the general public may be slow to recognise, but which will, as Mr. Crompton points out, when automobiles come into general use, add very much to the safety of the public.

### The Forthcoming Trials in the Midlands.

MOTORISTS in the Midlands will be pleased to know that the arrangements for a series of motor-vehicle trials at the Cycle and Motor Exhibition at Birmingham have been completed. The trials are to be confined to five classes, as follow: (1) Motor-quads, to carry two riders; (2) light motor-cars, or carriages, not weighing more than 11cwt., fully equipped for running, and carrying not fewer than two passengers; (3) motor-carriages weighing not more than 11cwt., fully equipped, to carry any number of passengers, according to their seating capacity; (4) motor luggage vans or carrier vans, to carry a burden of not less than 10cwt. and attendant; (5) motor-tricycles to carry one rider. The distance trials are to take place on the main road between Coventry and Birmingham, starting from Bingley Hall. The hill-climbing trials are arranged for Mucklow Hill, about nine miles from Birmingham.

### Coach-Builders and Motor-Vehicles.

DURING the past week I have been looking up firms carrying on business with the coach-building trade, such as carriage trimmers, wheel builders, lamp manufacturers, axle and spring makers, coach and saddlers' ironmongers, and gather that many have begun in a small way to cater for the motor-car industry. I could not help thinking that many of these worthy tradesmen look somewhat suspiciously on the new trade, and came to the conclusion that they had not given sufficient thought to the future developments of the industry. Still, I am persuaded that they are watching the trade very carefully, and have only to be convinced of the prospects of its success to enter enthusiastically into the business.

### Motor-Cars in Coventry.

I WAS asked the other day how it is that in Coventry, the very centre of the motor industry, no attempt has been made to provide a motor-car service. Coventry, as is well known, is splendidly served with an electric tramway, and the route is so extensive that it is doubtful whether a motor-car service is needed. The only suburb not provided with trams is Earlsdon, a distance of a mile and a quarter, and a motor-bus might find plenty of passengers if the workmen were catered for morning, noon, and evening, but at other times the journey

would be made with few passengers. The time is not yet for motor services in the city, though personally I should like to see an attempt made.

## STORING MOTOR-CAR SPIRIT WITHOUT A LICENCE.



IN the Bristol Police Court, on Monday, before Mr. W. E. George and Alderman C. E. L. Gardner, Mr. Arthur E. Johnson was summoned for keeping at 5, Redcross-street, on December 19th, eight gallons of petroleum without having a licence. Mr. Roberts, from the Town Clerk's office, prosecuted; Mr. F. E. Weatherly defended.

Mr. Weatherly asked that the summons should be amended making it two quantities, six gallons and two gallons, instead of one of eight gallons. The reason was that the six gallons were in a tank and the two gallons in two motor-cars. Mr. Roberts did not object. The Assistant Magistrates' Clerk ruled that this could not be done, but said that the summons might be withdrawn and another issued. The present summons was not wrong. Mr. Roberts then opened the case, and said that the defendant was the manager of the Bristol Motor-Car Company. In June last a licence for petroleum was applied for, but was not granted, as the place was not suitable. On December 19th, at 4.30 p.m., Inspector Gotts visited 5, Redcross-street, and found two motor-cars, each having one gallon of petroleum in the tank, whilst at the back of the premises was a drum containing six gallons. Two gas jets were burning within six or seven feet of the cars.

The question arose as to who the Motor-Car Company was, and Mr. Weatherly said that Mr. Appleton traded as the company, and Mr. Johnson was the manager.

The Assistant Magistrates' Clerk pointed out that under these circumstances the summons was no use if Mr. Weatherly persisted in the objection. Mr. Weatherly said he had not intended raising a technical objection, but as he could not get the summons altered he should do so. It was important for him that the summons should distinguish between the six gallons in the tank and the two gallons in the cars. The two gallons would raise a question of law which he believed had not before been argued in a court. It was the first case of the kind and they were anxious to get the point settled.

After some discussion Mr. Roberts withdrew the summons, it being understood that another would be drawn in accordance with Mr. Weatherly's request, and containing the name of Mr. Appleton instead of the manager.

THE *Felo* states that the town of Spa has offered the Automobile Club of Belgium a sum of 10,000fr., in connection with the prize fund for the Spa-Bastogne race.

## TO CORRESPONDENTS.



All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible is necessary.

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# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.



IT has been suggested that seeing that the route of the forthcoming 1,000-mile trial will pass through many large centres of population, special interest would be taken in cars suitable for public service. If such cars were placed in the ordinary classification in which they would be pitted against vehicles of similar power but with very much lighter bodies, they would, of

course, appear at a disadvantage in the competition; but if a sufficient number of manufacturers of and agents for public service cars enter such for the trial, a separate class will, we understand, be made for this type, and a special prize will be given for the vehicle having the best record. It is suggested that cars entered for this special class should be required to carry at least six persons (or their equivalent weight), and that if more than six persons (or their equivalent) be carried, points shall be given for the extra persons or weight. Manufacturers and agents who desire to enter vehicles for this class should communicate with the Secretary of the Automobile Club. In accordance with the suggestion submitted when the Trial was first talked of, arrangements will be made for the times occupied by the various vehicles in ascending certain hills on the route to be recorded. In view of the fact that the route between Kendal and Carlisle will be *via* the Lakes instead of Shap Fell, motor-vehicles taking part in the test may be entered for a special trial of the time occupied in ascending Shap Fell. This trial will take place on the evening of the day on which the vehicles arrive at Kendal. An up-hill race of motor-cars on Shap Fell has often been written about—such a contest will actually take place on the evening of Monday, 30th April. In connection with the trial the Automobile Club de France has promised three medals:—A silver gilt medal, a silver medal, and a bronze medal. These will probably be allotted to the three vehicles irrespective of class which may make the three best records in the trial. The Chevalier de Knyff, the chairman of the Sports Commission of the A.C.F., has also kindly promised that no French race shall be fixed to take place during the period of the 1,000-Mile Trial, so as to afford French *chauffeurs* an opportunity of taking part in the British event.

### The Co-operation of Cyclists Invited.

THE Committee of the Automobile Club, by whom the 1,000-mile trial is being organised, are very anxious to secure that the route should be properly marked throughout at corners or points where there might be any difficulty, with flags indicating the proper direction; and the committee invite the co-operation of cycle clubs, individual cyclists, and others who may be interested in this sporting event, who reside on or near the route of the trial, and who might be willing to assist in its organisation by placing flags as signals or by acting as time-keepers. They are asked to kindly communicate with the Secretary of the Automobile Club, 4, Whitehall-court, London, S.W.,

stating over what portion of the route they would be willing to undertake the fixing of proper direction flags, etc., which will be supplied by the Automobile Club. The names of clubs and individuals assisting in the organisation of the trial will be published in the official programme.

### The Hill-Climbing Capabilities of the Daimler "Parisian" Car.

ON Sunday last a test was made of the hill-climbing capabilities of the Daimler "Parisian" car, the same vehicle that took part in the recent run to Sheen House, and of which an illustration was given in our issue of November 24th last. The test was made from the "Dysart Arms" to the "Star and Garter" Hotel, Richmond; the distance is 1,800 feet, and the total rise 119 feet, which equals an average of 1 in 15, and includes gradients of 1 in 9.43, 1 in 9.60, and 1 in 9.53. The distance was, we are informed, accomplished in 2min. 49sec., which equals 7.66 miles per hour, a performance which speaks much for the new car.

### The First Automobile Club Big Race.

A MEETING of the Sports Committee of the Automobile Club will be held shortly to consider the arrangements for the first race of the Club. It is proposed that it shall take place on the roads of the North of France and to Paris. There will be the usual classes, viz.:—(a) racers; (b) tourists; (c) voiturettes; (d) motor-cycles. It is to take place at such a time as will enable the competitors to witness either the race for the Gordon-Bennett cup or the "Trefoil" race, which is to last five days in July next, and in which some of the British automobilists will probably be competing. A motor-cycle race meeting is also being organised to take place near London in the spring.

### The War Office and Automobiles.

THERE is a probability that the War Office may yet reform its ways in the direction of motor-vehicles. It sent three engineer officers to the trials organised by the Liverpool Self-propelled Traffic Association—a series of trials which should have warranted the adoption of the automobile without delay. But nothing was done for months and offers for further experiments were ignored and refused. At length there is hope, for it is said that tenders have been invited from the leading builders for five motor-wagons, capable of carrying two tons and travelling five miles an hour. Though the news comes late in the history of the present campaign we trust it is the forerunner of many such orders.

### Views of Two M.P.'s.

THAT the matter of transport is of vital importance everyone knows, and Sir Charles Dilke informs us that he has noted the extent to which steam traction was used in our Army manœuvres last year as well as the French military experiments with motor-vehicles. There is no doubt the keenest military critics are in favour of further experiments, and the efforts of legislators might usefully be directed to urging the War



Office to greater wakefulness in the matter. Knowing that the Hon. J. Scott Montagu, M.P., combines a knowledge of automobilism, South Africa, and Parliament, his views, as expressed in a letter to ourselves, should be of particular interest at the present moment: "I am certainly of the opinion that it would be a very wise thing if experiments were undertaken by the War Office with a view to proving the utility or otherwise of automobiles in warfare. And I am of the opinion, too, that such experiments could not but prove the success of the motor-car over the horse-drawn vehicle. There would be no horse to shoot, practically no limit to the day's work, and no horse sickness—three very important factors. A steam motor would probably be found to best answer the purpose, as steam could be raised with wood or any other fuel at hand."

#### Electric Motors for Our Artillery.

The matter is becoming of general interest, as the following extract from the correspondence columns of the *Manchester Guardian* shows:—"The idea of electric motors for our artillery struck me when I read of the serious loss we sustained at the battle of the Tugela River through the enemy shooting so many of our horses, the guns consequently being left, and thus enabling the enemy to use our own weapons against us. When I look around and see how this wonderful electric power is utilised, on the roads, on the rails, and in the workshops, etc., I do think if our Government were to place themselves in the hands of some of our famous electrical engineers they would be able to devise a plan for adopting this mode of locomotion on the field of battle. The motor could be iron-plated to protect it from musketry fire, and these iron plates could be carried up some little distance to protect the operators; in fact, making the shelter bomb-proof. The guns would then always be ready for an advance or retreat. The difficulty of supplying the current to charge these motors before going into action is one, I think, that could be easily overcome." The writer of the letter is, we are afraid, rather too sanguine with regard to the last point.

#### The Mo-Car Company, Limited.

THE formation of this company in Glasgow about a year ago attracted much attention from the fact that its chairman was Sir William Arrol, and that on the Board of Directors was Mr. Coats, of Paisley. From time to time we have received reports of what Mr. Johnston, the patentee, was doing, and of various experiments with compressed air, etc., but it was only this week that we had the pleasure of meeting this gentleman in Glasgow, when we learned that he is at present making petrol motors in three sizes—the lowest being 4½ h.p., and the highest 10 h.p., actual. He is, however, experimenting with a view to building an engine of 25 h.p. The motors are all of the two-cylinder type with electrical ignition. In addition to oil motors, Mr. Johnston has built a number of electrical vehicles, and on one of these—constructed to carry six—we have had the pleasure of a short trip. The cells used are of a new type and have been adopted after a severe test extending over eleven months. The motor, giving up to 10 h.p., is of the Arrol-Johnston type, while there are numerous patent devices in the car. The shape of the body is somewhat peculiar, there being two seats in front, two behind, facing forward, where the tiller steering lever is located, and two seats at the rear—like the back of a dog cart. The vehicle ran extremely easy and, like all electric vehicles, was practically silent. Its weight is 30 cwt., and with one charge of the battery a distance of twenty-five miles over the rough roads around Glasgow can be traversed. The petrol cars are being provided with bodies similar to those adopted for the electrical vehicles, the motor being located at the rear. We may mention that it is extremely probable that the Mo-Car Co. will enter an oil motor-vehicle for the Automobile Club's 1,000-mile trial, and that several cars will be shown at the Agricultural Hall Exhibition in April next. We were informed that the company was full up with orders, and that a number of vehicles have already been delivered.

#### The Automobile Club's 100-Mile Trials and Motor Tests.

THE system of holding occasional 100-mile trials by the Automobile Club has, we learn, been abandoned, as it was pointed out that vehicles which were tested when the road conditions were bad were at a disadvantage as compared with those which were tested under favourable conditions. The Club Committee have decided, therefore, to hold 100-mile trials periodically, say four times a year, under the supervision of judges and observers, as was the case last June. It is thought that manufacturers of vehicles which are to be shown at the Agricultural Hall next April may wish to secure before the Exhibition for display there the Club's 100-mile certificate. The next trial will, therefore, probably take place immediately before the opening of the Exhibition, viz., on or about Wednesday, April 11th. As regards the testing of motors, it has been decided to appoint a sub-committee to prepare a scheme. In view, however, of the heavy work involved by the preparations for the 1,000-mile Trial it is probable that these tests will not take place until after the big event.

#### A Geographical Point.

A CYCLING contemporary published at Birmingham, and desiring to be quite up to date, publishes some motor news, and has made the following interesting statement: "The possibilities of the motor-car as a mail carrier were demonstrated at a recent trial in America, when a run was organised between Lincoln and New York." That New York is the name of a fairly well-known city in the United States we do not deny, nor would we discuss the possession by America of a city named Lincoln. But that there is need for geographical enlightenment in the office of our contemporary we most emphatically assert. In our issue of the 5th inst. we gave full particulars of the "motor-car as a mail carrier" in connection with the run from Lincoln to New York, and took the trouble to make very clear that both places were in England. Hence we cannot understand the error of supposing that America is the only country that has a Lincoln and a New York.

#### The Liverpool Heavy Motor- Wagon Trials.

AT a meeting of the Council the Liverpool Self-Propelled Traffic Association held this week, it was decided to hold the next trials of motor-vehicles for heavy traffic in May, 1901, instead of in October next, as had been contemplated at one time. While Lord Derby retains the Presidency of the Association, the office of Chairman of Council is being created to relieve his lordship of the active duties connected therewith. Mr. Alfred L. Jones has been invited to accept the new position. At the meeting of the Council it was also agreed to draft a report on the tare limit in accordance with the request of the Local Government Board, received through the Automobile Club. Furthermore, no papers are to be read this session before the Association. A conference is, however, to be called in March for the purpose of discussing the conditions for the 1901 trials, while meets of light motor-carriages are to be held in May and June—one each month.

#### Nine to Three.

THERE are three members of the Bridlington Rural Council who desire that motor-cars shall not go more than ten miles an hour on the straight road and six when turning corners. The latter is one mile better than the intentions of the Essex local authority, to which we referred last week and motorists must be thankful for small mercies from local bodies. But opposed to those three gentlemen are nine others who favour matters remaining as at present, so that when the Rev. G. E. Park proposed his restrictions at the Council's last meeting his motion was lost. Motorists found a friend in Mr. A. W. M. Bosville, J.P., who declared "that the motion was a blow aimed at motor-cars, which he predicted within the next few years

would in the country take the place of light railways. The scorcher on a motor-car, as on a bicycle or a fast trotter, was the curse of society. He said number him. They would do well could they succeed in numbering the scorcher, the burglar, and the rate collector." We agree with Mr. Bosville as regards the rate collector; but should he who drives a motor-car be placed in the same unpopular category?

#### Horses and Automobiles.

REFERENCE has frequently been made to the excellent example set by many automobilists in allowing their motor-cars to be used for the purpose of accustoming horses to the same, and to the growing number of horse-owners availing themselves of such facilities. We are now pleased to learn that at the last meeting of the Committee of the Automobile Club it was agreed that the following clubs, *i.e.*, Ranelagh, Sheen House, and Hurlingham, should be asked to appoint a day on which horses might be introduced, there to be trained in the presence of motor-vehicles in accordance with the suggestion made at the Club by the Attorney-General.

#### A Motor-Omnibus Service at Lynn.

DURING the past two or three years many schemes have been inaugurated for the welfare of the inhabitants of King's Lynn by the local authorities, but it has been left to a private individual to provide what has long been much needed, a really efficient means of communication with the suburbs of the town. Mr. Frank Morriss, of the Motor and Cycle Stores, London Road, Lynn, has constructed a motor-omnibus, and has this week commenced a regular service from one end of the town to the other, passing through all the main arteries and making as his termini the South Gates and the Swan Inn, Gaywood. The 'bus, which is luxuriously upholstered and is roomy and comfortable, is timed to leave the South Gates every hour, commencing at 9 a.m., allowing twenty-seven minutes to arrive at Gaywood. There is a three-minute stoppage, and each hour, commencing at 9.30 a.m., the 'bus will travel from Gaywood to the South Gates. The fares are a penny from one stopping-place to the other, or twopence from the South Gates to Gaywood, or *vice versa*. Mr. Morriss is to be congratulated on his enterprise.

#### A Water-Jacketed Pennington Motor.

WHILE going over Messrs. Stirling's commodious and well equipped works at Hamilton the other day, we noticed amongst the many cars a vehicle that seemed strange to us. On the frame was a rough testing body, all the motor, gears, etc., being exposed to view. The vehicle was fitted with a 12 h.p. Pennington water-jacketed motor, built at Wolverhampton for *char-à-banc* purposes. The car was stated to travel well, and in the construction of the frame, etc., had many novel points. For its power, the engine was very light; and the vehicle seemed a workmanlike and substantial production. When fitted with the proper body it will not look unlike an electrical car. It will, we understand, be shown at the Agricultural Hall in April along with a car fitted with a new Pennington vertical motor, of which great things are expected. The price of this latter vehicle will, we believe, be about £100.

#### Motor-Cars and Railways.

FREQUENTLY have we urged the value of the automobile as an adjunct to the railway companies' present stock, and now we learn the matter is to be considered at the International Railway Congress. Certainly it deserves a place in the deliberations of that body, and we should like to hear of it being considered by the railway directors and managers of the country. At the Congress the matter will be brought forward in the form of a question, "How can farm produce best be brought to main line shipping stations—by light railways, tramways, motor-cars, motor-cycles, etc.?" At present farmers naturally employ the

farm horses for the purpose, but it would probably prove far more profitable for the railway companies to collect consignments by motor-vehicles. Although the Great Eastern Railway has not yet experimented in that direction, its chief goods manager, Mr. Walter Gardner, is a believer in the establishment of branch goods lines, which would materially reduce the cost of collection, even with the present means. Therefore such an extension of facilities, coupled with the use of motor-vehicles, should prove a valuable source of revenue and profit to the companies.

#### The Future of the Tramcar.

AN enthusiastic motorist writing to the *Scotsman* says: "The really dangerous and obstructive things on our streets are the tramway cars, because they cannot leave their straight track, and because they cannot be pulled up in a short space of time or distance; the rail friction is so slight that a hard application of the brakes only makes the wheels skid." There is much to be said in confirmation of this, and Mr. Crompton's recent paper at the Automobile Club drew attention to our tramways in a way that had never occurred to many before. Practically half the width of many of our leading thoroughfares is monopolised by tramcars which cannot be diverted from their fixed course, while every other vehicle has to be turned aside should it have ventured too near the centre of what is tradition.



Photo by [Argent Archer, Kensington].  
MR. A. W. ARMSTRONG AND MR. STAPLEE FIRTH ON PEUGEOT CAR.

ally termed the public highway. And yet the public eye has become so accustomed to the appearance of the cars in our principal cities and towns that suggestions of supersession are regarded as the proposals of those who have suffered from aberration of the mental vision. Despite this, however, we feel convinced that the tramcar will have a more mobile competitor ere long. From horse to electricity is a change now being made throughout the country, and probably the next development will be in the direction of taking up the rails and giving the public a system of transit which will be more economical with regard to the area of our streets and roads.

ARTICLES of association have been filed at Albany, U.S.A., for the incorporation of the General Carriage Company to establish a service of automobile omnibuses and cabs in New York. Lines of high-power omnibuses will, it is stated, be put on the chief thoroughfares, and be run day and night. A large number of automobile cabs will also ply for hire.

## THE MOTOR-CAR IN SOCIETY.

—❧—



ALTHOUGH not yet given a place in the stables at Windsor Castle, the motor-car is winning its way into favour with the British aristocracy. The Duke of Connaught some time ago patronised a bazaar at Bagshot and took a keen interest in the automobile on which he took a trip therefrom; the late Duke of Westminster was the possessor of a motor-car ordered at the last Agricultural Hall exhibition; Lord Alwyne Compton is an enthusiastic motorist; the Duke of Bedford has a car on order; and a score of other

titled gentlemen could be mentioned who recognise both variety and utility in the latest means of traversing our country roads. Society people like Sir Francis and Lady Jeune are making long tours. Others, like Sir W. D. Pearson, M.P., have recognised the advantages of automobiles in conveying guests to and from the railway station when giving social entertainments; while Mr. Arthur Balfour, M.P., has enjoyed a spill from a motor-tricycle and gazed with admiration on the motor-vehicles of Sir Samuel Montague, the Hon. John Scott Montagu, M.P., and other Parliamentary colleagues. Added to all this individual evidence the list of members of the Automobile Club must be regarded as conclusive demonstration of the fact that Society is interested in the motor-car, and that the motor-car is going into Society. And for every one who has thus publicly declared for the automobile there are half-a-dozen others in the attitude of the Marquess of Waterford, who believes "there is an immense future for these vehicles, and I am only waiting until they become more perfected to buy one myself." While that view is creditable to the cautiousness of the British character, it must not be too strictly adhered to, as if all were inclined to the same opinion inventors would have little encouragement to strive towards perfection.

Recognising this, several engineers are preparing themselves with a view to becoming advisory experts in the purchase and management of the automobile, and now Mr. Oliver Stanton comes forward to teach and instruct the nobility how to drive the motor-car.

We have had a visit from this gentleman, who came to this country from the United States in 1890 and quickly attained distinction in teaching cycling to many of our most distinguished ladies and gentlemen. The cycling boom having spent itself Mr. Stanton has an idea that an equally prosperous time is in store for the motor-car industry, and that history will repeat itself in this matter as in others. Anticipating this development he has spent six months in the workshops of the Daimler Company at Coventry, where he acquired a thorough knowledge of the mechanism of the automobile in all its parts. It was no sudden thought that took him to Coventry, for he satisfied himself as to the excellence of the Daimler car ere he devoted so much study to its mechanism and management. Asked as to his method of teaching, Mr. Stanton thus expressed himself:—

"I first make the pupil acquainted with the mechanism of the car. By opening the gear case and allowing him to take hold of the levers he can quickly comprehend how damage can be inflicted; and so with all the other parts until a right idea is formed as to their importance in the mechanism and the proper way in which they should be used. Full explanations are given of everything, from the valves to trimming the lamps, my idea being that those members of the aristocracy who take to motoring will not be content to sit beside a driver. They will not only want to drive themselves, but will not always care to have to take a *mécanicien* with them on trips and tours. Hence the value of the course of systematic tuition which I am able to give."

"And how long is that course?"

"That depends upon two things—firstly, the mechanical aptitude of the pupil, and secondly, the amount of attention which he gives to the matter."

"Well, speak of the average man."

"I should say in about a week or two, with daily lessons of one-and-a-half to two hours, anyone of fair intelligence and application should be able to master the intricacies of the motor, and then it is merely a case of practice, practice, practice. Of course, when I attend gentlemen at their country houses, I am able to go very thoroughly into the matter, and after dinner, following, of course, a good drive, am able to take some of the parts into the house and emphasise many points that can only be incidentally dealt with when on the car. My sole idea is to combine a thorough mechanical knowledge with the capacity for driving reliably, so that a pupil shall become entirely independent of the *mécanicien*."

"So much for the man-motorist, Mr. Stanton. What about the ladies?"

"They will take to the motor-car as naturally and as gracefully as they did to the safety bicycle. In fact, I am already teaching several to drive their cars in the West End, and one of my lady pupils has become as expert as any man not only in negotiating the car through the traffic of the streets, but also in attending to the mechanism when anything goes wrong. She could trust herself on a long tour without any need to requisition the services of a mechanic to attend to stoppages."

The industry is yet too young to have given Mr. Stanton many adventures; but doubtless he has many interesting experiences in store. He is of opinion that the orthodox frock coat and top hat are not likely to be lightly discarded by gentlemen-motorists when driving in the park, and is confident that in the country the motorists of the future will not greatly depart from what custom has long sanctioned. Although intending to confine himself to teaching with a view to ordinary touring and driving, Mr. Stanton would doubtless like to prepare riders for some of the Continental races—an inference we draw from the fact that he has just concluded a course of lessons to Count Zborowski, who has entered his 24-h.p. Daimler car for the Automobile Club's 1,000-mile trial.

## MOTOR-CARS IN SWEDEN.

—❧—

THE American Consul at Gothenburg has recently sent a report to the U.S.A. Department of State on automobile prospects in Sweden, from which we take the following:

"Many business men here think that the import of motor-carriages into Sweden, if once properly started, will be considerable, provided they can be made durable, neat in appearance, safe and easy to handle, and not too expensive. Cab-owners, especially in Stockholm, are considering the advisability of purchasing motor-carriages, and a short time ago they sent experts to Berlin to study and examine motor-cabs manufactured in Germany. The report they made on their return was not altogether favourable. They said that automobiles which in catalogues seemed to be ideals of perfection in reality did not come up to expectations. The chief objection to the motor-cabs, with accumulators or storage batteries, was that they could not make sharp enough turns. The cabs were built with the batteries placed close to the back wheels. The steering power of the front wheels was so small that the carriages could turn only in very large curves, making them unfit for use on narrow streets.

"Besides these inconveniences, common to French and German motor-cabs alike, it was said that few of the carriages exhibited were of the type desired—that is, with room for from two to four passengers. Hunting coaches, motor-cycles, delivery wagons, etc., for sportsmen and business houses were plentiful; but cabs were fewer and, as a rule, clumsy in appearance. A German manufacturer promised, however, to remedy the faults mentioned; but it is not yet generally known whether the prospective purchasers and the manufacturer have agreed on terms.

"At present there is only a petroleum motor-carriage and a light motor-cycle in Gothenburg, both of French manufacture. I believe there is an American motor-carriage in Stockholm."

THE Chemnitzer Motorwagenfabrik (Bruno Berger and Co.) is the style of a new concern which has just been formed at Chemnitz, Saxony.

# The Progress of Automobilmism in 1899.

(Concluded from page 710.)



HAVING dealt briefly in our issue of last week with the constructional side of our movement, a few lines may now well be devoted to a glance at what has been done in the way of the adoption of motor-vehicles. It goes without saying that the automobile has been adopted by a large number of private gentlemen and ladies for pleasure purposes; at the same time it is, in our opinion, more in the employment of motor-vehicles for purposes of utility that the future stability of the motor-car industry lies, and in this connection we are pleased to refer to the way in which they are being made use of by doctors, travellers, etc. One of the most remarkable features of the past year has, however, been the establishment of public services of motor-vehicles. The roughly-prepared list we have before us as we write this shows that such services were started or projected in more than forty different towns in the United Kingdom during 1899. In some districts, such as Edinburgh and Newcastle-on-Tyne, the question of the utility of motor-vehicles has been satisfactorily settled, as is shown by the orders for additional cars that have been placed. In Newcastle the automobile has even come into such favour as to create quite an opposition to a proposal to extend the tramway system, it being considered that the motor-vehicle is better adapted to the requirements than the tramcar.

Another satisfactory feature is the attention which municipal authorities are now devoting to the new means of locomotion. In this direction there can be no doubt that the enterprise shown by the Chiswick vestry in the adoption of motor-dust-carts has been of excellent service to the industry. In the metropolitan area the vestries of Chelsea, Hackney, Strand, Camberwell, and St. George's are all preparing to follow the lead of Chiswick, as also are the City of London, Glasgow, Willington Quay, and Birmingham corporations. Following the example of other countries, our postal authorities, although not receiving the automobile with open arms, are fully alive to their advantages, as witness the tests that have been made in London and Edinburgh, while the successful trial on Christmas Day in the Lincoln district must have undoubtedly hastened forward the time when we shall see motor-vehicles forming a part of the regular equipment of our postal service.

It is with regret that we have to chronicle that the War Office has not shown similar enterprise to that of the Government Department above alluded to, and it would seem that unless our military authorities quickly make a change in their tactics we shall find ourselves behind Continental nations. As yet no experiments in motor-vehicles have been carried out by the

War Office, although this has been done during the past year in France, Italy, Austria, and Germany. So much for 1899. The early days of the present year have, however, witnessed some heed to the warnings thrown out in various quarters. As will be seen from our Comments this week, tenders are now being invited for motor-vehicles of a heavy type for transport purposes.

In connection with fire-brigade work the automobile has not yet met with the adoption which we consider its advantages merit, especially, too, in view of the fact that Messrs. Merryweather have sent to India an automobile fire-engine which was satisfactorily tried in the very hilly district of Blackheath. In

this department our fire-brigade authorities are allowing their *confrères* in France and America to lead the way, for automobile service-wagons, if not fire-engines, are already in use in both the countries named.

Among the many things at work helping in the spread of automobilism in this country during the year that has just closed, in addition to the trials and tours organised by the Automobile Club, the Motor-Car Club, and other associations and persons already referred to, are the race meetings held at the Crystal Palace, Manchester, St. Albans, New Brighton, and elsewhere; the greater facilities now available for obtaining supplies of motor-car spirit, etc., and the more favourable attitude towards motor-cars that is being shown by the Press. All these have participated in the popularisation of the automobile



LA FABRIQUE NATIONALE'S MOTOR-VOITURETTE. (See page 725.)

in the United Kingdom. On the other hand, it is to be regretted that the favour of the general public has been somewhat hindered by a few *chauffeurs* who have not been content to travel at the speed allowed by law. During the course of the past year there must have been close upon a hundred furious driving cases in the various police courts—our own columns have contained accounts of more than sixty such—and although in the bulk of these convictions have only been secured on the strength of the “fairy tales” of the policemen being believed by the magistrates, it is no use denying the fact that “scorching” has taken place in a few regrettable instances that have done much harm to our movement. Particularly has this been the case in the Lincolnshire, Bedfordshire, and Huntingdonshire districts, and it is to this that, in a large measure, is due the crusade of the Yeovil Rural Council in favour of a reduced limit of speed—a crusade which, however, we do not for a moment think will result in any success. There have, too, been a number of motor-car accidents, six of which, unfortunately, were attended with fatal results. Much as we regret them, particularly when they cause the death of any

person, it is too much to hope that the record sheet in this department will in any year be a clean one. Every means of locomotion—ships, railways, horse-drawn vehicles, cycles, and motor-cars—in the course of a year claim a number of victims from one cause or another, and it can only be hoped that motorists will do everything they can in the way of care and caution to keep the automobile at the bottom of the list as the cause of fatal accidents.

Attention may now be briefly directed to the progress of the automobile on the Continent. Great as was the activity in the new industry in 1898, it has been even more pronounced than ever during 1899, particularly in France, a fact which is patent to every one who is in close touch with the motor-car movement. There can be no doubt that France still leads the way, both as to the construction and practical adoption of motor-vehicles, they having come into such rapid use that, notwithstanding the largely increased productive capacity, the demand is still far in excess of the supply.

Dividing our remarks on French progress into three sections—petroleum, steam, and electrical vehicles—and dealing with the first of these, we may mention that several new types of impulse motors have been designed and put on the market, and although some of these have yet to prove themselves efficient engines, many of them have already found a place for themselves. We may here mention *en passant* that quite a number of engineering firms in France, while not building motor-cars themselves, are doing a large business in motors suitable for use on motor-cars and cycles. Pressure on our space prevents us from mentioning even the names of all the unusually large number of petroleum-motor vehicles, descriptions of which we have published during the past ten months; we must content ourselves by briefly alluding to a few of the more important and interesting. The striking feature of the year in France has been the large amount of attention devoted to the production of light voiturettes to sell at prices ranging from £100 to £200. The recent exhibition at the Salle Wagram, in Paris, was practically devoted to a display of cars of this class, and although many of the vehicles presented little interest from a constructional point of view, yet they show the trend of the demand on the other side of the Channel. Of French voiturettes in our columns alone descriptions and illustrations have appeared since our first number of no less than seventeen, including those of the De Dion, Peugeot, Mors, Bollée, Renault, Turgan-Foy, Underberg, and Phébus concerns. In four, six, eight, and more seated vehicles the Panhard-Levassor, Peugeot, Mors, De Dietrich, Delahaye, and Hurtu firms still keep well in front. The number of makers of this class of vehicle has, too, been increased, the vehicles made by Gobron-Brillié, Henriod, and others, each having individual features of merit and interest. Very little appears to have been done in France in the way of petroleum or heavy oil motor-vehicles in contradistinction to petroleum-spirit, no new vehicle with a heavy oil motor having come under our notice during the past year, although the Compagnie des Automobiles, système Koch, are still building vehicles of this type.

In another section, too—that of *avant-train moteurs*, or petroleum-motors mounted complete with the power-transmission mechanism on a fore carriage so that they may be fitted to existing carriages, comparatively little new work has been done. M. Pretot and M. A. Amiot are still at work on their respective systems in this class, to which only one addition has to be made—the Heilmann, illustrated in a recent issue.

Although the old-established makers of petroleum motor-vehicles have made very little change in their different systems of motors and transmission gear, a noticeable feature of the year has been the introduction of several improved details in the way of carburettors, water-cooling arrangements, tube and electrical ignition devices and friction clutches, etc. The prompt adoption of these, where they have proved themselves more efficient than the old arrangements, has naturally assisted in bringing modern vehicles to their present tentatively-perfected state.

Coming now to steam carriages, nothing very new appears to have been done in France, the firms engaged in the production of this type of vehicle having devoted their attention to the perfection of the details of the old patterns. Messrs. Piat

have introduced a heavy steam wagon, while a light car has been put on the market by the Société Européenne, both these vehicles having been illustrated in these columns.

As regards electrical vehicles, a good deal of work has been done in France during the past year. M. Jeantaud and M. Krieger have introduced considerable improvements in their electric cabs and broughams. The Mildé and Jenatzy electrical vehicles have also been considerably improved, while, among new vehicles employing electricity as the motive power which have attracted attention during the year may be mentioned the Créanche and the Draulette.

The French Automobile Club continues to more than justify its existence by the excellent trials carried out under its control, these, during 1899, having included trials of accumulators, cabs, and heavy transport vehicles. No reference to France would be complete without some mention of automobile racing. *Courses* in that country have been increasingly numerous, and "Le Tour de France" did much to advance the already extensive popularity of motor-vehicles on the other side of the Channel.

Passing now to Germany, quite a number of new automobile clubs and companies came into existence during 1899, and these would appear to have given a considerable impetus to the motor-car movement in that country. In our own pages descriptions of fully twenty new German-built cars—both electrical and petroleum-spirit—have appeared. In this connection we may confess we are a little surprised that no German firm has yet introduced a steam-driven vehicle. In addition to the Daimler Motoren Gesellschaft of Cannstatt, Messrs. Benz and Co., of Mannheim, Bergmann's Industriewerke, of Gaggenau, Herr Moritz Hille, of Lobtau, Dresden, the Eisenach Fahrzeugfabrik, of Eisenach, and Messrs. Cudell and Co., of Aix-la-Chapelle, the construction of motor-vehicles has been taken up, amongst others, by the Kuhlstein Wagenbau-Anstalt, of Charlottenburg (petrol), Die Gesellschaft für Verkehrsunternehmungen, of Berlin (electrical), the Oggersheim Maschinenfabrik (electrical), the Bielefeld Maschinenfabrik (Durkoff) of Bielefeld (petrol), Messrs. Lange and Gutzeit, of Berlin (electrical), and Messrs. Hentschell and Co., of Berlin (electrical). Quite a number of the large German cycle-making concerns, too, have also taken up the manufacture of motor-cycles in connection with their business.

In Belgium a fair amount of progress has been made, due largely to the fêtes and runs organised by the Belgian Automobile Club and to the exhibitions held in Brussels, Liège, and Antwerp. Three or four concerns—notably the Pieper Company, the Fabrique Nationale d'Armes, the Société de Construction Liégeoise d'Automobiles, of Liège, Messrs. Vincke, of Malines, and Messrs. Déchamps—are already turning out motor-carriages on a fairly large scale. A number of other concerns are also engaged on the production of automobiles, mainly of the voiturette class, so that altogether there is abundant evidence to show that a good deal of quiet work is being done in Belgium, whilst from the importing point of the question several of the English types of vehicles have been freely ordered.

Excellent progress is being made in Italy. Several automobile clubs have been brought into existence, while quite a number of motor-car companies have been formed, some to build automobiles and others to start public services. In Switzerland a similar remark applies, there being now two concerns turning out motor-cars on a commercial scale. In Austria very little actual manufacturing appears to have so far been done, the bulk of the vehicles in use—whose number is, however, steadily increasing—having been imported. One firm—Messrs. Jacob Lohner and Co., of Vienna—is, however, already turning out both petroleum and electric vehicles. In Holland and Denmark similar progress is recorded; that is to say, that vehicles are being imported in increasing numbers, and that to our knowledge the question of taking up their construction is under consideration by several firms in each of the countries named. In Spain, although motor-car vehicles have not yet met with a very large adoption, good work is being done in pioneering the horseless carriage movement in that country, and already several services of public vehicles are projected if not actually started. From Russia, Sweden, and Norway we have very little news as to what is being done, but if the large number of Swedish members



of the Mid-European Motor-Car Club is any criterion, it is evident that the matter is not being overlooked in that country.

Turning to America, if one were to judge from the number of new companies that have been formed, it would be expected that the motor-car industry is already the most important in the United States! That this is far from being the case need not be said, yet beneath all the great company-promotion business that has been going on during the past year there is evidence of a considerable amount of experimental work being in hand in every department—petroleum-spirit, electrical, and steam, and although there are probably at the present time only about a couple of firms in each of these classes turning out automobiles on a commercial scale, the present year is likely to see considerable developments across the Atlantic. Indications of this are already available, for, as mentioned a fortnight ago, one result of the recent visit of Messrs. Lawson and Pennington to the United States is that a number of English-built cars have been shipped across the Atlantic.

In concluding this review we freely acknowledge that but a very cursory glance has been given at the progress of automobile vehicles in the United Kingdom and throughout the world during the past year. There are many phases and topics in connection with our movement which have not been touched upon. If further information be needed a glance over the issues of this journal since it first made its appearance, not quite a year ago, will, however, afford the same. The number of doubters of the statement that automobilism has come to stay is steadily declining, while its advocates and supporters are increasing day by day. The year 1900 has opened with very bright prospects for those already established in the motor-car industry, and while the number of firms comprised therein is likely to be increased during the course of the year just entered upon, we believe that the number of converts to the modern means of locomotion on common roads will progress at, if anything, more than a proportionate rate, so that there is still every encouragement and scope for those who are at present devoting their attention to the production of the "perfect" motor-vehicle.

## THE FABRIQUE NATIONALE D'ARMES' MOTOR-VEHICLES.

IN our issue of June 16th last we illustrated and described the neat two-seated motor-voiturette built by the Fabrique Nationale d'Armes de Guerre, of Herstal, near Liège, Belgium. The company has lately turned out a three-seated car on the same lines, of which we are now enabled to give an illustration (see page 723). As will be seen, the motor is located in the front portion of the car, under a bonnet, so as to be readily accessible. It is of the vertical petroleum-spirit type; it comprises two cylinders set side by side, and is stated to be capable of working up to 3 h.p.; while its weight is given as 55 kilogrammes, or just over 1 cwt. Radial discs are provided around the cylinders, these, combined with the location of the motor in the front of the vehicle, rendering the use of a water-jacket unnecessary. The ignition is electrical. Passing to the transmission mechanism, from the motor shaft to the intermediary shaft the power is transmitted by belts, and from the intermediary to the rear road-wheel axle by means of the usual chains and sprocket wheels. Two mechanical forward speeds are provided, the variable-speed gear being controlled by a single handle mounted on the steering standard. It is claimed that, by means of the variable-speed gear and the variation of the electrical ignition, any speed from zero up to 35 kilometres per hour can be obtained. The road wheels are of the cycle type, fitted with pneumatic tires. The steering hand-wheel and the speed control handle are mounted on a standard within convenient reach of the driver, provision being also made for the starting of the motor from the driver's seat.

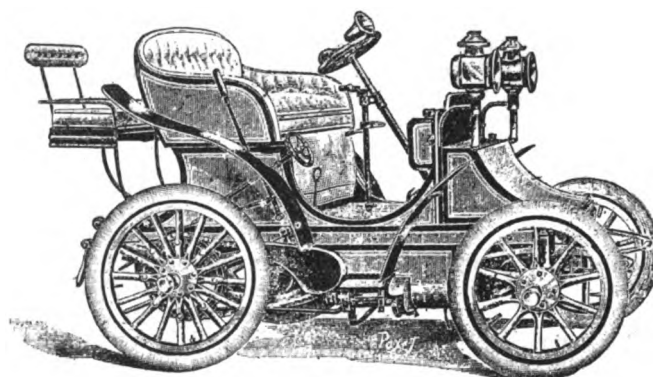
THE annual general meeting of the members of the Automobile Club is to be held on Monday, February 26th.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### The Bardon Motor-Car.

LA SOCIÉTÉ D'AUTOMOBILES ET DE TRACTION is the title of a new concern which has lately been formed in Paris (30, Avenue Niel) to construct automobiles in accordance with the designs of M. Bardon, and of which one type—a three-seated car—is illustrated herewith. The feature of the Bardon car is the petroleum-spirit motor; this is of 4 h.p., and is located transversely in the forepart of the frame. The engine, which is provided with a water-jacket and electric ignition, comprises one cylinder; there are, however, two pistons with a central explosion chamber. The movement of the two pistons is transmitted by bevel gear to an intermediary shaft parallel to the cylinder. This latter shaft carries a friction clutch and the variable-speed gear, the power being transmitted through one or other pair of pinions to the differential shafting, and from the latter to the rear road wheels



by the usual sprocket wheels and chains. Three forward speeds—9, 18, and 34 kilometres per hour—are provided, as also a reverse motion. Ample brake power is provided, while the steering is controlled by an inclined hand wheel. The road wheels are of wood, fitted with pneumatic tyres. The company are also building a 4-h.p. four-seated wagonette on similar lines, weighing about 12½ cwt., and are also preparing for the construction of 12-h.p. and 16-h.p. cars.

### Automobile Coal Wagons.

It is announced that the Berlin Electricitäts Werke Gesellschaft of Luisenstrasse, 35, Berlin, N.W., has decided to carry out some trials with automobile wagons for the conveyance of coal between the coal stores and their various central electric lighting stations. Makers of suitable vehicles are invited to place themselves in communication with the company.

### The "Parcel-Post" Race.

To the considerable disappointment of the many persons who are interested in the question of the practicability of the automobile for post-office work, the race organised by *La France Automobile* to take place on Sunday last, at Achères, failed to come off, and inquiries as to the why and wherefore elicited no response from the promoters. Possibly we may see this interesting contest at a later date, when the atmospheric conditions are more favourable.

### Exhibition at Luxemburg.

It is in the Villa Louvigny that the Luxemburg exhibition of automobiles will be held, from the 3rd to the 18th March, and in connection with it will be decided an automobile race over a course of about sixty miles. The Government of the Grand Duchy is taking considerable interest in the new industry, and has, it is reported, decided to purchase several automobiles

for the purpose of inaugurating a series of public services in their country. The officials of the exhibition anticipate securing a grant from the Government, which will considerably strengthen the financial position of the undertaking.

#### Motor-Cars in Senegal.

*Le Matin* announces that a telegram has been received from Saint-Louis stating that Monsieur Chaudié, the Governor-General of Senegal, has made his entrance into that town by automobile. It is a pity that those users of automobiles in far-distant countries do not write up their experiences, as they would be of much interest to all followers of automobilism.

#### The Accumulator Tests.

It will doubtless be remembered that a competition of accumulators was commenced at the club house of the Automobile Club of France in June last, and that twenty-three systems were presented for trial. The experiments with these accumulators were continued until December, and in their first report, only recently issued, the committee state that eight only of these twenty-three types participated in all the tests, and they only underwent the trials with difficulty. The subsequent and more detailed reports will be awaited with interest.

#### The Turin Automobile Meeting.

It will probably be towards the end of April that the great automobile meeting will be held by the Automobile Club of Turin. As outlined at present the first day of the meeting will be reserved exclusively for attempts on existing records: on the second a "carrousel" will be held on the race-course of Stupinigi, while the third day will be devoted to a race from Turin, *via* Pinerolo, Saluzzo-Cuneo, and Savigliano, back to that town. There will be an automobile congress in Turin at the same date, when it is expected that large numbers of foreign as well as Italian *chauffeurs* will be present.

#### The Paris-Bordeaux Race.

ENTRIES for the Paris-Bordeaux race continue to come in apace, and although the date fixed for this historic *course* is four months ahead the number of formally entered competitors has already assumed respectable proportions. For the cars the following names are inscribed:—MM. Giraud, Charron, Girardot, Voigt, René de Knyff, Hourgières, Degrais, Piet-Lataudrie, Levegh, Guy des Aunaies, Antony and Lemaitre. The motor cyclists so far are MM. Bardin, Teste, Marcellin. Let me remind intending English competitors that entries should be addressed to the offices of *Le Velo*, 2, Rue Meyerbeer, Paris, and should be accompanied by the proper fees, viz., two hundred francs (£8) for the cars, and one hundred francs (£4) for the motor-cycles.

#### Munich's Motor-Cars.

MANY municipal bodies have, in their utter ignorance of all matters pertaining to automobilism, framed absurd and vexatious regulations with regard to the circulation of motor-vehicles, but never, I believe, has any corporation yet had the temerity to fix a limit upon the number of automobiles permissible in a town. But this is what the Municipal Council of Munich has now done. And what a limit, too! No more than *twenty-five* automobiles are to be tolerated upon the streets of Bavaria's capital. I presume that in the event of a touring *chauffeur's* arriving while Munich's full complement of motors were in use, he would not be permitted to enter the town, and a local motor-man would be requisitioned to leave with his machine the sacred precincts of the city before the belated tourist might enter. It really is too utterly absurd!

#### An Austro-Bavarian Race.

UNDER the joint organisation of the Automobile Club of Austria and the Bavarian Automobile Club there will take place, either at the end of May or the commencement of June, a race from Munich to Vienna, *via* Salzburg, in two stages. Provision will be made for four classes of motor-vehicles, viz.:—(1) Racing cars; (2) Touring cars weighing more than 400 kilos. and carrying at least three persons; (3) Voiturettes not exceeding 400 kilos. in weight; (4) Motor cycles. Valuable prizes in the form of "objets d'art" will be awarded to the successful competitors in each category. In connection with this *course* there will probably be held an automobile exhibition at Vienna.

#### Circulation of Automobiles in Russia.

THE Russian authorities have recently issued a series of very strict regulations governing the employment of automobiles, and they have fixed the maximum speed at which a self-propelled vehicle may travel at twelve versts, or about eight miles per hour. In addition they rule that no automobile vehicle is to be ever left unattended, which decision will render necessary the employment of a man by every driver of a motor-car in Russia. It would appear to be the desire of nearly every European Government to kill the new industry at its birth.

#### Austrian Automobiles.

It is reported from Austria that the automobile section of the Sportplatz International of Baden has fixed upon the following dates for the races to be held during the current year. On June 24th the hill climbing contest for the championship of Lower Austria, over a route from Helenenthal to Siegenfeld. There will be three categories in this competition. On July 29th the great meet of automobiles at the racecourse of Baden, close to Vienna. The events to be decided are:—1. Motor cycle race. 2. Voiturette race. 3. Gymkhana. 4. "Concours d'élégance." 5. Handicap for motor tricycles. 6. Handicap for motor quadricycles. 7. Corso. On September 9th there will be a race in the forest of Vienna. The route will be by way of Helenenthal, Alland, Neuhaus, Poltenstein, Gainfarn, Voslau, Baden, a distance of about forty miles. Entries should be sent to the secretary of the Sportplatz International of Baden, 3, Wassergasse, Baden.

#### News from Nice.

It is reported that the cup so generously given to the Automobile Club of Nice by M. Paul Chauchard will this year be competed for by members of the club only, but that in 1901 it will be put up for competition between the automobile clubs of the south-east of France. This year's date is fixed for Sunday, February 4th, and among the latest entries I note the name of M. Pinson, who, in "Le Tour de France" drove the 12-h.p. Panhard formerly owned by M. René de Knyff. On the 7th inst. there took place the fourth excursion organised by the club this season, and, in spite of the rain, a very fair number of members took part in the run. A start was made from the club house at ten o'clock in the morning, and the Cap d'Antibes was reached in good time for lunch. The return journey was successfully performed, and under more agreeable conditions, the rain having ceased. An excursion to Napoule is planned for the 28th inst., and members participating will have an opportunity of fraternising at a banquet with the members of the Cercle Nautique. Entries for the "week" continue to arrive, and everything points to this year's fêtes even outshining those of previous years. It is rumoured that the motor-cyclist Renaux will be participating in the Nice-Marseilles-Nice *course*, and if this proves to be the case, other competitors will have to go for all they are worth to win. One of the more recent arrivals in the town is Mme. Bob Walter, who has driven through from Paris on her car, a distance of nearly seven hundred miles.

### The Original Inventor of the Petroleum-spirit Motor-Car.

THE question as to what nation had the right to claim the honour of giving birth to the inventor of the motor-car is just now the cause of much discussion. Last year an Austrian paper claimed the honour for a Viennese mechanic, named Marcus Siegfried, to the consternation of French patriots, who had always held that Cugnot invented the steam carriage in the eighteenth century, and Lenoir the gas automobile in the nineteenth. The French Automobile Club appointed a committee to make full inquiry, and the report of the committee appears in the *Vélo*. The committee states that M. Lenoir's patent for a "motor dilated by the combustion of gas" was taken out on January 24th, 1860. The nature of the invention is fully described in the committee's report. On April 17th, in the same year, M. Lenoir amended his description by claiming to use liquid carbonic hydrogen. This patent, the committee assert, is the earliest on record, M. Siegfried's first carriage having been constructed in 1877. M. Daimler twenty-five years later brought the invention to perfection. The report states that M. Lenoir, who it is decided is the inventor, is still alive, being seventy-eight years of age, and is living retired at La Varenne-Saint-Hilaire. The report concludes with a request that the members of the Automobile Club will give him a fête, which would be the most valuable of all rewards to him. *Le Vélo* adds that the French Automobile Club has resolved that a large silver-gilt medal shall be awarded to the veteran inventor, and adds a request that it may be formally presented by a deputation, which will ride to La Varenne in an automobile worked under his system.

### Motor-Cycles in France.

IN publishing a table of the number of motor-cycles in use in France, the *Vélo* rightly points out that the figures quoted do not after all accurately represent the total number of machines, inasmuch that there are undoubtedly a considerable number of motor-cycles which are in constant use, but which have no official existence by reason of the carelessness or deliberate forgetfulness of their owners to register them. This is especially the case in large towns, where identification is a matter of difficulty, and where accordingly a certain number of *chauffeurs* decide to run the risk of detection, and not take out a licence for their machines until absolutely compelled. Then, too, the number of motor-cycles is ever varying, for not a day passes that does not see the addition of many machines made to those already in the hands of the public. But the figures upon which the table of *Le Vélo* is based are the actual official returns, and represent the machines whose existence is recognised by the State. As would be naturally expected, the department in which Paris is situated comes out an easy first, containing, as it does, 1,650 machines as against the 226 standing to the record of the second. After these two provinces, this is to say, the Seine and the Nord, the most populous from a motor-cycle point of view are:— Seine-et-Oise, 189; Rhône, 170; Marne, 118; Seine-Inférieure, 115; Bouches du Rhône, 113; Alpes Maritimes, 110; Maine-et-Loire, 110; and Loire-Inférieure, 94. These first ten provinces account for 2,895 motor-cycles between them. The departments of Seine-et-Marne, Gironde, Indre-et-Loire, Loiret, Meurthe-et-Moselle, Saône-et-Loire, Côte d'Or, Hérault, Aisne and Loire account for 745 machines all told. The departments of Allier, Pas-de-Calais, Eure, Oise, Var, Gard, Ardennes, Isère, Sarthe, and Calvados contain 515. The departments of Aude, Somme, Ille-et-Vilaine, Aube, Vaucluse, Eure-et-Loir, Haute-Garonne, Deux-Sèvres, Loir-et-Cher, and Lot-et-Garonne have 365. The departments of Pyrénées-Orientales, Yonne, Charente, Basses-Pyrénées, Côtes-du-Nord, Orne, Drôme, Vienne, Cher, and Mayenne, 272. The departments of Jura, Nièvre, Finistère, Meuse, Morbihan, Vosges, Tarn, Dordogne, Haute-Marne, and Ain, 194. The departments of Charente-Inférieure, Manche, Puy-de-Dôme, Vendée, Aveyron, Savoie, Ardèche, Doubs, Haute-Saône, and Indre, 143. The departments of Landes, Haute-Savoie, Gers, Tarn-et-Garonne, Ariège, Belfort, Hautes-Pyrénées, Haute-Vienne, Creuse, and Haute-Loire, 70. The departments of Corse, Hautes-Alpes, Lot, Basses-Alpes, Lozère, Cantal, and

Corrèze, 8. These figures bring the gross total of machines registered in the eighty-seven departments of France up to 5,207—a truly respectable figure. When shall we have any approach to this number in England?

### Severe Penalties.

THERE is no mistaking the intention of the Parisian authorities to deal very severely with the automobilists brought before the courts to answer charges of contravening the traffic regulations, and found guilty. It is but very seldom that such cases come up for judgment, not that instances of contravention are rare, but because the police pay little or no attention to irregularities so long as no actual accident occurs. It will be remembered that the Comte de Berthier's misadventure in the Boulevard Haussmann on the morning of the start for "Le Tour de France" resulted in his being condemned to six days' imprisonment and ordered to pay a fine of one hundred francs, while quite recently an even severer sentence has been passed upon the Comte de Gueffon. From the evidence given in court it appears that one Sunday in October last the car driven by the Comte came into violent collision with one of the small tramcars which run between the Porte Maillot and the Jardin d'Acclimatation, at the moment that it was crossing the Allée de Longchamps. A Madame Buisson, who was seated with her child in the tramcar, was thrown out and seriously injured, one of her legs being broken. The Comte pleaded that the accident arose through the tramcar driver's failure to sound his horn and slacken speed as he emerged from the woods which skirt the Allée de Longchamps on either side, while on his part the driver contended that the mishap was entirely brought about by the Comte conducting his vehicle at an excessive speed. The *chauffeur* was ultimately condemned to two months' imprisonment, and ordered to pay two-thirds of the sum of £600 awarded to Madame Buisson as damages, the tramway owners paying the balance. Feste, the tramcar driver, was sentenced to eight days' imprisonment, as the Court held that he had not sounded his horn. He, however, obtained the benefit of the Bérenger law or First Offenders Act. That these sentences will have a wholesome effect upon those automobilists who habitually conduct their cars with an entire disregard for the safety of the general public is to be earnestly hoped for, as it is to their thoughtless and selfish conduct that automobilism does not stand so high in public favour as it otherwise would do. It is but a small minority of the automobile community who indulge in this evil practice, but all *chauffeurs* become, in the eyes of the public, tarred with the same brush.

### Among the Clubs.

FROM Italy comes the report that two new automobile clubs have recently been founded. The first is in the capital itself, and has been organised by some of the leaders of Roman society, whilst the second has been established at Florence under the title of the Tuscan Automobile Club. At the initial meeting of the latter society a large number of *chauffeurs* were present, and a powerful committee was duly elected to elaborate a series of rules and regulations for the government of the club. This committee consists of MM. L. Ginori, E. Corsini, A. Cappellini, Masetti Fedi, and Adami. Both these new societies should lend their immediate aid to the older clubs in contesting the ridiculously severe regulations on the circulation of automobiles which are on the point of issue by the Commission specially appointed by the Minister of Public Works for this purpose. The entire absence of any practical automobilist on this Commission is no doubt largely responsible for the stringency of the rules drawn up. I may cite as an example that the legal speed limit in towns is to be fixed at six kilometres per hour, which in itself is almost sufficient to kill the new mode of locomotion. Going further afield, it is reported from Odessa that several members of the Russian aristocracy, including Prince Serge Ouroussoff, intend to form an automobile club in that town. Initiated under such auspices this club will doubtless thrive. And in France the clubs continue their forward

march; no failures, no resting "en panne," but continuous progress. In the north, at Rouen, there is about to be held a general meeting of the local automobilists and others interested in the horseless vehicle for the purpose of receiving the proposed rules of the new club as prepared by the committee appointed on December 8th. The scheme has been taken up so enthusiastically in Rouen and the neighbourhood, that the Automobile Club of Normandy, as the new society will be called, starts on a perfectly firm basis, and no fear need be entertained as to its future. At the big club itself, the A.C.F., the last week has witnessed a very excellent concert on Saturday and an assault-at-arms on Tuesday evening, both of which entertainments were largely attended. The admission to the club's concert-dinner of ladies bearing the relationship of either mother, wife, daughter, sister, or niece of the accompanying member is a privilege of which the fair sex largely availed themselves, and the club house is greatly brightened by their presence. I understand it is the intention to form a committee on official relations with the public authorities, and it is further rumoured that a "theatrical committee" is to be constituted. During last year only sixty-six resignations of membership were sent in to the club, and each was prompted either by illness or absence abroad. In Germany a new society named the Frankischer Automobil Club has recently been established at Nuremberg, with Herr Gottfried Barth as president.

## CORRESPONDENCE.

### MOTOR-OMNIBUSES FOR LONDON.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I take considerable interest in all matters concerning motor-cars and mechanical traction of all kinds. During the last few years motor-vehicles have certainly made great progress, both as regards appearance and efficiency. Motor-vans are daily doing good work, and pleasure carriages are delighting many people with the new mode of getting about.

But I am still waiting for the arrival of a successful service of motor-omnibuses. That much has been done in this direction I have no doubt, and I believe that two 'buses are running on the streets at the present time. Let all those who have the motor industry at heart do all in their power to relieve the sufferings of the numberless 'bus horses by pushing the motor-omnibus question.

Yours truly,  
London, N., January 15th, 1900.

NOVICE.

### STORING MOTOR-CAR SPIRIT WITHOUT A LICENCE.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In reference to the case at Bristol regarding the storage of petrol, reported in your last issue, I have been thinking of keeping a stock of motor-car spirit, but I do not want to pay a licence if it is not required, and if it is I do not know to whom to apply for it. I have a copy of what purports to be the law *re* petrol for use in motor-cars, and that states forty gallons can be kept without a licence provided it is kept in tanks or drums holding not more than twenty gallons. If this is so, how is it the firm mentioned have been summoned for the small amount of eight gallons? It seems to me a good many owners of cars lay themselves open to a summons in ignorance and that a little information on the subject would be as acceptable to them as it would be to

Yours truly,  
Battle, January 15th, 1900.

W. A. J.

MESSRS. J. S. ROBERTS AND CO., LIMITED, have been registered with a capital of £1,000 to carry on the business of agricultural, dairy, and general engineers, cycle, motor-car, and vehicle manufacturers, etc.

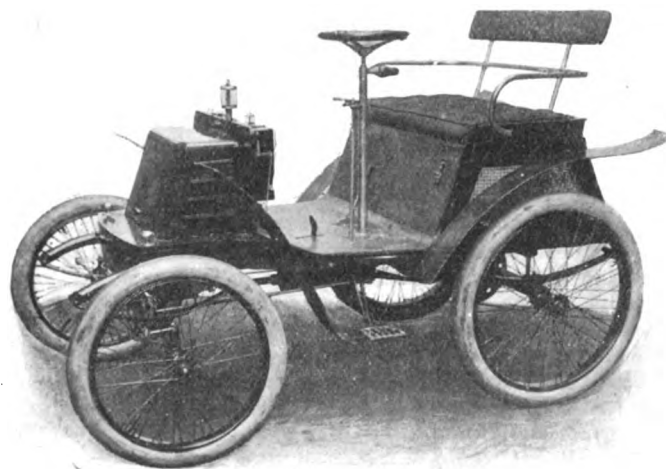
A CYCLE and Motor Show is to be held at the Royal Botanical Gardens, Manchester, from the 16th to the 24th of February. The space, as in previous years, has been all applied for, with the exception of two stands in the motor section, which are still vacant.

## THE "NEW ORLEANS" MOTOR-VOITURETTE.

WE are enabled this week to illustrate an elegant two-seated motor-carriage, the "New Orleans," which is being constructed and put on the market by Messrs. Burford, Van Toll and Co., of the Orleans Cycle and Motor Works, Twickenham. The motor is of the vertical petroleum-spirit type, and is arranged under a "bonnet" in the front part of the frame; it has a cylinder 95 mm. diameter, by 90 mm. stroke, and is capable of developing  $3\frac{1}{2}$  h.p. The ignition is electrical, while for cooling purposes the cylinder is provided with radial ribs and a fan driven off the fly-wheel by frictional contact, these combined with the location of the motor in the front portion of the car, rendering the use of a water-jacket unnecessary.

As regards the power transmission gear, two speeds are provided, the transmission from the motor-shaft to the intermediary being effected by means of belting and two pairs of pulleys. The belt normally runs slack and when slipped on to one or other pair of the pulleys is tightened, and consequently made to grip by a special arrangement. From the intermediary shaft to the rear axle the power is transmitted through spur wheels, the ordinary driving chains and sprocket wheels being thus dispensed with.

Although only two mechanical speeds are provided, any intermediary speed up to a maximum of eighteen miles per hour can be obtained by advancing or retarding the electrical ignition. The frame of the car is built up of steel tubing, and is spring suspended on the axles. The body is made of light ash wood and cane and is neatly and comfortably upholstered. Steering is controlled by a hand-wheel, arranged on the right; the wheels



are of the cycle type, 26in. in diameter front and 30in. rear, shod with Clipper pneumatic tires. Every part of the car and mechanism is accessible, while beyond the brake levers—a hand brake on the intermediary shaft and tire brakes—belt tightening lever, and the steering wheel, there are only three handles to manipulate—viz., 1, the variable speed gear; 2, the electrical ignition; and 3, the mixture. The petrol tank is located in front, while two convenient boxes are provided, one for the battery and induction coil, and the other for tools. The car, which is of Belgian origin, and is already being made in Belgium and by the Georges Richard and de Dietrich concerns in France is, for the English market, being manufactured entirely in this country, Messrs. Burford, Van Toll and Co., who control both the English and American patents in the new car, in addition to their present factory, being engaged on the construction of new works 200ft. long by 60ft., which are to be equipped with the most modern machine tools. We understand that operations are now in hand on the construction of a first lot of 100 of this type of car, which weighs less than four cwt., and that the firm will be able to make deliveries in April next. A

specimen of the new vehicle can, however, already be inspected and tested, and in view, of its relatively low price, £130, it ought to meet with a ready sale.

## MIDLAND MOTOR NOTES.

By "HERCULES."

### Road Repairing.

THE action of the Northampton County Council in asking the Urban and District Councils in the county to repair their roads in sections, so as always to have a good track on one side for either cycles or motor-cars, is an example that is worth commending to other county councils. In some towns the practice has been to complete one side of the road before the other is touched, and the steam-roller has enabled the work to be done with the utmost despatch. In other towns, however, the whole of the road is dealt with, and the new layer of stones is often left unrolled until the roller is available, with the result it frequently happens that a section of the newly-metalled road is left in its rough state during the night. An instance of this came under my notice at Leamington the other night, when the driver of a motor-car suddenly found the wheels ploughing through several inches of metal. One would have thought that in Leamington, where the roads are kept in a well-nigh perfect condition, the roadmen would have been instructed to complete the macadam on one side of the road, at least, so that motorists and cyclists could pass over without inconvenience and the risk of damaging their tires.

### Charging Accumulators.

THERE is no doubt that exhausted accumulators are the cause of many of the mysterious failures and stoppages experienced by motorists, who, having to send their cells some distance for re-charging, put off doing so as long as possible. The result is that the motor runs badly, and the cells themselves are damaged and sometimes spoilt. The Midland Motor Agency, Acock's Green, Birmingham, have endeavoured, in introducing the "Ideal" primary battery, to fill a want by enabling automobilists to charge their cells at any time, and without running the risk of having them damaged by too high a current. The "Ideal" battery will, it is stated, charge the four cells in a Benz car from one charge of acid, costing but 6d. Again, owing to the cost of charging being so small when using these batteries, the ordinary candles in the carriage lamps may, it is claimed, be economically replaced by electric lamps. The batteries are usually sold in sets of three cells, which will charge the four accumulators together, though generally two accumulators are charged, while the other two are at work in the car. There are said to be no fumes or smell given off when the battery is at work. All the metal parts are protected with a special anti-corrosive enamel, and, with the exception of the zincs, which are gradually dissolved and require renewing occasionally, the battery will, it is stated, last for years.

### The Midland Cycle and Motor Exhibition.

THIS Exhibition promises to be a most attractive one, as the exhibitors' list includes most of the best-known cycle makers and the leading firms in the motor industry. Messrs. Allard and Co., Limited, of Earlsdon, Coventry, will show a two-seated motor-car, belt-driven, two speeds, electric ignition, 3 h.p., water-cooled. Also a motor-car frame in the rough, and a motor-tricycle fitted with an Allard 3-h.p. engine. The Motor Manufacturing Company are also exhibitors, but I am not sure what cars they will display. They have been so busy of late, and have so much work on hand, that it is doubtful whether some of the vehicles intended for exhibition will be finished in time. The Ariel Company will also show various types of their motor-tricycles, and the Wolseley Sheep Shearing Machine Company will have on view their new motor-voiturette. The Automobile Supply Company will exhibit a smart French car for

two passengers, and a two-seated English car. In addition, they will have motor fittings of every description, a motor "quad" frame complete with front seat, and probably a Peugeot voiturette. Messrs. T. Smith and Sons, of Wharf Street, Aston, Birmingham, will show a large and assorted collection of motor stampings. This firm have made special preparations for dealing with large motor work, and will be found ready for any developments in the industry.

THE recently-formed Leicester and County Automobile Club has been affiliated with the Automobile Club of Great Britain.

A MEETING of the Racing Rules Committee of the Automobile Club and representatives of the N.C.U. and the A.A.A. is to held this evening, the 19th inst.

MESSRS. FRISWELLS, Ltd., 18, Holborn Viaduct, E.C., have been appointed sole agents for England for the Rochet cycles and automobiles.

LIEGE is becoming a very busy automobile centre. There are over sixty owners of automobiles in this Belgian town, and, as is known, a number of automobile factories.

THE Cyclist Club of St. Petersburg is organising for the 28th inst. a race for automobiles and motor-cycles, from Tsarskoe-Selo to Gatchina and back, a distance of about 70 kilometres.

A BERLIN tailoring firm is making use of a motor-tricycle and trailer as a means of advertisement. The driver as well as the two riders in the trailer are equipped with silk hats and gorgeous coats, the name on the concern being marked in bold letters on the backs of the latter.

JOHN CHILD MEREDITH, Limited has been registered with a capital of £4,000 to acquire the business now carried on by Ellen A. Meredith at 1 and 4, Hampton-street, and 395, Summer-lane, Birmingham, under the style of John Child Meredith, and to carry on the business of manufacturers of and dealers in cycles, motors, motor-cars, and vehicles of every description, etc.

WE have received a copy of the motor list of the Riley Cycle Company (Limited), Coventry, which gives illustrations and particulars of the motor-tricycles and quadricycles now being made by this concern. The motor adopted is of the De Dion type, the machines being described as British-made throughout. The springing of the front seat of the "quad" has been carefully thought out, so that when travelling on rough roads practically no vibration is felt. In view of the high finish of the machines, the Riley Company will no doubt meet the reward of their enterprise in engaging in the motor industry by a large demand during the coming season.

EARLY last year, we announced that Mr. Hans Renold, of Manchester, had decided to take up the manufacture of roller chains suitable for motor-vehicles, and we now learn that the first of the series, a chain of 1½ in. pitch, will be ready for the market next month, to be followed at an early date by chains of respectively 1½ in., 1 in., and ¾ in. pitch. Mr. Renold has devoted considerable attention to the question of producing a light but durable chain, and has, we understand, succeeded in obtaining a special quality of steel, which, combined with the use of hardened rivets, bushes and rollers, together with accuracy of manufacture, enables him to bring the new chain before the notice of motor-car builders with every confidence.

MR. H. W. VAN RADEN, of Ellys Road, Coventry, has sent us a copy of the price list of his special woven-glass accumulators for motor ignition and electric traction purposes. The cells are extremely light, and are claimed not to discharge themselves. Occasional high discharge is said not to damage the electrodes. Every accumulator is self-contained in a wooden box lined with rubber. The active mass is contained in a woven fabric, firmly holding it and preventing it from falling out. The plates are separated by a perforated sheet, making the whole a flexible mass capable of withstanding expansion and contraction. The accumulators are being made in a variety of sizes, ranging, for traction purposes, from a maximum charge of 7½ amperes, up to 70 amperes, and for ignition purposes from 4 volts with .10 ampere-hour capacity, to 2 volts and 40 ampere-hours.



## THE MORS MOTOR-CARRIAGE.—V.

—8—  
By "VELOX."

(Continued from page 701.)

## REGULATION OF THE IGNITION.

THE Société Mors, alone among those constructors who use electricity as a means of igniting the gaseous charges in internal combustion engines, pays no attention to that mobility of the time of ignition which many argue is the leading advantage to be attained by adopting electrical ignition. No attention whatever is paid to the ability to advance or retard the forming of the igniting spark: and complete contentment is found in so regulating "the sparking" that its period is constant at the designed point, viz., 18 mm. before the piston has completed the compression stroke. In other directions, however, the Société Mors sets a notable example in regard to the facility of obtaining current, utilising at will the storage batteries installed or the dynamo provided; and as the speed increases, taking the excess of current generated by the dynamo first to charge one set of accumulators, and, as the current generated continues to grow in excess of requirements, to charge a second set of accumulators. Indeed, it will be apparent, even to the most cursory observer, that the Société Mors has designed in its commutator switch an ideal method of control, and, in the application of electricity to the ignition of the gaseous charges of impulse engines, has set an example very difficult to be equalled.

The user of the Mors car has therefore no occasion to trouble himself as to regulating the ignition device whilst travelling: in fact, the only attention required to be paid is in regard to the proper utilisation of the means at his disposal for creating a "spark," which is of itself an interesting problem. The only "regulation" necessary, therefore, is to ensure that the "spark" is generated exactly at the point of the travel of the piston that the makers have laid it down is most advantageous for the successful operation of their engine. To adjust this regulation is by no means a difficult matter. All that is necessary is to properly comprehend the means of testing the adjustment that the makers place at the user's disposal. It is more especially to this end, therefore, that the present section is devoted.

On examining any one of the four cylinder heads comprising the motor, it will be found that there exists a small hole bored vertically through their walls, which in normal circumstances is closed hermetically by a screw plug. It is by means of this small

hole, and two other insignificant appliances, that it can be ascertained whether the "spark" is formed at the exact moment designed by the makers. There is another method of regulating the firing, but this is at the best but a makeshift, and it will not be dealt with, therefore, at present. To properly test the moment of firing it is necessary to remove the screwed plug, which normally rests in the explosion chamber, and to substitute therefor a rod, provided with a beaded or other head, whose length, from the under surface of this head to its other extremity, is exactly 18 millimetres longer than the distance between the exterior of the walls of the explosion chamber and the top of the piston when it has reached the full extent of its travel in an upward direction.

The Figs. 8 to 11 will contribute to a perfect understanding of the method to be adopted, and it will be wise to consider these figures in detail, representing diagrammatically the upper ends

of a cylinder, in which the only points to be considered are the position of the piston and the rod *T*, which has been inserted through the cylinder walls.

In Fig. 8 the rod *T* introduced rests the lower surface of its head against the cylinder walls, and the piston is in such a position that its upper end is not in contact with the lower end of the rod. In Fig. 9 the piston has so ascended that it is just in contact with the rod, but without raising it, the head of the rod still resting on the exterior of the cylinder walls. At this instant the distance to be travelled by the piston before completing its upward stroke is exactly 18 mm.

In Fig. 10, on the other hand, the piston has reached the extremity of its course, and has therefore pushed

the rod *T* to such a distance that the distance between the lower surface of its head and the outer surface of the cylinder walls is exactly 18 mm., as shown in the diagram; in Fig. 11 the piston has commenced its downward course, with the result that the rod *T* is again brought to such a position that its head rests on the cylinder walls.

The rod *T*, therefore, is a gauge indicating the position of the piston in the cylinder during its progress in completing the last 18 mm. of its upward stroke and the first 18 mm. of its downward or firing stroke.

If Figs. 12 to 15 be examined some further progress will have been made. In these figures the position of the piston and that of the various parts of the ignition device are considered together, of course diagrammatically. In Figs 12 and 13 the gradual progress towards the exact consummation desired is shown. In Fig. 12 the piston has risen to such a point that,

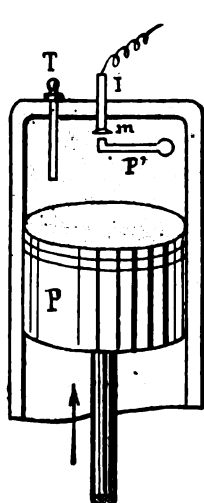


FIG. 8.

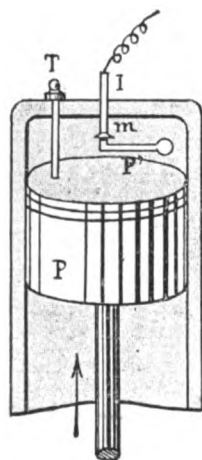


FIG. 9.

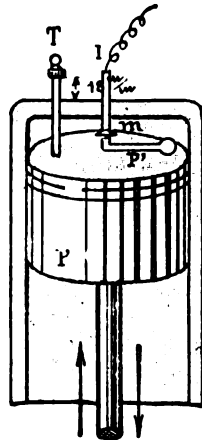


FIG. 10.

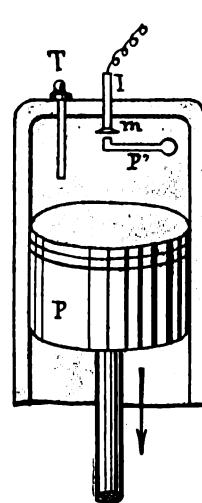


FIG. 11.

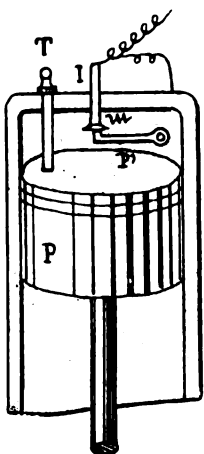


FIG. 12.

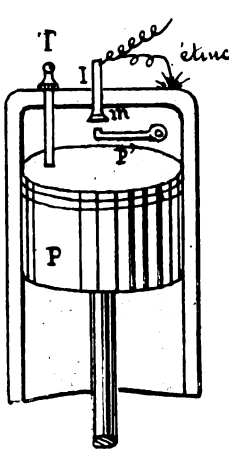


FIG. 13.

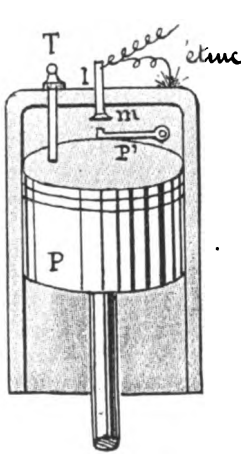


FIG. 14.

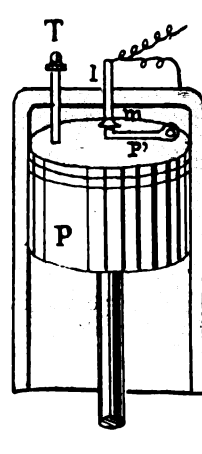


FIG. 15.

although in contact with the rod *T*, it does not raise it, in fact, it is in such a position as is shown in Fig. 9. If the ignition apparatus is perfectly regulated, the contact breaker *P'* will still be in contact with the plate *m*; and the electric current still pass through *I* and *P'* to the pivot and thence to the "mass," or earth, as previously explained. To test whether the adjustment of the firing device is exact, let us attach a testing wire to the exterior portion of *I*; if the adjustment is exact, the other end of this testing wire when brought into contact with the cylinder will not give a spark when the piston is in this exact position, the current still passing to earth through *I* and *P'*. In Fig. 12, however, the piston has travelled a small portion of the distance still required to complete its upward stroke, and it now begins to raise the rod *T*; the distance is so slight that no drawing of reasonable size will show it. But if the firing be well regulated, exactly at this instant—that is, exactly as the rod commences its upward travel—a spark is produced directly our testing wire is brought into contact with the cylinder walls. At the moment that *T* commences to be raised, the stem *ti* is also being raised by the cam on the cam-shaft, and therefore the lever *P* is raised, depressing the lever *P'*, breaking contact with the plate *m* of the ignition plug *I*, and therefore making a "spark," as the current passes no longer to mass owing to the air gap created. If a spark is produced at the terminal of the testing wire at this instant it proves that the moment of firing is perfectly regulated.

Let us suppose for a moment that the moment of firing is not properly regulated; it may be that the "spark" is produced too

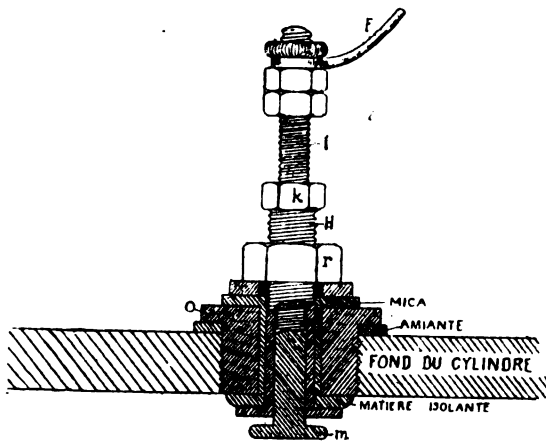


FIG. 16.

soon, or too late. Figs. 14 and 15 will at once demonstrate which of these faults occurs. In Fig. 14 we see that our testing wire produces a spark when brought into contact with the cylinder walls at that period when the testing rod *T* has not commenced to be forced upwards by the piston; that is to say, when it is in the normal position insured by gravity. It is evident therefrom that the spark is produced prematurely. This proves that instead of the current flowing to earth its path is interrupted too soon, and measures must be taken to prevent this. This is carried out by lowering the ignition plug *I*, so that its plate *m* is for a longer period in contact with *P'*; the means of affecting this will be shown later. In Fig. 15 it will be seen that although the testing rod *T* has been raised from its normal position considerably, yet no spark results from bringing our testing wire in contact with the exterior of the cylinder walls. This therefore proves that the spark is produced at a later period than that designed, and to correct this fault the ignition plug *I* must be raised slightly so that the contact between its plate *m* and the end of *P'* is broken at an earlier period of the movement of the latter.

It is obvious, therefore, to secure facility of adjustment of firing, that the ignition plug *I* should be so fitted as to be capable of being raised out of, or lowered into, the interior of the cylinder. This is arranged for as follows:—

#### ADJUSTMENT OF THE IGNITION PLUG.

From an examination of Fig. 16, it will be seen that a screw thread proceeds from end to end of the stem *I* of the spindle of

the ignition plug. The spindle *I* is covered with a tapped and threaded sleeve *H*, and *I* can be moved up or down therein as may be desired, the required position being maintained by the lock nut *K*. It will be seen in the front sectional view given in Fig. 16 that the sleeve *H* is in form somewhat like an inverted letter **T**; this is carried in a gun-metal sleeve *O*, though separated from metallic contact therewith by mica or other insulating material as shown in the sketch. *O* is threaded on its outer surface, and is hermetically fitted to the cylinder walls thereby, the walls, of course, being tapped to receive it, packing rings of asbestos or other suitable material being used to supplement the perfect fitting of the gun-metal casing with the cylinder walls. The nut *n* is used to keep the sleeve *H* in its proper position in relation to the gun-metal sleeve *O*. The wire *F* conducting the current is brought into contact with the ignition plug by means of terminal nuts as shown.

The adjustment of this ignition plug is, if a delicate operation, very quickly performed, and the only drawback to be found in regard to the utilisation of this means of adjustment in emergencies arises from the time taken to secure the necessary exactitude of adjustment. It is for this reason that those who have made the Mors vehicles a study have endeavoured to find a more speedy, if less reliable, method of adjusting the ignition in times of emergency, such, for instance, as whilst actually *en route*. In such an emergency the adjustment may be made by simply bending the lever *P* outside the cylinder walls in a downward or upward direction, thus advancing or retarding its being lifted by the rod *ti* when the latter is moved upward by the ignition cam. Many chauffeurs, indeed, content themselves with this method of adjustment, although it is at the best but a makeshift. They argue, and perhaps with reason, that the raising or lowering of the ignition plug may cause further trouble by the fact that the end of the lever *P'* is made to travel a greater or lesser distance of the arc of its movement, and therefore is made to strike a different point of the plate *m* of the plug *T*. There is reason in this argument from the fact that every spark generated by the making and breaking of contact between the extremity of *P'* and the plate *m* results in a small abrasion of the face of *m*. As a result an indentation is ultimately worn in the surface of *m*. If the plate *m* be raised or lowered, therefore, it may be that the end of *P'* will only be brought into contact with *m* at the extreme edge of the depression created; this results, of course, in imperfect contact. If, on adjusting the sparking device by the proper means, it be found that a noticeable depression exists in the surface of *m*, it is therefore better to re-polish the surface and so obviate any such imperfect contact as that mentioned.

(To be continued.)

THE American Electric Vehicle Co. has just been incorporated in New Jersey with a capital of £1,000,000 to manufacture all kinds of motor-vehicles.

AN automobile parade was held at Cleveland, Ohio, on New Year's Day. The display was witnessed by a large crowd of people, despite the cold weather. Electric, steam, and petrol cars were represented in the procession.

THE *Couch Builder's and Wheelwright's Art Journal* is doing good work in keeping the progress of the automobile before the notice of carriage builders, and in the first issue for the new year has inaugurated a new feature in the shape of coloured plates and working drawings of the carriage portion of motor-vehicles. The first automobile thus treated is a car of the Bollée voiturette type, the body being somewhat of a gig shape with a panelled seat similar to a mail phaeton.

WHAT is claimed to be the first automobile in America was built, according to one of the cycling papers, in 1843, by Mr. John S. Edwards, now living in Woodville, a small settlement, in Leicester, Mass. It was a steam-driven vehicle. Perched on a driver's seat on the front of his machine, Mr. Edwards, in the fall of 1843, appeared in the streets of Worcester, and ran his horseless carriage three times from the Old South Church to the old Salisbury mansion. The constable of the town of Worcester warned Mr. Edwards not to again appear on the streets.

## BY MOTOR-CAR FROM SHEFFIELD TO WORKSOP.



WHEN Mr. Claud Johnson, the courteous secretary of the Automobile Club, was good enough to invite me to travel with him, per motor-car, as far as Nottingham, I was suitably gratified. Perhaps the fact of my leaving him and the car at Worksop, or not a third of the whole journey, hardly looked grateful, but there were solid reasons for that decision, and my act was due to what is

popularly termed the first law of nature.

Three of us started, Mr. Johnson, Mr. Graham-White, and the writer, mounted on a Daimler motor-car of 17½ cwt., and handsome as a motor-car well can be. It is not the easiest thing in the world, as makers have found out, to make a motor-car pretty, or with such lines as would have suited the exacting designer of Sir Thomas Lipton's yacht. But this was a car on which it was a pleasure to sit, and which was followed by envious eyes as it made its way out of Sheffield when the great heart of our city was waking up. That is to say we started at eight o'clock a.m., a particularly desperate hour of the night to a weary pressman, but one which had to be submitted to in view to the sternness of of the order which had gone forth. We described a graceful and unnecessary circle at the foot of the station approach solely due to my neglecting the duties which had been imposed upon me of seeing the car safely out of Sheffield, and then, by a series of not wholly pleasant bumps, we traversed the wilds of Attercliffe and swarmed up Darnall Hill. Here I had the first of many proofs that the car was no glutton at hill climbing, and I could not avoid overhearing muttered remarks by my companions that "she was getting sulky." In truth our progress up a hill was not over rapid, but this was explained by the small horse-power which the car possessed. "Wait till you sit behind a twenty horse-power car, and then you'll see her fly all the hills she comes across," said Mr. Johnson enthusiastically. Down hill there was no doubt our Daimler was a terror to anything which happened to be in the way. We simply flew that long hill leading down to the Woodhouse station, scaring a sleepy carrier with our fog-horn, and again pulling up within half a dozen yards when an approaching leader seemed restive. Those downhill experiences were unquestionably the most exhilarating of the ride; they caused the shrill wintry wind to whistle more shrilly still past the ears, and made the blood flow more briskly through the veins, till one fairly glowed with health and happiness. Those of you who have coasted on your cycle down a three-mile hill somewhere in the south where such long, twisting declivities abound, can form some estimate of the experiences we had; those, too, who, in their frantic struggles, have tacked from side to side of giant Chapelton Hill from base to summit can realise the efforts which our tiny horse-power (in reality more like a pony-power) made to get up even such hills as abound between Sheffield and Worksop. That very awkward knob at Swallownest was a case in point, but at none of the hills did the game little motor give in; she surmounted them all, taking her own time, so to speak, and doing her work really admirably.

But when we reached the more level road, when we had done with the steep and there were no more hills to fly, we felt that cruelly keen wind even more than before. To add to its unpleasantness there came on a peculiarly chilling and bitter icy sleet, which though not lasting long, had the effect of reducing us to something approaching the attributes of animated icebergs. That was why I declined to go further with my companions when we had reached Worksop, and had found a safe and hospitable haven at the Lion. We had come down the gentle slope through Lindrick Common in magnificent style, and finished the brief run in a fashion which had, apart from the piercing cold, awakened in me the keenest desire to go to the end with my companions round by Normanton Inn,

Markham, Lincoln, and so to Nottingham. But when it came to a case of thawing one's self before the hotel fire at Worksop, and, with the knowledge that the same sleet and biting, nipping wind would possibly prevail all the remaining sixty miles, I struck. After all there were compensations. We sat down to a well-earned breakfast, and over that meal I had an opportunity of learning something of what my intrepid companions had been doing during the past two or three weeks in this country and Scotland on the same Daimler car which had carried us so well and caused such healthy interest and excitement everywhere we had passed. They had been preparing for the 1,000-miles trial of the Automobile Club, which is to be held in May next, and in the course of which Sheffield is to be visited on the 11th of that month. Many moving tales they had to tell, the recapitulation of which would take far more space than is at my disposal here. They took Shap, that fearsome wilderness in the wilds of Cumberland, one evening the week before Christmas. The journey was begun at five in the afternoon, and, though to Shap village is only sixteen miles and a bit over, it was ten o'clock before they reached it. That was because of the snow, and yet the car, behaving splendidly, only succumbed to about twenty yards of the very stiffest portion. Coming south from Edinburgh they had an unhappy experience, as the roads were covered with hard, frozen snow, in which the heavy traffic had worn deep and unyielding ruts. And as the car pushed its way along there came those terrific side-thrusts which every motorist knows, and which almost result in the prompt unseating of all but the most experienced and the most wary. The journey into Sheffield was made by way of Bradford, Wakefield, Barnsley, and Pitsmoor, and I was asked almost with tears in the speakers' eyes whether there was not a better approach from the Bradford side than that. I pointed one out, and it may be that this other one will eventually be used when the members of the club make their grand progress south. Many stories of men in high places was I regaled with, who are taking up the motor car as a means not only of pleasure but also of business. I heard of a very prominent politician, who in his time has filled the highest places in the Cabinet, and who was so much enamoured of the new propelling power when first he tried it, that he has become amongst its warmest adherents. He happens to be a member of the Urban Council in the town where his residence is, and that sapient body had been discussing the policy of ending anything like a speed for motor-cars when travelling through their district. But when this particular Urban Councillor was taken through his own town thoroughfares at a rate of close upon twenty miles an hour, and was asked how he was enjoying the experience, his answer was "Very much; cannot we go faster?" From this the ambition of his fellow Councillors to restrict speed to something akin to a pedestrian's will meet with scant approval at his hands. Then I heard of Mr. Walter, one of the proprietors of the *Times*, and whose new-born enthusiasm for the pastime is very strong; Mr. Scott-Montagu, M.P., whose car is the glory and delight of automobile circles in town; a well-known newspaper proprietor, who collided with a cart, and dissolved partnership with his motor-car in a manner at once undignified and abrupt; and of a score of other men who have become recent and enthusiastic members of the club, and converts to the charm and utility of automobilism.

I may be asked whether I was satisfied with the degree of vibration, with the smell and the rattle. So far as the latter goes, it is manifestly difficult to estimate the precise amount of noise which a machine such as a motor-car is making when one is on it. The smell was hardly noticeable, save when, through the breaking of the box underneath, we were once or twice enveloped in steam. Certainly at other times there was nothing to grumble at in the smell. And the vibration? Well, it may have been possible for a landau or a brougham to have taken us at the same rate over those roads with as little unpleasantness, but I am bound to doubt it. Vibration there was very little, practically none in fact; and a pleasanter ride, apart from the inclemency of the weather, I had not had for many a long day. Indeed, it seemed to point to a well-appointed motor-car being the most luxurious road carriage which is at present available, and that—the opinion also of my companions—

will very probably become a general one in due course. The drawback to automobilism is the present cost of the cars, and a price varying from £400 to £1,200 is one which necessarily places the possibilities of the sport outside the reach of the vast proportion of the public. Mr. Johnson is of the opinion that, before long, the cost will show a marked reduction, but that automobilism will ever reach the sphere of practical possibilities for all is very much open to question.—*Sheffield Daily Telegraph*.

## ELECTRICAL IGNITION FOR DAIMLER-PHÉNIX MOTORS.

**L**A SOCIÉTÉ COMMERCIALE D'AUTOMOBILES, of 77 bis, Avenue de la Grande Armée, Paris, has lately introduced a system of electrical ignition for Daimler-Phénix motors in place of the lamps and incandescent tubes. Fig. 1 shows the location of the sparking plugs *B* on the

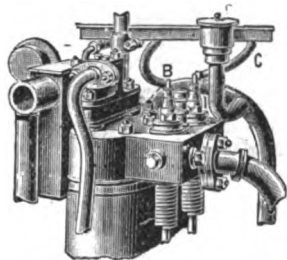


FIG. 1.

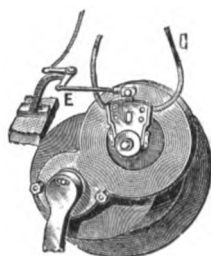


FIG. 2.

explosion chamber above the exhaust valves, the burners being still in position on the opposite side. Fig. 2 illustrates the device for advancing or retarding the period of sparking carried on the cam shaft near the starting handle. Fig. 3 gives the details of the same, while Fig. 4 shows the circuit-breaker situated near the lubricator. One of the wires from the accumulators is connected up to the induction coil, while the other runs to the switch which is placed in front of the driver. The two wires from the induction coil, which is a double one, are connected up to the spark varying device. The latter comprises two touch pieces *G* of hardened steel carried on springs and bearing on a fibre

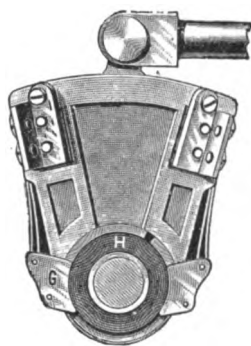


FIG. 3.

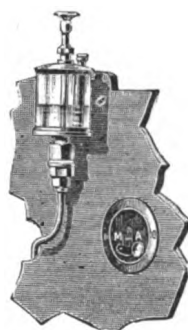


FIG. 4.

ring *H*, the circumference of which is surrounded by a ring of phosphor bronze. This latter ring is broken at two points, and the section thus insulated is placed in contact with the mass of the motor by a screw, which, passing through the fibre ring, bears on the cam shaft. The new ignition device, which has been devised by M. Monnier, is made by Messrs. Bassée-Michel and Co., and is stated to have given good results in practice. We are indebted to *La France Automobile* for the illustrations.

THE next house dinner of the Automobile Club is to be held on Wednesday, February 14, when the Hon. J. Scott Montagu, M.P., will read a paper on "General Aspects of British Automobile Manufacture."

## THE YORKSHIRE CYCLE AND MOTOR-CAR SHOW.

THE third annual exhibition promoted by the Bradford and District Cycle and Motor-Car Traders' Association was opened on Saturday last, in the Drill Hall, Belle Vue, Manningham Lane, Bradford. Motor cycles and cars were a notable feature of last year's show, and this year a marked advance is observable in this section of the exhibition, which, together with the motor trials, serve to illustrate the steady progress that automobilism and the motor industry are making in Yorkshire and the north of England.

Mr. Ernest Flower, M.P., who was introduced by the secretary (Mr. A. House), performed the opening ceremony. He was told there had been a very interesting competition in uphill driving of motor-cars that afternoon, and that one of the judges, Professor Goodman, would announce the results. They must all feel, who attended last year's exhibition, that the motor-cars exhibited that day showed a very marked improvement in the industry. He did not suppose the motor-car had got anywhere near perfection yet, and he was hopeful that it had not, because he must frankly confess that he had not yet found in motor-car riding quite the exhilaration and delight he obtained in driving behind a couple of spirited horses. He was, nevertheless, sure that both for purposes of commerce and of the pleasure the motor-car had come to stay.

It should be explained that the trials of heavy vans took place, as mentioned in our last issue, on Tuesday last, from Bradford to Kildwick and back, while those for lighter vehicles were held on Saturday afternoon, prior to the opening ceremony. The course was from Manningham Lane, by Queen's Road, to Peel Park, and back. It included some stiff gradients, and at least three very sharp turns. The total distance was about two and a-half miles. The gradients on the outward course were as follows:—400 yards, descent of 1 in 11; 100 yards, 1 in 19; 300 yards, 1 in 85; 700 yards, ascent of 1 in 17; 200 yards, 1 in 8; and 300 yards, descent of 1 in 28.

Professor Goodman, who, with Mr. Cyril Lupton, officiated as judge, in announcing the awards, said that the trial of the heavy waggons to Kildwick and back took place over very heavy roads, and that many obstacles had to be overcome.

No. 1 car—that of Mann's Patent Steam Cart and Waggon Company, Canning Works, Leeds—made in every respect a thoroughly satisfactory trial, climbing the hills in magnificent style, and stopping and starting promptly. The car was very easily manipulated, and was taken into a yard at Keighley and out again quite as easily as a horse and cart could have been taken. He had therefore to announce that Messrs. Mann would receive a gold medal and certificate for their car, which, both for carrying heavy loads along common roads and climbing steep hills, had proved most satisfactory. Motor-haulage of heavy loads on common roads had now passed far beyond the experimental stage; it was as reliable as horse haulage, and very much cheaper. The cost of the coke used on the trial mentioned was a mere nothing, the amount consumed being just over 2lb. per ton of merchandise per mile.

Professor Goodman stated that the car was laden with four tons of wool in bales; that it also carried four passengers, including the driver; that it did the outward journey at a mean speed of 5.4 miles per hour of actual running time, and the return journey at an average speed of 4.75 miles per hour. But for the very heavy state of the roads, he added, the speed would have been much greater, and on good roads the driver could easily run up to the maximum allowed by the law. Another motor-car was sent by Messrs. Coulthard and Company, of Preston, but an unfortunate accident prevented it from completing the journey.

He next came to the trials of the lighter cars which had taken place that afternoon. The vehicle of the North of England Motor Company, Aire Street, Leeds, was fitted with a Benz motor of the usual type. It did not get very successfully through the trial in climbing the hill, because of some carbon that had got into the igniter. It was a very little thing, and it simply required a little cleaning, and the car would have gone off again quite satisfactorily; but as it had affected the trial, he could not make any award in this case. The "Jackson" Doctor's car, sent in by the Yorkshire Motor-Car Company, Bradford, did not get through quite successfully, for it stopped twice when going up the hill of one in eight. However, the manner in which it stopped and started again was so satisfactory that he felt quite justified in awarding it a bronze medal and certificate. The motor-driven waggonette of the North of England Motor Company, Leeds, which was also fitted with a Benz motor, went through the trial without a hitch, taking the one in eight hill and turning the corners in splendid style. He must congratulate the driver on the manipulation of the vehicle, and in this instance had to award a silver medal and certificate. A Panhard-Levassor vehicle was sent in by the Hon. C. S. Rolls, Monmouth, but owing to the water-circulating pump failing, it was not able to do the hill climbing in the style in which he would have liked to have seen it done. He ought to add that it was a privately-owned vehicle, that it had been put away over the winter, and was only put together again at three o'clock that morning. He had to congratulate Mr. Scaife, Mr. Jackson, and Mr. David Darley (who drove the steam lorry) on their skill in driving, and to state that the last-named would be awarded a special certificate.

The automobile exhibits at the show include Coulthard's steam waggon, the steam lorry of Mann's Patent Steam Cart and Waggon Company, Limited, Leeds; several of the Daimler Company's cars; the Humber M.D. sociable car, tricycles, and quadricycles; several "Jackson" Doctor's cars and "Mytholm" cars and cycles by the York-

shire Motor-Car Company, Limited, Bradford; Riley motor quadricycles, Royal Enfield motor-quadricycles, and a number of cars and cycles by the North of England Motor Company, Leeds.

### BRITISH MOTOR SYNDICATE AND GREAT HORSELESS CARRIAGE COMPANY v. J. TAYLOR AND SONS.

IN the Chancery Division of the High Court of Justice, on Tuesday, Mr. Justice Stirling heard an adjourned summons in this action. Mr. Moulton, Q.C., and Mr. Walter represented the plaintiffs, and Mr. Hume Williams, Q.C., the defendants. In the action the plaintiffs complained of the following alleged breaches—viz., that subsequently to the date of the letters patent and prior to the issue of the writ the defendants had used, sold, and offered for sale gas motor engine starting apparatus constructed after the manner described in the final specification of the letters patent (Lanchester's patent), but that the said gas motor engine starting apparatus was constructed and had been used by the defendants in infringement of the first, second, and third clauses of the specification above referred to. The plaintiffs complained particularly of thirty gas motor engine starting apparatus constructed as above mentioned, and purchased by the defendants from Messrs. Richter and Green. It appeared that the defendants had admitted the sale (in Paris) of seven, and the users of one; and on these admissions the plaintiffs proceeded, without fighting out the whole case, and took a judgment for damages and costs in respect of the admissions made. The defendants paid £30 into court, and submitted that that sum was more than sufficient to answer the claim for damages, and that the claim for £10 for each breach was more than the plaintiffs were entitled to.

His Lordship reserved judgment.

### THE MOTOR AGENCY CO. v. RIDGWAY.

THIS was an action brought in the Coventry County Court last week to recover from the defendant, a motor-cycle and motor-car dealer, of Edgbaston, Birmingham, the sum of £5 13s. 0d., being the balance due for a motor-tricycle. There was a counter-claim of £15 2s. 3d. Mr. Maddocks appeared for the plaintiff company, and defendant was represented by Mr. S. R. Masser. The defendant alleged that the company supplied him with a motor-tricycle which was guaranteed to be perfect, but which was deficient in certain accessories, and was of no use. He had paid £20 on account of the machine, but refused to pay the balance until he had received the missing parts.

Cross-examined by Mr. Maddocks, defendant said he had never received the machine; only a part of it.

The workmen in the employ of the defendant corroborated as to the guarantee given by a Mr. Crouch, plaintiff's representative, that the tricycle would be complete.

Mr. Crouch, manager of the plaintiff company, stated that he sold the defendant a "scrap" motor in order to give defendant's two workmen some experience in putting it together. He sold him a complete motor and tricycle, without the ignition.

Mr. Masser and Mr. Maddocks having addressed the judge at some length on behalf of their respective clients, his Honour gave judgment for the plaintiff company on the claim, and dismissed the counter-claim.

### THE MOTOR TRADES ASSOCIATION, LIMITED.

WE have received the rules of the Motor Trades Association, Limited, of which Mr. H. J. Lawton is the president for 1900, with Mr. J. H. Gretton as hon. treasurer, Mr. G. H. Smith as hon. sec., and the following gentlemen as the committee:—Messrs. S. Begbie, C. T. Crowden, A. Eadie, S. F. Edge, C. Friswell, S. Gorton, J. H. Gretton, H. H. Griffin, W. M. Hodges, C. Jarrott, A. F. Mulliner, M. S. Napier, C. H. E. Rush, A. Shippey, C. Sangster, and F. O. Seyd. The rules are as follows:—

I. The name shall be "The Motor Trades Association."

II. The objects shall be:—

- (a) To promote and protect the interests of the Motor Trades and allied Industries.
- (b) To give facilities to members to meet together with a view to discuss matters of interest to the trade, and when thought desirable to decide on the course of action to be pursued.
- (c) To encourage British inventors to introduce improvements of practical value to British-built motor-vehicles and appliances of a kindred nature by such means as arranging meetings and conferences of members at which inventors can be invited to explain and illustrate their inventions.

III. The members of the association may comprise all persons or firms engaged in the manufacture of, or who deal in motor-vehicles or essential parts thereof, subject to election by the executive committee.

IV. The subscription shall be £1 1s. per annum, payable in advance on 1st January of each year.

V. The business of the association shall be managed by an executive composed of a president, and not more than five vice-presidents, and a

committee of not more than twenty members, who shall all be elected annually at a meeting called for that purpose, and shall continue to act until their successors are appointed. The office of president cannot be held for a longer consecutive period than twelve months. The committee shall have power to fill up any vacancy which may occur.

VI. A special general meeting of the members must be called on receipt by the secretary of a requisition signed by not less than ten members, representing ten different firms. Such notice must state clearly the business to be brought forward. The committee are empowered to call a general meeting at such time and place as they may determine. Not less than ten days' notice to be given of a general meeting, such notice to be sent by post.

VII. At all general meetings every member who has paid his current subscription shall be entitled to vote.

VIII. The president or presiding chairman, as the case may be, shall have a casting vote, besides his ordinary vote, at all meetings of the association.

IX. Five shall form a quorum at general meetings or committee meetings of the association.

Alterations, additions, or recissions of rules shall only be made at a general meeting, after due notice has been given by the secretary.

### A MOTOR-CAR ACCIDENT.

AT the Coventry County Court last week the case, John Smith v. G. R. Ormerod, was heard. The plaintiff in this action, a carrier living at Rieton, near Bulkington, sought to recover from defendant, motor-car driver, Edgewick-street, Foleshill, the sum of £12 14s. 0d., as damages for personal suffering caused, it was alleged, by defendant's negligent driving of a motor-car. Mr. Maddocks was for the plaintiff and Mr. C. J. Band represented defendant. The case for the defendant was that whilst he was making a call on the Stoney Stanton-road he was knocked down by a motor-car driven by defendant and his ankle injured. As a result he was disabled from doing his work for seven weeks and had to employ a man to do it at 22s. per week. He therefore claimed £7 10s. paid for assistance in his business, and £5 damages for personal suffering, etc. Two witnesses were called in support of plaintiff's case. Defendant stated that he was passing between a tramcar and a baker's handcart when plaintiff got in front of the motor-wagonette which he was driving. He (defendant) sounded his horn and slowed up, but as plaintiff attempted to get on the pavement he slipped and fell, and the wheel of the car pinched plaintiff's foot against the kerbstone.

At this point the Court adjourned, and the further hearing of the case was left over to the February sitting.

WE are requested to announce that February 1 is the last date for the receipt of entries of vehicles for the Automobile Club's 1000-mile trial, without a payment of extra fee.

AT a meeting of the Treasurer's Committee of Edinburgh Town Council last week it was agreed to grant the use of the Waverley Market on May 3rd for the holding of an exhibition of motor vehicles in connection with the 1000-mile trial of the Automobile Club.

THE Automobile Association, Limited, of Princes Road, Holland Park Avenue, London, W., inform us that they are sole agents for the Gaillardet motors and two-speed gear in the United Kingdom, also for the new Gaillardet car, the "Doctress," of which the first car is expected to reach this country next month.

WE have this week received a copy of the *Automotor and Horseless Vehicle Pocket Book of Automotive Formulæ and Commercial Intelligence for 1900*. This is the third edition of the work, and its usefulness is, if anything, increased by the several additions and alterations which have been made to its contents. Space prevents us from mentioning even a tithe of the many subjects dealt with; but we note, in glancing over it, the regulations regarding the lights to be carried by motor-vehicles, a chapter on "Signs of Weather," which will no doubt be useful to many *chauffeurs*, as will probably also be the table of moonlight nights. In what we may term the mechanical portion of the book, we notice that several illustrations of petrol motors and carburettors have been introduced, useful additions having also been made to the steam and electrical sections. One useful portion of the work is the directory of automobilists and constructors of motor-vehicles, this extending to nearly 100 pages. The book concludes with a glossary of automobile terms in three languages, English, German, and French, and can be recommended as a useful addition to the reference library of all interested in the automobile movement.



# THE Motor-Car Journal.

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## COMMENTS.

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IT appears probable that at least twenty-five motor-vehicles will be entered in the manufacturers' section of the forthcoming 1,000-mile trial. We learn, for instance, that the Daimler Motor Company will enter five vehicles, the Motor Manufacturing Company six, Mr. Edge will enter his 16-h.p. Napier car, the De Dion-Bouton Syndicate two De Dion voituresses, Messrs. Hewetsons

two Benz cars, the Ariel Cycle Company one of their tricycles, Mr. Cheel an Ariel tricycle with trailer. There will also be a small Panhard carriage, a Gladiator voituress, and probably a Simms tricycle, a Simms small carriage, two Lanchester cars, a Marshall car, the Locomobile Company's steam vehicle, and carriages entered by the London Motor Van and Wagon Company, Stirling's Motor Carriages Limited, and the Edinburgh Autocar Company. In the amateur section there will be between fifteen and twenty vehicles. We are asked to state that the list of entries closes at noon on Thursday next, February 1, except by payment of a supplementary fee.

### Motor-Tricycles for the Front.

LAST week we were able to record some little advance by the War Office in the direction of automobilism. It is gratifying to know that, in addition to the tape-bound officials of Pall Mall, many of the officers in the army are taking a lively interest in the subject, and that the Motor Manufacturing Company, Limited, have supplied three motor-tricycles for use in South Africa, where they will be employed for despatch riding, in which capacity they should prove their worth. Some few days ago, at a meeting of the committee of the Automobile Club, a letter was submitted from Mr. E. H. Clift suggesting the formation of a Volunteer Motor-Cyclists' Corps. It was directed that Mr. Clift should be informed that, in view of the present pressure on the War Department in connection with the war, the committee thought it would not be advisable to approach them now in regard to a motor-cyclists' corps for Home Service; but that Mr. Clift might do well to communicate with commanding officers of volunteer regiments. We do not know how far the suggestion has been acted upon, but the fact that motor-tricycles are now on their way to the front shows that Mr. Clift's prompting was along the right lines.

### A War Office Awakening.

WHILE official experts lag behind, private enterprise is becoming increasingly confident, and a young Cambridge undergraduate, Mr. John Moffat, of Somerby House, Oakham, recently conceived the idea of taking out to the war a motor-car, armour-plated, and armed with a couple of quick-firing guns. His friends, with a lack of belief in War Office adaptability which now appears to be unjustified, assured him he would never obtain official

permission. Instead of which, Lieut.-Colonel Robb wrote from the War Office to the effect that "the Army Board are highly sensible of the patriotic spirit in which the offer is made, and are prepared to accept it, subject to its approval in detail by the Royal Engineers' Committee, with whose secretary, Major E. R. Druitt, Chatham, you are requested to put yourself in communication at your earliest convenience." Mr. Moffat has done as directed, and the result of the experiment will be watched with interest.

### Trouble in Belgium.

IT would appear that the intention expressed by the Automobile Club of Belgium to draw up a series of regulations for the government of automobile racing in that country has not met with universal favour among Belgian societies, the Liège Club even going so far as to threaten secession from the premier organisation. If only clubs would put these comparatively small matters on one side, and by the exercise of a little patience avoid these injurious squabbles, both the industry and the sport would make more rapid progress, and we should hear less outside criticism.

### Artists and Automobilism.

A LADY—Miss Frances S. Carlin, of New York—makes an appeal for an automobile for artists upon which they can quickly reach desired nooks of the landscape and avoid many of the present inconveniences of outdoor sketching. The dusty road, the wet grass, the high winds that reverse umbrellas, and other incidental annoyances are mentioned, and Miss Carlin suggests that an automobile should be built specially to meet the needs of artists. It should be open in front, and have a parasol or hood suspended, with places under the seat for colour boxes and other necessary impedimenta. "The cost should be low enough to bring the trap within the means of the most impecunious artist." In the last sentence is the whole difficulty; for we are afraid there are comparatively few artists who would tell the income-tax collector that they were outside the category.

### Motor-Cars and Light Railways.

LAST week we chronicled the common sense view of automobilism taken by the Bridlington Rural District Council, owing largely to the arguments of Mr. A. W. Bosville, J.P., who is frequently seen driving a motor-vehicle in the locality. One or two points in his speech deserve consideration, and both with regard to light railways and the encouragement of manufacturers we are in entire agreement with the Bridlington J.P. He said they heard lately a good deal about light railways, and he ventured to prophesy that if they did not come in that district within the next year or two, the motor-car would in all probability drive the light railway out of the field. Mr. Bosville pointed out that seven-tenths of the capital required for a light railway would be spent on the permanent way and keeping it in

order, and he argued that if they would provide light locomotives which would traverse the high roads at three-tenths they would not be a greater nuisance nor more dangerous than a light railway running beside the highway. He urged that if they gave the motor-car manufacturers a fair chance of experimenting, they might get the means of transit desired, but that if obstacles were put in the way of those vehicles, they might find themselves without a light railway and without motor-cars.

#### Electricity vs. the Petrol Motor for Automobiles.

SOME years ago when automobiles were a novelty a discussion arose as to what form of motive power was best adapted to the propulsion of automobile vehicles. The advocates of the petroleum-spirit motor claimed that it was much more reliable than any other form of power, while the adherents of electricity defended the storage battery with equal tenacity. The question was again brought up at a recent meeting of the Franklin Institute in Philadelphia. There were present several well-known experts who defended or pointed out the numerous advantages of the vehicle-propelling power in which they were interested. One speaker prophesied that the future automobile would be a cheap and light electric vehicle. He admitted that the batteries were heavy and required strong construction in the carriage; also that the cost of pneumatic tyres and their maintenance was a serious consideration, but he claimed that these difficulties were gradually being surmounted; that lighter batteries would make their appearance and that the tyre question would be solved.

#### An Opponent of Electricity.

ANOTHER well-known inventor expressed the belief that the present experience in the practical use of automobiles had shown that the electrical vehicle had a limited field of usefulness. In his opinion the weight of the batteries could never be reduced to any great extent and still retain their efficiency. He predicted that within the next ten years petrol motors would be used on heavy freight wagons and that 80 per cent. of all the self-propelled vehicles would be run by petroleum spirit.

#### A Needless Discussion.

DISCUSSION on the relative advantages of electricity and petrol as an automobile motive power will probably go on for years to come. That each type has its advantages and defects goes without saying, and we are inclined to agree with *Electricity of New York* that the ultimate result of unlimited argument on the subject will simply go to show that each form of motive power has its own special sphere of usefulness to which it is far better adapted than any other. Thus the future may see electrically-operated automobiles plying in city streets, while mineral spirit motor-carriages will probably be made use of principally for long country runs.

#### Motor-Omnibuses Wanted in America.

MR. MILTON B. OCHS, representing a party of summer residents of Walden's Ridge (a suburb of Chattanooga, Tenn.), writes to the *Horseless Age* to the effect that he is in the market for a motor-omnibus, capable of accommodating fifteen passengers, and in addition from 500 to 750 lbs. of baggage. A rough specification of the desired vehicle is appended, from which we take the following:—"Motive power.—We think petrol the most practical for our purpose, considering that main part of trip is in country where electricity is not available. Distance to be covered.—From Chattanooga to Walden's Ridge—fourteen miles—to which may be added six miles to cover various residences off the main roadway. In leaving the city in evening the vehicle would be subjected to a round trip covering thirty miles, one-half of which would be made in the evening and the remaining half the following morning. Cost.—We want price on machine

delivered in Chattanooga set up for work and accompanied by an expert who will operate for three or more trips. Guarantee.—Manufacturers to demonstrate the practicability of the vehicle for the work, and to guarantee for at least one year against failure of any working parts by ordinary use."

#### A Race for Voiturettes.

THE small cars will evidently be liberally catered for in the matter of races during the forthcoming season in France, as yet another event has to be added to the already lengthy list. This additional *course* will be organised by the *Journal des Sports*, and will take place on March 11, over a route from Paris to Rouen and back, the outward journey being made by way of Pontoise, while the return will be *via* Mantes. It may be remembered that it was over this route that the race for the *Coupe de Périgord* took place last spring. The distance is 240 kilometres, or 150 miles. Certainly more attention is now being paid in France to the voiturette class of automobiles than to any other type of vehicle, and manufacturers are making strenuous efforts to produce that ideal small car for which the public is so eagerly searching. What racing has done for the larger class of car it will probably be able to do for the voiturette, so the organisation of many *courses* is to be heartily welcomed as conducive to the perfecting of the "baby" automobile. Many of the voiturettes that one saw in last year's big exhibition in Paris never appeared in a *course*, and the public were able to draw their inferences accordingly. Let us hope that by the end of this year's racing season many types of small cars will have been so improved and have rendered such good accounts of themselves in the various competitions that the public will know exactly where to go for a reliable small vehicle.

#### A Motor-Car Case at Norwich.

ELSEWHERE we reproduce an extract from an eastern counties contemporary, of a case arranged by the Norwich Law Students' Society with the desire of assisting the local war fund. It will be seen that the alleged incident around which the interest centred took place on a motor-car trip, and this must be regarded as further evidence of the hold which automobilism is obtaining in the county of Norfolk. In fact, the eastern counties are taking very kindly and very strongly to the new locomotion, and the law students who amused their friends in the way set forth on another page are to be congratulated on their ability to read "the signs of the times," all of which point to the universal popularity of the motor-car.

#### Motor-Car Services in Scotland.

ONCE more the subject of a motor-car service between Rosehearty and Fraserburgh has been revived. The Town Council of Rosehearty are expected to take the matter in hand, and, states the *Aberdeen Evening Gazette*, the inhabitants of the burgh may hope to soon have a service. One idea of the promoters is to form a small limited liability company for the purpose of carrying out the scheme. It is suggested that if some of the motor-car companies were to place one of their vehicles on the route between Rosehearty and Fraserburgh for a few days, and thus afford a practical demonstration of their worth, no doubt ways and means would be found whereby a purchase might be effected.

#### Motoring Attire.

AFTER the discussion as to suitable clothing for motorists, which recently took place in our columns, comes the following description of what our contemporary the *Tailor and Cutter* considers the correct attire for men-motorists:—"A d.b. reefer, cut moderately easy-fitting in the body, and fastening up to the throat, the neck being finished with a Prussian collar, the ends of which are placed under the top button, thus keeping it in place. Welt pockets are

inserted in the forepart vertically, thus enabling the wearer to use them with greater ease than would be the case with the ordinary breast pocket. Flap pockets are added to the hips, and the edges are finished with double stitching. The material selected is a herring-bone Cheviot of some dark colour, it being necessary to bear in mind that the material must be one that will not readily show dust or oil stains. The sleeves are finished with a tab, which, when desired, can be fastened over in such a way as to bring the sleeves quite close to the wrist, a very necessary provision, seeing that the arms are constantly exposed for the steering and general manipulation of the car."

#### An American View of Automobile Progress.

In the course of an article reviewing the general progress of engineering in 1899, the *Scientific American* remarks that, "unquestionably the greatest advance in transportation is that recorded in the field of the automobile, which is evidently destined to enjoy a popularity as great as, and certainly more lasting than, the bicycle. There has been a noticeable and very gratifying improvement in the general appearance of the latest styles of automobile which have made their appearance during the year, and the constantly accumulating experience is leading to marked improvement in the motors. The field is no longer all but exclusively occupied by the gas engine and the electric motor; for the improvement in steam engines has been so great as to promise that this long established, well understood, and easily managed form of power may yet become the most popular for the automobile, with compressed air a possible rival. The speed and 'radius of action,' to borrow a naval term, of the automobile have seen a truly remarkable increase during the twelve months. We look for the industry to make very rapid strides during the present year."

#### Motor-Cars for India.

A CORRESPONDENT of *Indian Engineering* describes in glowing terms the progress of automobilism in France, America, and England, and points out that "In India none of the restrictions which hamper the people at home in the matter of weight and loads of motor-cars exist, and most of our bridges are strong enough to bear any reasonable weight; so it would not be a bad speculation for a company of wealthy shareholders to start motor traction over long distances. At the average speed rates of our passenger and goods trains, such a company would doubtless succeed in securing all the patronage they needed, and they would certainly make the venture a most paying success. Such a company will have no trouble about any expensive permanent way, nor will they have to build any costly bridges. They will also have no need to make long and needless pauses at roadside stations, so that they will be able to convey their passengers and goods at a greater average speed than the slow-moving trains, which now occupy so much time in transshipping and transit that goods are really delivered very slowly. In the winter time, too, sight-seers would be glad to use the motor-cars in preference to the railway trains, because of the better country views they would secure, which they never could have from the windows of a railway carriage. It will also afford them opportunities to stop and visit places of interest in a way too delicious to describe. The great fairs and *melas* of India, too, would furnish ample patronage for the motor-car, and would appeal more to native taste and predilections. The fact that up-to-date camel cart travelling pays immensely in many directions is another indication of the assured success which would meet the introduction of motor-cars into this country."

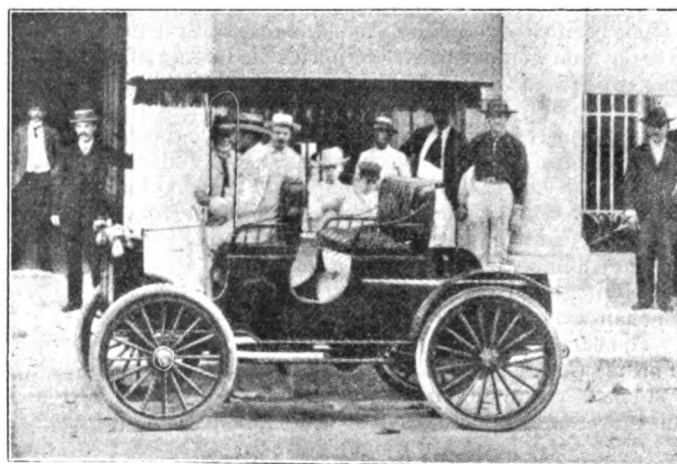
#### Motor-Cabs in Paris.

It will be remembered that the yellow automobile cabs placed upon the streets of Paris only plied for hire at ordinary *fiacre* fares during a very short time, their numbers being subsequently removed and the classification of the vehicles changed to that of first-class carriages. In this superior category they may still be hired by arrangement with the

driver just as the first-class horse-drawn carriages are, but at a price in no way comparing with the modest charge made for the use of an ordinary *fiacre*. La Compagnie Générale des Voitures de Paris has now, however, placed in circulation four motor-cabs, numbered in a similar manner to the ordinary cabs, and destined to ply for hire upon the same terms. These four vehicles will be followed by twelve others before the end of the month, and it is said to be the company's intention to have fifty available by the opening day of the Exhibition, as well as sixty first-class automobiles. The new cabs are distinctly smart in appearance and correspond exactly in colour with the horse-drawn vehicles. They are painted a dark green picked out with red, and bear the name of the company in gold letters. They are said to have a capacity of about thirty-one miles, and are geared to a maximum speed of ten miles per hour. It is sincerely to be hoped that they do better than their yellow predecessors, and can maintain their position in the ordinary *fiacre* category. Our Paris correspondent writes:—"Personally, I must confess to being somewhat sceptical as to the result, as Paris is a city fairly severe for this class of cab work, and the fares in force with the horse-drawn vehicle are very low. The charge during the daytime for a drive of any distance within the fortifications is only 1s. 3d., while an engagement by time only costs 1s. 8d. per hour, to which prices a small *pouchoire* for the driver should be added. I believe that the electric cabs will experience difficulty in running at these rates, especially during the early days when only a limited number of them are in circulation, and the working expenses are proportionately heavier."

#### Automobiles in Cuba.

UNDER a charter granted by the State of New Jersey the Havana Automobile Transfer Company has been organised with a capital of 500,000 dols. It is worthy of mention, from the fact that it is the first American company actually working on long-distance routes and carrying passengers, mails, and ordinary traffic. Starting from Havana, five routes are worked—two along the coast and three inland to Guines,



ONE OF THE VEHICLES OF THE HAVANA AUTOMOBILE TRANSFER COMPANY.

Bejucal, and Guanajay. One of the first passengers on the new cars—which are of the Haynes-Apperson type—was Gomez, the leader of the Cuban people during recent troubles, and everyone in Cuba seems interested in their advent. And well they may, for there is no railway connection between the towns, all the traffic has hitherto been carried by mule carts, and the mail coach takes passengers only at exorbitant rates.

A MEETING of the Board of Governors of the Automobile Club of America was held in New York a few days ago, when Mr. George F. Chamberlain, who is acting President, stated that plans for an annual dinner had been outlined, and future runs, the country club house, charging stations, and other matters considered, but that no dates had been fixed.

## FRENCH AUTOMOBILISM IN 1899.

(From Our Paris Correspondent.)



FROM its birth the French automobile industry has advanced by leaps and bounds, quite overshadowing in the rapidity of its growth the records achieved by many of France's largest and most important trades, and to-day even threatening to take precedence of all, at no far-distant date, as the premier industry of the country. Any opposition that it met with in the earlier days has long since been swept aside by the irresistible current of public opinion, fostered by a legislation well disposed

towards the industry and a press practically unanimous in its support. Without experiencing any set-back of a serious nature, the industry had continued unfalteringly its rapid forward march until the beginning of 1899, and in reviewing the record of the past twelve months even the most ardent and impatient advocate of automobilism cannot be otherwise than satisfied with the progress made, both from an industrial and a sportive point of view, for it is a progress even more marked than that of any previous year.

The general public may not entirely realise the magnitude of the advancement made from an industrial point of view, but for one who has occasion to continually visit the establishments of those engaged in this great business, the change effected in the condition of affairs during the last twelve months is truly remarkable. Progress is seen in every direction. Very many of the old-established manufacturing concerns now possess large works, and all of them, certainly, have increased facilities of construction, thus commanding a correspondingly greater output than they had a year ago. Numbers of entirely new associations have entered the ranks of automobile constructors, and the bustle and activity in their factories betoken no lack of orders. Cycle manufacturers and carriage builders, especially, have not been slow to realise the possibilities of the new industry, and to-day one would experience difficulty in finding a firm in either of the two trades which has no interest in automobilism. Several of the leading carriage-building firms have enlarged their factories or allotted increased space to the automobile branch of their businesses during the past year. Indeed, the old-time aspect of several establishments has now completely changed for that of an engineering shop. And, keeping pace with these increased facilities for construction, greater attention has been bestowed upon the all-important question of design, and one has now an infinitely larger selection of handsome types of vehicles to choose from than was the case twelve months ago.

The excellency, too, of workmanship is quite on a par with the beauty of design. Since the commencement of 1899, the employment of aluminium and partinium in the construction of bodies for the better classes of automobiles has become universal, and a very great saving of weight has been effected. So much for the carriage builders. The spread of the industry among cycle manufacturers has been of even greater extent. Large firms, small firms, companies, and societies, all have their interest in the movement, and seek to find in it an augmentation of the revenue so sadly diminished by the depression in their own particular trade.

Turning from the growth of the industry, let us look for a moment at the vehicles themselves. Are they better designed and more reliable than those which were making their initial runs in January, 1899? Are they more perfect in conception and better finished than their predecessors of a year ago? There can be no doubt about it. Certainly 1899 has not been a year of sweeping improvements in the mechanical details of the vehicles produced, but the improvements that have been effected are sound and substantial, and generally speaking follow the lines of those that have gone before. New systems in plenty have been placed upon the market, but they follow existing principles, and

the revolutionary vehicle destined to supersede all types still lurks in the background.

The mechanical progress made during the year has had, however, the effect of very materially increasing the safety and reliability of the automobile, whether it be a racer or a tourist, or whether it be propelled by steam, oil, or electricity. The fear of being frequently *en panne* need not trouble the mind of the hesitating purchaser, for, given care and attention, his car will but seldom, if indeed ever, play him false.

The public demand for the *voiturette* has been one of the features of 1899, and certainly more attention has been given by manufacturers to the production of a small, light carriage than to any other type of vehicle. The Tuileries exhibition demonstrated the manufacturers' knowledge of the trend of the public's taste, for *voiturettes* were to be seen everywhere, and if any proof were wanting the *Salon du Cycle* at the close of the year afforded it. Here one saw every conceivable type of small car. Given a reliable and stylish little vehicle, with two seats side by side, and selling at a price not greatly in excess of that at present charged for a quadricycle, one would speedily see the extinction of the latter class of automobile.

From the industrial let us turn to the sportive side of the question and see what has been done in the past year. Expressed briefly, the racing automobiles of to-day are capable of ascending grades averaging 8 per cent. at a speed not greatly inferior, and in one category even superior, to that at which they travelled on the level a year ago. On December 18th, 1898, a series of speed trials took place over a level kilometre course at Achères, while on December 3rd, 1899, a race took place at Gaillon over a similar distance but mounting an average grade of 8 per cent. The time made by Rigal, who won in the motor-cycle section of the 1898 race, was 1min. 20 $\frac{1}{2}$ sec. Villemain, in 1899, ascended the kilometre of hill in 1min. 16 $\frac{1}{2}$ sec. In 1898 Marot, mounted on a touring motor-cycle, made 1min. 42 $\frac{1}{2}$ sec. over the Achères course, and in 1899 Bardin, on a similar type of machine, mounted Gaillon in 1min. 36 $\frac{1}{2}$ sec. At Gaillon, the Vallée car beat by over a minute the time made by the racer of M. Lefebvre, which had previously bettered the record made by the winning car at Achères on the level. No, the enormous increase of speed obtained during the past year cannot be doubled, for in every race during the season exceptionally fast figures have been set up.

One other feature of the year has been the tremendous increase of members of the automobile clubs already established, and the large number of provincial clubs which have sprung into existence. These latter are doing good work by popularising the sport in different parts of the country, and over all there reigns supreme the "A.C.F." with its ever-increasing roll of members, and its far-reaching power.

Automobilism in France has progressed in 1899!

MR. JAMES DUCKWORTH, a cycle chain maker of Springfield, Mass., has turned his attention to motor-car chains, and is now making a 1 $\frac{1}{2}$ -inch pitch chain.

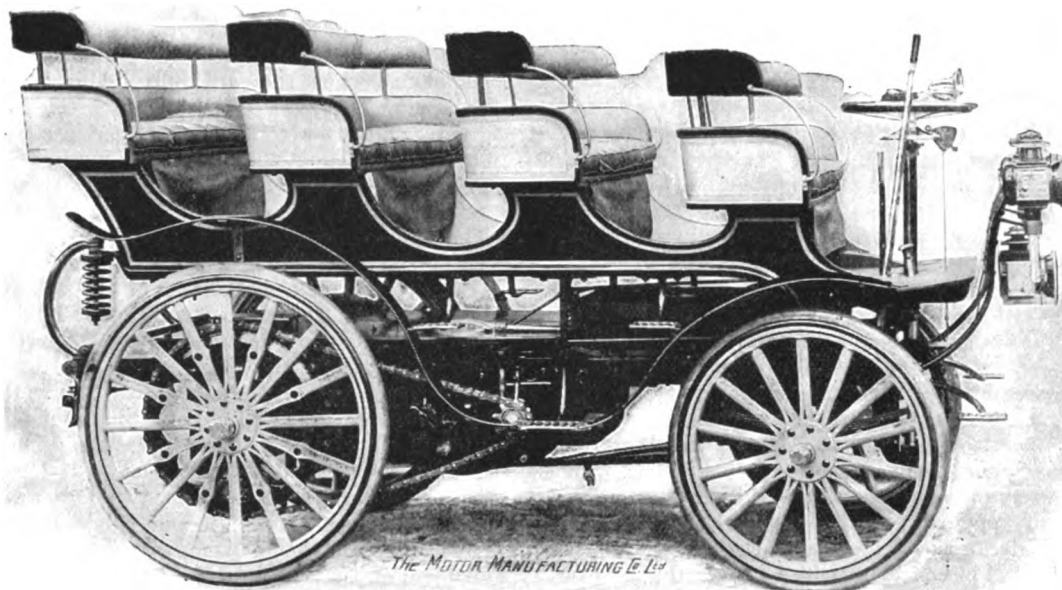
THE Epping Rural District Council has adopted a resolution asking the Local Government Board to pass regulations with regard to the speed of motor-cars.

MR. FRANK F. WELLINGTON, 36, St. George's Square, Regent's Park, N.W., has sent us an example of a useful binding case he has got out for the purpose of filing the *Monthly Motor-Car Register and Advertiser* issued by him.

At the last meeting of the Denbighshire Standing Joint Committee it was decided to support a petition to the Local Government Board in favour of amending the Locomotives on Highways Act, 1896, with the view of compelling motor-cars, etc., to be registered and carry numbers.

MR. ROBERT E. PHILLIPS, of 70, Chancery Lane, W.C., writes as follows:—"I am endeavouring with one or two other members of the Automobile Club to find stabling accommodation for motor-cars in the west district of London. I shall be glad to hear from anyone requiring such accommodation in the west district, approximate to Oxford Circus, and willing to join in."

# The "Balmoral" Motor Char-à-Banc.



THE accompanying illustration depicts the new "Balmoral" char-à-banc, which has just been completed by the Motor Manufacturing Company, Limited, of Coventry and London. The car, which has been built to the designs of Mr. George Iden, the manager of the company, is capable of seating sixteen persons, and is fitted with a two-cylinder horizontal petroleum-spirit motor, capable of working up to 11 b.h.p. The engine is fitted with water-jacket and with tube or electric ignition as desired, the motor of the vehicle illustrated being provided with the first-named method. No pump is provided in connection with the water-circulation, this being effected by a new thermo-syphon system. The petrol is gravity fed to the motor, while the burners are supplied from a separate pressure tank. The motor is arranged on the left-hand side, at the rear of the frame, the explosion chamber end of the engine being at the back; the exhaust box is located at the right-hand side, with the variable-speed gear forward of the latter.

As regards the transmission gear, four forward speeds—3½, 6, 9, and 12 miles per hour—as also a reverse motion, are provided. The power of the motor is transmitted by spur gearing—forming the variable speed gear—to a differential countershaft, and from the latter to the rear road wheels by duplicate sets of sprocket wheels and chains. The variable gear is so arranged that the various pairs of the spur wheels—which are of gun metal—are always in mesh, the requisite pair being brought into action by means of a "feather." The four forward speeds are controlled by means of a small hand lever working on a quadrant mounted on the steering standard. The control of the reverse motion is a special feature, this, as compared with many cars, having been greatly simplified. To drive the car backwards the forward-speed hand lever has only to be put in the dead centre point of the quadrant, when, by pulling over another lever, the car immediately begins to back and stops immediately the driver leaves go of the lever.

The motor and transmission gear is entirely enclosed, and are thus protected from dust and dirt. The protective casing is, however, so arranged that the working parts are readily accessible, while the location of the burners at the rear of the car, where they are protected from the wind, is claimed to overcome the trouble of extinguished lamps. Another point to which special attention has been paid is that of lubrication. The

lubricator, which is of a new type, is not located in the dashboard, as usual, but below the body, it being controlled from the steering standard. The lubricator is provided with as many oil-conveying pipes as desired, the opening of each pipe being adjustable. When the passages have been adjusted to allow the desired amount of oil to pass, no further attention is required, the whole of them being controlled by a small lever working on a quadrant on the steering standard, this lever being so arranged that it can vary the opening of the different passages exactly in the proportion originally determined one to the other.

Steering is controlled by a hand-wheel, mounted either on a vertical or inclined standard. The steering mechanism is of a special irreversible kind, it being impossible to move the road wheels except by the hand wheel, while any inequalities of the road traversed, which may tend to cause the front road wheels to deviate from their designed course, are not transmitted to the hand-wheel, thus relieving the driver's hands of much strain. The whole of the motor and its appendages—petrol and water tanks, etc.—and the transmission gear are suspended from a substantial steel framing, special care having been taken to maintain constant the fixed distance between the shafts and the various parts; it will be noticed, too, from the illustration that the rear road axle and the countershaft are in the same horizontal plane. Another feature of the method of fixing the motor and transmission gear is that the centre of gravity is very low down, thus rendering it, the makers claim, almost impossible for the car to be turned over.

The "body" is entirely independent of the frame on which it is suspended by helical-compression and C springs on the George Iden system. It is arranged to accommodate sixteen passengers in four rows of four seats, the rows being arranged in tiers, to allow the rear passengers to see over the heads of those in front. The road wheels, which are shod with 3in. rubber tyres, rest in horn blocks and plates, and are in addition provided with helical compression springs, this arrangement, combined with the suspension of the body, reducing to a minimum the amount of vibration, due to the inequalities of the roads traversed and to the pulsation of the motor, transmitted to the passengers.

The petrol and water tanks have a capacity sufficient for a non-stop run of 120 miles; they are located in the fore part of the frame, and in front of them is fitted a water-cooling coil of



special design. All the control gear—variable-speed, lubricator, governor, and the pressure pump for the burners—is mounted on the steering standard. The car, which complete weighs about 32cwt., has already been satisfactorily tried, successful runs with a full load having been made from Coventry to Leamington and back, *via* Kenilworth, on Friday and Saturday of last week. We understand that the company has already orders in hand for no less than twelve vehicles of the new type, the delivery of which has to be made by April 1st next.

## MIDLAND MOTOR NOTES.

By "HERCULES."



### A Motor-Tricycle Kit Bag.

THE motor-tricyclist who goes a-touring unprepared for emergencies is a very hazardous person, and will often find himself in an awkward position. On the other hand, the difficulty of packing in a small compass the various accessories and tools that may be required has led to many necessary parts being left at home, to the despair of the rider when a breakdown occurs. Recognising this, Mr. Henry Waterson, of Birmingham, has brought out a motor-cycle kit bag which will probably be seen on many machines during the coming season. It is neat in appearance, and measures 11 in. by 7 in. by 4½ in. It is made of sheet steel and covered with black leather, this being in one piece. The end forming the lid overhangs the sides, so as to effectually protect the contents against damp and wet, while the material of which the bag is made guarantees strength and durability, as well as the impossibility of it getting out of shape.

### The Contents of the Bag.

MR. WATERSON is making the bag fitted with twenty-six compartments, for the reception of various tools, etc. To the trade he supplies a list of these, so that the bag can be ordered empty, fitted complete, or with just the number of tools and parts required by the customers. This adaptability to the requirements of anyone is a point which should do much to popularise the speciality. I have seen one of these bags completely filled, and was struck with the ingenious utilisation of the small space allowed. Within the lid is a 10-in. inflator, a brush for the sparking plug, screw-driver, and three or four other tools. On one side are boxes for nuts, washers, etc.; and other accessories include two De Dion sparking plugs in a boxwood case, a densimeter for testing petrol, exhaust valve, combination cutting pliers, a Dunlop or Michelin repairing outfit, a watch-pattern ampere-meter for testing the battery, and altogether twenty-six necessary tools, the whole kept from shaking by the addition of a piece of selyt and a pair of cleaning gloves. Mr. Waterson will shortly bring out a kit bag for motor-cars on similar lines.

### The Star Motor-Car.

ON the occasion of a recent visit to the works of the Star Motor Company, Wolverhampton, I noticed eight cars almost ready for despatch to customers, while a number of others were nearing completion. Hitherto the company have confined themselves to one type of car, but before long they hope to introduce another design.

### The Midland Cycle and Motor-Car Show.

BINGLEY HALL is now for the fourth successive year the scene of the Midland Cycle and Motor-Car Exhibition, which commenced yesterday, the 25th inst., and will remain open until Saturday, February 3rd. Though the number of exhibitors is not so large as formerly, several of the leading cycle firms who have not exhibited at Birmingham before have taken space on

this occasion. An attractive feature of the show is the fine display of motor-vehicles, most of the chief manufacturers having secured space. These include motors of all classes, from the light and speedy tricycle and quadricycle to the heavy carrier vans for business purposes, but the chief interest will doubtless be centred in the light passenger motor-cars for private use. That motoring has made great strides during the last year or so is evident by the immense number of cars that are now to be seen running through the public streets, and the skilful manner in which they are controlled in congested thoroughfares by their owners. The question of efficiency is of far greater importance than that of speed, and it is with the object of putting the exhibited motor-vehicles to thoroughly practical tests that the Committee have decided to organise a series of road trials and hill-climbing contests during the show. The route chosen is from Birmingham to Coventry and back. Awards will be given to those vehicles which come most successfully through the ordeal. The first trials take place to-morrow, the 27th inst., starting from Ringley Hall at 12 o'clock, and will be confined to motor-tricycles. On the following Tuesday the trials will be for quadricycles, light motor-cars to carry two passengers, heavy passenger cars to carry three and upwards, and carrier vans, starting from Bingley Hall at 11 o'clock. The hill-climbing trials will take place on Thursday, February 1st, the course being Mucklow Hill, near Halesowen. For the purpose of giving the press and the judges an opportunity of witnessing the behaviour of the competing vehicles *en route* the Motor Manufacturing Company of Coventry have placed at the disposal of the directors three of their motor-wagonettes which are capable of carrying ten passengers each, and they will also run several cars for the use of the public from Birmingham to Coventry and back during the show week, so as to give them an opportunity of practically experiencing the delights of motoring.

AT Trenton, U.S.A., there has been registered the Mexican Electric Vehicle Company, with a capital of £10,000, for the manufacture of automobiles, especially in Mexico.

AT the eighteenth annual meeting of the Institute of British Carriage Manufacturers, held at the Westminster Town Hall, Mr. Percy Preston, of London, was elected president, and Mr. Andrew W. Barr re-elected secretary.

WE are glad to hear from Mr. Charles H. E. Rush that, as a result of a year's working, his company, the London Autocar Company, Limited, 182, Gray's Inn Road, London, W.C., have earned sufficient profit to pay a 10 per cent. dividend. The company propose to devote themselves as before to supplying the trade and public with all accessories, component parts, castings, as well as well-known makes of motor-tricycles, quadricycles, voiturettes, etc.

A COMPANY is reported to be in course of formation to erect charging stations for electric automobiles throughout Pittsburg and Allegheny, and to operate a general motor-vehicle livery. A building is being erected in the first-named city that will be capable of housing forty to fifty automobiles. It is the intention to have owners of automobiles keep their vehicles in the stable, and upon telephone call the automobiles will be taken to the owner's residence as liveried carriages now are. A gas engine and dynamo will be installed so as to charge the batteries of electric vehicles; gasoline vehicles will also be cared for as well.

THE Indiana Bicycle Co. of Indianapolis, U.S.A., have lately constructed an electrical brake. It accommodates nine persons comfortably, and is handsome and attractive in appearance. The motive power is furnished by a storage battery carried within the body. The weight, ready for the road, is about four thousand pounds. The running gear is of tubular construction, while the wheels are wood with solid rubber tyres. It is well equipped with brakes, there being two, one of which is operated by hand and applied to drums attached to the rear wheels. The other is operated by the foot, and is applied to the periphery of the drum of the compensating gear, located on the motor-shaft.

## CORRESPONDENCE.



## THE DE DION MOTOR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—The legitimate traders throughout the country will, we are sure, rejoice with us that Messrs. De Dion-Bouton have at last taken active steps to protect their patent rights. The sale of nominally cheap and distinctly inferior motors of the De Dion type, often sold, we are sorry to say, as the genuine article, is certainly making it extremely difficult, to say the least, for respectable firms to carry on an extensive trade in the genuine De Dion motor. At the recent exhibition in Paris, Messrs. De Dion-Bouton seized all motors belonging to six different types, including the "Automoto," manufactured by Messrs. Chavanet, Gros and Pichard, a motor manufactured by Brissart, another manufactured by Dalifol and Thomas, the "Soncin" motor and the "Werner." This last, we understand from our Paris house, was not identical with the patent secured by a firm in this country, but relates to certain improvements in the "Werner" that have been copied from the De Dion motor.

We believe that Messrs. De Dion, having once started, propose to energetically carry on the campaign on behalf of their supporters in every country where they have obtained patent rights. This will be extremely welcome news to all those firms, who, having had experience of cheap imitation motors, are very loth to saddle themselves with all the trouble and responsibility that such form of trading entails.

Yours faithfully,

64 and 65, Holborn Viaduct, G. H. SMITH,  
London, E.C., January, British Manager,  
20th, 1900. United Motor Industries (Paris).

## DRIVING CHAINS FOR MOTOR-CARS

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I have seen with interest your report of the paper "Electricity on Common Roads," read by Mr. T. H. Parker before the Automobile Club on the 10th inst. As frequent allusions were made, both in the paper and the discussion, to my chains, I feel sure you will allow me a few remarks on this subject. The class of chain in question is my "Silent" driving chain, which has been, and still is, so largely used on heavy motor-cars. It is there used because it allows of great power transmission with a short pitch, and thereby making a fair speed ratio between large and small wheel possible without the wheels getting too large. This class of chain, when substantial shaft centre stays are provided to keep the centre distance rigid, and when properly protected from the road mud, has everywhere given satisfaction, and its smooth running has been particularly commented upon. These provisions Mr. Parker properly met, and could therefore speak with such satisfaction as he did, as could also a great many of my other customers who have adopted similar precautions, and allowed ample strength for the work in hand.

Now, Mr. Oppermann has made some remarks based upon the experience gained by the late London Electric Cab Co. I am quite ready to admit that my Silent chains in that company's service have not given the same satisfactory result, but the reasons are not difficult to explain. 1st. There was absolutely no protection from road grit, and the large wheels being unusually large, the chain was very near to the ground. 2nd. Considerable alterations in the motor speeds were made from what they were at the earliest experimental stages, and with these alterations the style of chain and size of wheels should also have been altered. My advice was not taken, and I did not press the change, being assured that the chain was satisfactory and that other points, such as tires, etc., required attention for the present much more than the chain gear. I can only wish I had made a firmer stand and actually refused to supply the Silent chain any longer, knowing as I did that under the conditions roller chains would give better results in their case. 3rd. The chain used was latterly far too weak, as the cabs increased in weight step by

step, until at last they reached 35 cwt. and more. I am afraid I should take up too much of your valuable space if I attempted to explain why, under certain conditions, the roller chain is preferable to my Silent chain for light motor-car driving. The construction of each chain would have to be described, in order to show why one gives better results under certain conditions than the other and *vice versa*. For light motor-cars there can be no doubt that a well-made roller chain is the best, and far preferable to the block chain which is still so often used. For this reason I have designed a series of larger sizes, and am preparing machinery to produce them in the same high quality as my  $\frac{1}{2}$ -inch and  $\frac{3}{4}$ -inch cycle roller chains. The designing and making of these new manufacturing machines has been in hand for nearly eighteen months, as the special metals used bring special difficulties which must be met.

During next month both the  $\frac{1}{2}$ -inch and  $\frac{1}{4}$ -inch pitch will be ready for the market, and will soon be followed by the  $\frac{3}{4}$ -inch and 1-inch pitch. I have every confidence that with these new chains I shall be able to eliminate altogether the chain troubles which, with the lighter motor-vehicles, have so far been always present. I need hardly say that the wheels, also, must be of correct construction, accurately cut and properly mounted. To make sure of these points also, preparations are made to supply correctly-constructed tooth-wheel cutters to enable manufacturers to cut their own wheels, or for me to cut their blanks.

3, Brook-street, Manchester,  
January 18th, 1900.

Yours faithfully,  
HANS RENOLD.

## EXCESSIVE SPEED IN PARIS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In view of the excessive speed of motor-vehicles in Paris, and the accidents that have resulted therefrom, it behoves all English drivers of motor-cars to keep within legal limits as regards speed. In several cases accidents have occurred solely through automobiles being driven at too great a speed. I am quite certain if English motorists value the freedom they now possess, they must do all they can to keep it, by complying with the regulations now in force.

Yours truly,  
London, N., 22nd January, 1900. NOVICE.

"AN Editor" who has just published a book on "How to write for the Press" advises would-be journalists to keep cuttings about "motor-car mishaps."

THE Drill Hall at Bristol has been secured for the exhibition of the vehicles taking part in the Automobile Club 1,000-mile trial, from the evening of 23rd April to the morning of 25th April at 10 a.m.

THE Leach Motor-Vehicle Company of Everett, Mass., U.S.A., have sent us a neat little booklet in which their automobiles are described. The Leach car is steam-driven, particulars and illustrations being given in the list of a two-seated phaeton with hood, a four-seated mail phaeton, and a steam delivery van.

BUT little is heard about compressed-air automobiles, yet according to an American contemporary there is a concern in Hartford, Conn., known as the Autocrat Manufacturing Company, which turns out a compressed-air carriage that weighs about 1,350 pounds. The air is compressed to a pressure of 2,500 or 3,000 pounds to the square inch, and is stored in cylinders placed in the bottom of the carriage and covered by a false bottom. The cylinders are built to carry a pressure 3,700 pounds per square inch, with a proper factor of safety. A single lever governs the motor, steers the carriage, and also applies the brake. Another brake is so connected that a slight turn of the wrist, while the hand is on the steering lever, causes a powerful air brake to act automatically in setting a hand brake on the motor shaft. A reducing valve is provided by means of which air is delivered to the engine at 200 pounds pressure. The engine is so designed that it can be made to act as a powerful brake, by compressing the air contained therein.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### Timing the "Mile" at Nice.

FROM a letter published recently in the *Automobile Revue*, it would appear that M. Louis Mors, a member of the committee and the official timekeeper of the Automobile Club of France, intends to be present at the Nice week, and will take the times made by the various competitors in the "course du mille." In order to obtain absolute accuracy he proposes to run a telegraph wire along the whole length of the course, and connect up to two chronometers, one placed 609 mètres from the start and one at the finish. On giving the signal to start a button will be pressed, so setting the two watches in motion, and enabling the exact time to be recorded. This will avoid any possibility of similar claims to those of last year being made by dissatisfied competitors.

### A Trip to Nice.

EFFORTS are being made by the Count Biscaretti di Ruffia, the president of the Automobile Club of Turin, to form a large party of Italian *chauffeurs* to drive through to Nice for the celebrated week, and so return the visit made by the members of the Automobile Club of Nice to Turin some time ago. The route to be followed will probably be that of Cuneo-Limone, and many Italian motorists have already entered enthusiastically into the idea.

### Racing Rules for Austria.

A PERUSAL of the racing regulations prefaced and issued by the Automobile Club of Austria reveals no new features of importance, as they are modelled upon the lines of those drawn up by the Automobile Club of France. All *courses* held in Austria this year will be governed by these regulations.

### Motor-Car Racing Track.

THE much-talked-of project to lay out a course for automobile races would appear to be taking some form at last, for *La France Automobile* announced that such an "automobilodrome" is to be arranged near the town of Arles, in the plain of Crau. The proposed course will measure about four and a-half or five miles, and will be comprised of a number of roads. The construction of such a course would permit of one's seeing almost every phase of an automobile race, and would undoubtedly be the means of drawing together large crowds of enthusiastic followers of the sport.

### Petrol in Italy.

IT is reported from Italy that the members of the Automobile Club of Turin, the Automobile Club of Milan, and the Automobile Club of Venice have decided to take united action with a view to establishing petrol stores at regular intervals on all the principal Italian roads, and I understand that the three clubs are already in correspondence on the matter. At present the scarcity of petrol depôts is a source of great inconvenience to the *chauffeur* who tours in Italy, and if this scheme of establishing stores at intervals of twenty miles on the main roads be carried into effect the country will be rendered infinitely more accessible to the automobilist.

### News from the South of France.

ON the 17th instant, at the headquarters of the society, 42, Allées d'Orléans, the Automobile Club of Bordeaux held a general meeting of members, at which the following officials for the current year were elected:—President, Dr. Creuzan; vice-president, M. Lanneluc-Sanson; committee, MM. Daugaron, Hanappier, Hivert, Rodet, Minjeaud,

Walton, Gondouin, Jacquart, de Barry, and Versein. It was decided to hold the race from Bordeaux to Périgueux and back during the Whitsuntide holidays, and the meeting had under consideration various other projected *courses* and excursions, particulars of which will be published in due course.

### An Artificial Grade.

I LEARN that the Serpollet Company has constructed in proximity to their shops in the Rue Stendhal, a street of the Menilmontant "quartier" of Paris, an artificial hill of 19 per cent. gradient, on which are to be tested the various automobiles manufactured by the company. The idea is an excellent one, and it is curious that other constructing firms have not adopted it long ago, for even when natural hills exist in the vicinity of a works, they are often unsuitable for testing purposes by reason of constant traffic or other causes. One of the Avenue de la Grande Armée firms rejoices in a capital gradient leading from the *garage* to the street, but this was not built expressly for the purpose of testing cars.

### Italian Automobile Clubs.

THE Automobile Club of Milan, one of the leading organisations in Italy, has recently held a general meeting of members, at which assembly the following officials were appointed for the current year:—President, Baron Albert Franchetti; vice-president, Count Auguste Lurani; inspector, Guillaume Bressi; treasurer, O. Odorici; committee, Sir Frederick Johnson, Commander Joseph Spatz, and the Marquis François Dal-Pozzo. Members have been notified that next month a general meeting will be called for the purpose of altering certain of the rules of the club. Following the excellent example set by Rome and Florence, the automobilists of Naples have now decided to form a club in their beautiful town, and already the preliminary steps have been taken. More automobile clubs would appear to be springing into existence in Italy at the present time than in any other European country.

### Fate of a Projected Motor-Car Service.

THE formalities of the Customs and the "Octroi" are a perfect bugbear to the *chauffeur* travelling on his car through Europe, and it is to be hoped that sooner or later the leading automobile associations will see their way to taking united action with a view to simplifying existing conditions. Those automobilists, for example, who live just outside the fortifications of Paris, and who are constantly passing in and out of the city, have to put up with much trouble and loss of time through the necessity of making a declaration as to the quantity of petrol carried on their car every time the "Porte" is passed, and many have been the letters written to the Parisian papers as to the possibility of remedying this evil. But recently an instance of Customs red-tapism has been reported, which has had as its result the stoppage of what might have proved a very excellent industrial undertaking. It appears that a service of motor-omnibuses was about to be inaugurated between Sedan and Bourillon, the latter town being situated in Belgium, although two-thirds of the projected route was on French territory. For this reason the French Customs authorities demanded duty on the petrol employed by the motor-vehicles as fuel, and the promoters of the scheme preferred to abandon the idea entirely rather than comply with this extortionate order.

### The Swiss Automobile Club.

IT is to-morrow, Saturday, that there takes place the general meeting of the members of the Swiss Automobile Club, and not the least interesting item on the agenda will be that relative to the races proposed to be organised during the forthcoming season. At the present moment only two are set down for decision—one, reserved for members of the club, the

route of which has not yet been settled, and the other an international race from Geneva to Aix-les-Bains, returning to the former town by way of Saint-Julien. In order to ascertain the intention of members with regard to these proposed *courses* the club committee recently issued a circular demanding—1. Do you expect to take part in our races of 1900? 2. With what vehicle? 3. State name of constructor, type of motor, horsepower, weight in travelling order, maximum speed on level, and number of places. 4. What system of classification do you prefer? The Swiss Club includes in its ranks so many enthusiastic automobilists intimately acquainted with the work involved in the organisation of races that the *courses* above mentioned will be, undoubtedly, excellently arranged, and I hope that several English *chauffeurs* will decide to participate.

#### Another Condemnation.

JULY 14TH, of each year, witnesses in France the celebration of the "Fête Nationale," and all the world is busy enjoying itself on that day. It was, no doubt, due to a superabundant supply of holiday joyousness that a certain Parisian motor-cyclist knocked down a woman as she was crossing the Rue Clignancourt on the occasion of the last celebration of this fête, a performance which has since resulted in his being condemned to one month's imprisonment, and mulcted in the sum of £22, £20 of which amount goes to the victim of the accident as compensation for injuries sustained. In a case of this description the sympathies of the witnesses of the mishap are invariably with the good lady, and the recklessness of the *chauffeur* is condemned in the strongest of terms. But practical motor men and cyclists know only too well the eccentricities of the majority of women when crossing the street. There are very many varieties of types, ranging from the head-strong lady who, suddenly deciding to pass to the other side of the thoroughfare, grabs her skirts firmly in one hand, and, waving an umbrella wildly in the other, scurries unerringly into the track of an approaching cycle, to the other extreme, the timid lady, whose bird-like darting about in the middle of the road is a terror and a perplexity to *chauffeurs* and cyclists alike. Perhaps our automobile friend of the 14th July was not so much to blame after all.

#### Traffic Regulations.

THE furious driving indulged in by a certain section of *chauffeurs* is bringing about the issue of severe regulations in all parts of France, and the continued agitation by the Parisian public for the introduction of some method to permit of the identification of automobiles is now apparently to receive response by an order of the Prefect of Police compelling all motor-vehicles which are geared to a speed exceeding 30 kilomètres, or about 19 miles per hour, to carry identification numbers. These numbers are to be sufficiently large to permit of their being easily read when the vehicle is travelling at full speed, and their size will, therefore, depend upon the speed capacity of the car. In the case of a small vehicle, a cycle for example, travelling at a very high rate of speed, the effect of this regulation may possibly lead to the practical smothering of the machines with a placard, and in the future we may see our Beconnais, Rigals, and Tests seated on racing cycles with but their heads showing above the all-surrounding labels! And at night, what is to happen? Will racing cars be required to carry lamps of the size usually displayed outside a London gin-palace and ornamented with huge numbers? For the public seeking information at the start or finish of a race the system would have its advantages, for no longer would it be necessary to gaze at motors, pinions, and sprocket wheels to obtain some idea of a car's capabilities, but with a foot rule one could measure up the size of the numbers displayed and speedily ascertain the exact figure. After a short space of time adepts would be able to tell at a glance whether a car was a 40, 50, or 60 kilomètre per hour specimen, and would immediately notice that a *chauffeur* had changed his sprocket pinions by the alteration in the size of his

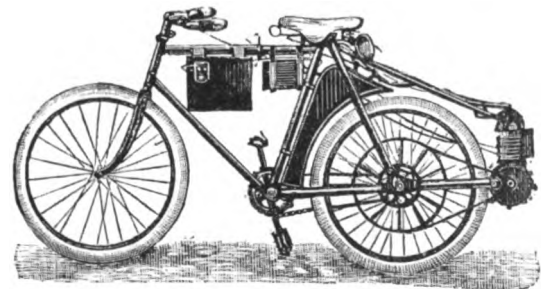
placard. Automobilists would eventually lose all recollection of names and would invariably refer to one another as No. "so-and-so." But the authorities of Paris are not likely to carry into excess any law that they may adopt for the government of the circulation of automobiles, and one may rest assured that their regulations will be moderate. *La France Automobile* states that the suggestion to abolish the horn as a signal of warning meets with the approval of M. Baudin, the Minister of Public Works, but I have not seen that this proposition is to be carried into effect. Objectionable as it undoubtedly is, the horn will probably have to remain with us until some more harmonious signal has been introduced, and to attempt to cross Paris without it on an automobile would be more than the most patient of men would care to undertake.

#### The Gordon Bennett Challenge Cup.

THE Race for the Gordon Bennett Cup, which is to be held on the 14th of June, will take place over a course between Paris and Lyons. It is probable that the direct route will not be followed throughout, as it is not sufficient to satisfy one of the regulations of the race, viz., that the distance should not be less than 550 kilomètres.

#### The Pernoo Motor-Bicycle.

I AM able to send you herewith an illustration of the Pernoo motor-bicycle lately brought out by M. Pernoo, of 114, Rue Oberkampf, Paris. As will be seen, the motor is fixed in a vertical position behind the rear wheel, where it is supported by a prolongation of the chain stays, and by a tube connecting it with the seat pillar lug. The engine, which is of 1½ h.p., weighs 18½ lbs., and is provided with electrical ignition. Cooling is effected by radial fins, which are solid with the



cylinder. The power is transmitted by a belt to a light pulley attached to the rear wheel. There is nothing except the battery to load the machine down in front or interfere with the movements of the rider, the combined petrol tank and carburettor, which has a capacity sufficient for a run of 100 kilomètres, being ingeniously arranged in the back frame. The pedals are the same as usual, serving merely as foot rests after the machine has been set in motion, there being a "free wheel" device on the rear wheel hub which prevents the chain and cranks from moving while the machine is in operation. Special rims and heavy pneumatics are used for safety. Two levers suffice for control, one for the carburettor, the other for the ignition. The machine, which weighs about 63 lbs., can, it is claimed, attain a speed of twenty-five miles per hour.

WE hear that steps are being taken to organise a strong association for the defence of automobilists.

THE following gentlemen have recently been elected as members of the Automobile Club:—Mr. Joseph Peunel, Mr. J. Yardley Johnson, Mr. Samuel T. Briggs, Mr. Gaston de Casto, Mr. Woolmer White, Dr. John Sterry, Mr. Walter Littleton, Mr. Gilbert Elliott, Mr. Cecil Harmsworth, Mr. Harold Harmsworth, Mr. Thomas Ratcliff, Mr. E. F. Bradley, Mr. Harold S. Gray, Mr. John A. Brodie, Mr. Charles E. Shaw, M.P., Mr. Edward Lisle, Mr. A. J. Wilson.

## THE COCHOT MOTOR-VEHICLES.

WE illustrate herewith two light motor-vehicles recently introduced by M. G. Cochot, of 45, Rue Tanger, Paris. Fig. 1 illustrates a two-seated tandem car which is claimed to be an improvement on the ordinary quadricycle, inasmuch as the rear rider (the driver) is provided with a comfortable seat in place of being mounted on a saddle. Fig. 2 shows the Cochot two-

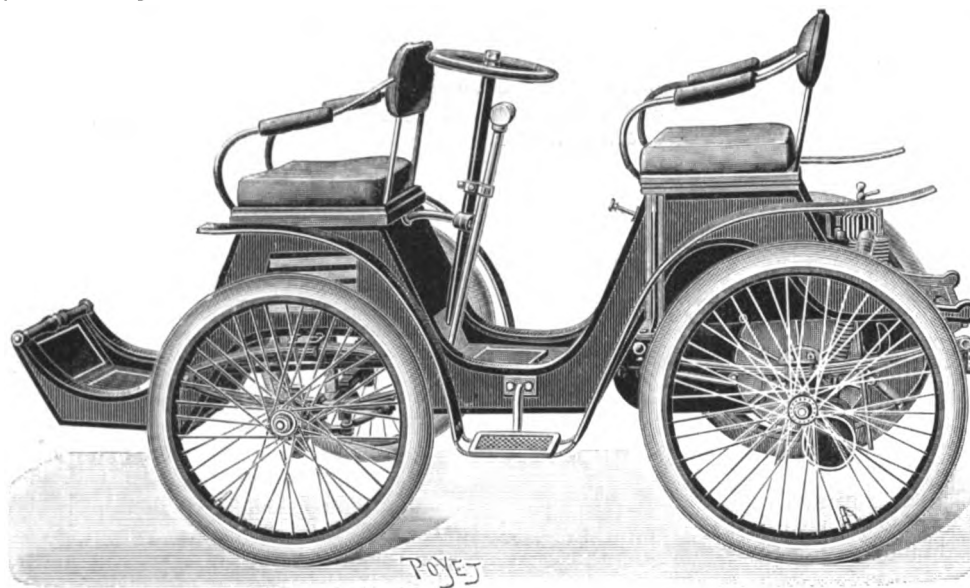


FIG. 1.—THE COCHOT TANDEM-CAR.

seated sociable voiturette. Both cars are fitted with a vertical petrol-spirit motor of the firm's own construction. It is of 2 h.p. with electrical ignition and large radial discs for cooling purposes. The engine is geared to the rear axle, a two-speed gear being provided. A feature of the jack-in-the-box, or differential gear, is that it comprises no bevel wheels, but is composed of straight spur wheels only. Steering is effected by a hand wheel, while all the control levers are arranged within easy reach of the driver. The voiturette (Fig. 2) can be provided with a small seat in front for an additional passenger, as shown, and at an extra cost can be fitted with a two-cylinder motor of 4 h.p. Ample brake power is available, while a point claimed for the hill-climbing gear provided is that all the wheels comprised in it are always in mesh.

THE Southern Motor-Car Company, of 59, Brixton Road, London, S.W., have got out a new list of motor-cars and cycles, as also of spare parts and accessories, of which they have sent us a copy. In addition to illustrations and particulars of the Georges Richard car and De Dion and Papillon tricycles, the list includes almost every conceivable article required in connection with light motor-vehicles and cycles, and should prove a useful book of reference to automobilists.

At the Bournemouth Borough Police Court last week Mr. Bone, solicitor, notified the Bench that the appeal against the conviction of Mr. McArdle for driving a motor-car on the wrong side of the road was decided upon. The Bench bound the defendant over in £20 and a surety of £20 to appear and prosecute the appeal.

It is stated in the Paris edition of the *New York Herald* that Mr. Alfred Harmsworth has just purchased a new 12-h.p. Panhard and Levassor carriage, which he will drive in the forthcoming 1,000-mile trial.

## ROMANCE OF A MOTOR-CAR.

By a Reporter of the "Norfolk Daily Standard."

AT Norwich Shirehall on Friday evening, before Mr. Justice W. P. Eversley, the Court was convened at the unusual hour of 8 p.m. for the purpose of trying an action in which Brigadier-General Sir Lucius Verity McQuiver McQuake, K.C.I.E., sought to recover damages for alleged slander from the Hon. Octavia Eulalie Fullalove. Both parties were said to be resident in Norfolk, while the incident which led to the proceedings took place in the near vicinity of the King of Prussia public-house, on the road between Norwich and Attleborough.

As already mentioned, Mr. Justice Eversley presided, and he was escorted to his seat by Mr. Sheriff J. F. Betts and Mr. Under-Sheriff R. D. Atkinson, his associate being Mr. R. J. Boyce. Mr. Charles Emerson and Mr. W. J. Harrison, instructed by Mr. A. T. Chittock (Chittock and Father, Norwich), were for the gallant plaintiff, and Mr. W. E. Keefe and Mr. Frank Hatch (instructed by Messrs. F. Glanfield and A. J. Lovelace) were for the defence. A very special jury was empanelled to try the case.

From the learned counsel's opening it appeared that the Brigadier-General, who was a reputable referee at hockey matches, a crocus grower and a county gentleman, had occasion to go to Norwich in his capacity of arbiter in the hockey-field, and took with him his god-daughter, a Miss Hollyhocks, travelling by his own motor-car. Somewhere in the vicinity of the King of Prussia at Besthorpe, the "thing" broke down, and he and Miss Hollyhocks dismounted and went to see what was the matter. Just as they were both bending down to inspect the damage, and when their heads were very close together, the defendant drove past, and it was alleged that she at once

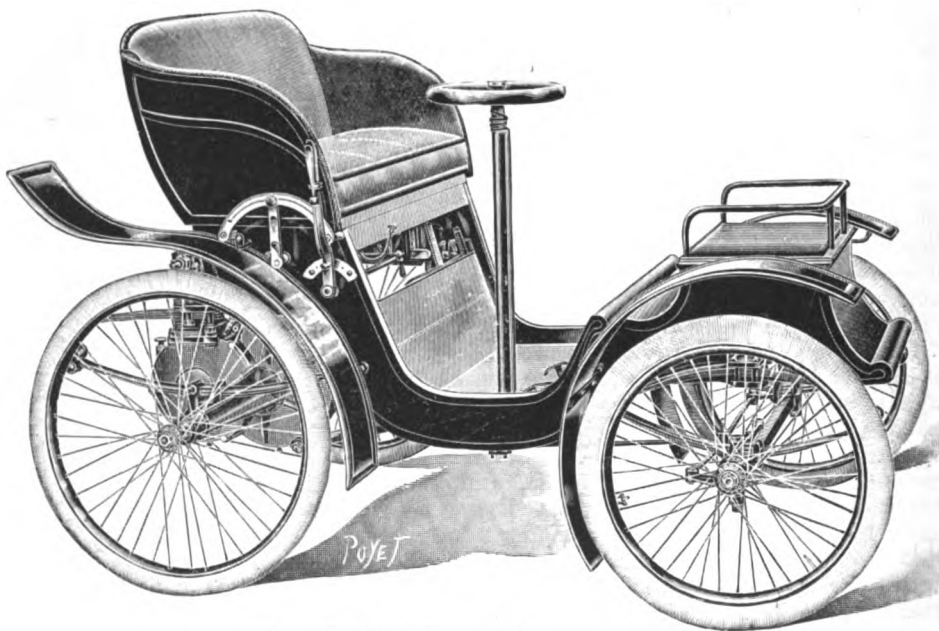


FIG. 2.—THE COCHOT VOITURETTE.

proceeded to the residence of Lady Jelunga McNab, of The Retreat, at Hethersett, to whom the plaintiff was engaged, and informed her that she had seen the Brigadier kissing the other lady, with the result that the gallant warrior received a missive in which the writer denounced him as a "whited sepulchre" and broke off the engagement—a P.S. informing him that no presents would be returned. On this ground the General, who was very much



upset, sued for damages—moral, intellectual, and cardiac. Learned counsel elaborated these facts with great skill and some humour to the jury, and apparently made an excellent impression.

The plaintiff, who was in full regimentals, appeared in the witness-box and generally bore out his counsel's statements. Police-constable Daniel Scroggs spoke to the motor-car breaking down at Besthorpe, and produced the notes he made at the time. He informed the Court as to the speed the vehicle was going, and also as to the exact distance it was when it stopped from the public-house door.

Anthony Vulcan Thoroughbrace, an American and a motor-car maker and coachbuilder at Attleborough, said that there was nothing the matter with the Brigadier-General's conveyance, which went on all right as soon as he and the constable gave it a push behind. He picked up some hairpins and a "curler" (laughter) on the spot subsequently, and also a type-written poem. Cross-examined—he admitted that there was no great trade for motor-cars at Attleborough, and that he had done carriage work for the plaintiff prior to his purchasing his car. He had seen cars at the Stanley Show, and had driven one, not from Norwich Market-place to Thorpe, but as far as Prince of Wales' Road, where it collided with a tramway post—the steering gear went wrong (laughter).

Learned counsel then addressed the jury for their respective clients, and the case was decidedly in a tangle when the time came for the learned Judge to sum up, which he did in a very lucid way. In concluding, he set forth the issues on which a verdict would be required, and expressing the opinion that he had befogged the issue as much as was possible, dismissed the twelve good men and true to their duty.

The verdict was worthy of the traditions of the jury-box. In very few minutes the foreman announced that they were agreed. They could not find for the plaintiff, because the defendant was a lady. They wished to say that the plaintiff left the Court without a stain on his character, and they adjudged him to pay the costs.

It is reported that an American circus manager is figuring with the Duryea Mfg. Co., of Peoria, Ill., with the purpose of equipping all their wagons and animal cages with motors. The *Horseless Age*, to whom we are indebted for the information, adds that "Circuses will no doubt ere long be exhibiting horses as curiosities."

WE learn that the United Motor Industries (Paris), 64 and 65, Holborn Viaduct, London, E.C., have been appointed sole British agents for the "Reclus" unbreakable sparking plugs for De Dion and Decauville motors. The company has, in consequence of the growth of their business in England, opened a warehouse in London, in which a large stock of the innumerable parts and fittings connected with the motor trade is being exhibited.

THE Automobile Club has decided that in connection with the forthcoming 1,000-mile trial if there are three entries of motor-bicycles in Section I., a separate class for motor-bicycles will be formed. Entrance fees will be the same as for motor-tricycles, while as regards the prizes, these in amount will be equivalent to the prizes for motor-tricycles, viz., first prize, 7 per cent., and second prize, 3 per cent. of the prize fund.

THE Keystone M. and M. Company, of Lebanon, Pa., U.S.A., have lately completed a light steam motor-car. The steam is generated by a small tubular upright boiler of the shell type. The application of steam is through small cylinders in the hubs of the rear wheels, each of the wheels being supplied with three small engines of that type. This, it is claimed, permits an increase of power, according to the size of the boiler and cylinders used, and also allows the construction of vehicles of a lighter type than when heavy engines are attached to the body or framework of the carriage. The construction of the motors is such that they dispense with the use of sprockets, chains and compensating gears, each wheel being independent of the other on a stationary axle. At a speed of 200 revolutions of the engine the carriage will, it is claimed, travel at a speed of twenty miles an hour.

## HOLIDAYS ON A MOTOR-CAR.

"LOG" OF A JOURNEY TO LANCASHIRE AND ELSEWHERE.

BY EDGAR SOAMES.



THERE could be no question as to how our summer holiday should be spent. Always fond of touring about the country, the possession of an automobile renders the pleasure attainable in a way it was not before. Besides this—for the truth must out—a holiday spent in a similar

way in 1898 had not been a complete success and we were anxious to efface the memory of our comparative failure from our own and other people's minds. In August 1898 we were motorists of not many weeks standing, but that fact did not deter us from forming the ambitious project of motoring from Bromley (Kent) to Lakeland. We had a capital journey as far as Derby—130 odd miles—and fortune seemed to be smiling upon us. During the next day's stage, however, to Buxton, in pouring rain, the fickle goddess was less propitious, and we were



WAITING FOR THE THIRD PASSENGER.

hung up for several hours owing to trouble with our water-circulating pump, and an alarming knocking in the engine, the meaning of which latter symptom our then knowledge of the machine was insufficient to enable us to discover. The cause was afterwards ascertained to be a want of lubricating oil in the crank chamber, and it is easily enough preventable when you know, but our education in this, and in some other respects, had been somewhat neglected. To cut a long story short, we were detained for repairs for several days at Stockport. After this our troubles were not at an end, for a disagreeable stone wall, which got in our way near Windermere, so deranged parts of the carriage that the vehicle had to be ignominiously returned by rail to the makers at Coventry, whence we some weeks later fetched it on its own wheels back to its home at Bromley.

We arranged last year to take our holiday in instalments, and the first portion was allotted to Canterbury, whither we made our way on August 8th, that being the second day of the famous cricket week. None of the roads from Bromley to the Cathedral City are either very straight or very good. There is a choice of three, but they are all somewhat hilly. The most direct way is to join the main road from London, which, by going through Chislehurst and Sidcup, may be struck near Dartford.

This leads through Gravesend and Rochester, and besides being somewhat "towny," is very uninteresting the greater part of the distance, and also "switchbacky." Another route is through Farningham to Maidstone, but as it involves a long and unnecessary climb from that village to the top of Wrotham Hill, is not to be recommended. The third and longest is by way of the Sevenoaks road to Riverhead, and thence through the pretty scenery about Seal and Ightham to Maidstone. From Riverhead until the other side of Ightham is gained there is much up and down hill, but the surface is mostly good, and afterwards there is a grand road right into the county town.

We chose the last-mentioned route and were favoured with a beautiful day for the commencement of our holiday. Our party, he it said, consisted of three persons—two besides the driver—and a dog, while a considerable quantity of luggage, equal in weight to two more persons, was carried in addition throughout the tour. Starting from Bromley at 10.55 a.m. we made Maidstone, thirty miles, at 1.40. and stayed twenty-three minutes for lunch, and to fill up with water to cool our engine. Out of Maidstone the steep Detling Hill has to be negotiated, but the following seven or eight miles to Key Street, where the main London road is joined, is a gentle decline, or level, but the surface of the road was very bad, the dust being two or three inches deep nearly all over, with occasional rotten holes quite nine inches deep. This made careful travelling necessary; and eventually Canterbury was safely reached at 4.50. After depositing our goods at a hotel we made our way to the field of St. Lawrence, and found ourselves in time to see an hour's cricket. The total distance travelled during the day was sixty-one miles. Wednesday, Thursday, Friday, and half Saturday were all agreeably occupied in watching the engrossing games with Lancashire and the Australians, and having done our share in the shouting after the glorious and memorable victory of our county over the doughty Colonials, we turned our faces homewards, and leaving the city about four o'clock on Saturday, took the route by which we had come. The roads had all deteriorated very much in the five days' interval since we had travelled them before, and this made our progress slower than it should have been. After leaving Maidstone, where a short stop was made, darkness began to come on, and it was necessary to drive carefully, which again reduced our speed, and Bromley was not reached till about 11 p.m., our total for the day being sixty miles. If this should meet the eye of any member or official of the Kent County Council, we would draw attention to the very rotten state of the road between Green Street Green and Pratt's Bottom. It is always the same and reflects small credit upon those responsible for its maintenance.

Sunday, Monday and Tuesday were spent at home, while our engine, gear and wheels were carefully looked to, as we had a long and trying journey in front of us, having arranged to start on Wednesday, August 16th, on a journey into Lancashire. At 11.15 on the morning in question we got under weigh, and proceeded through London to Dunstable (forty-seven miles), where we had determined to spend our first night. The route selected through London was by way of Peckham, Camberwell New Road, Vauxhall Bridge, Park Lane, Edgware Road, and Finchley Road to Barnet. This appears about the best way of getting on to the Great North Road from South-Eastern suburbs, as it avoids the thick traffic met with if the more direct route, further to the east, is followed—Blackfriars Bridge, Clerkenwell, Islington, etc. We found very fair roads except that the surfaces south of the Thames were a bit greasy. Since then considerable stretches of wood paving have been laid in Peckham, a welcome substitute for the stone setts. Just beyond Barnet the road is generally rather bumpy, and so it was on this occasion, but it improved very much afterwards and left little to be desired, in spite of the dry summer that had been experienced. Progress had not been very fast hitherto, but over the level road to the old town of St. Albans, and through the still more level country approaching Redbourn and Markyate Street, to mention two of the villages passed through, a better pace was made. We arrived at Dunstable at 1.15, and putting up at the "Sugar Loaf," indulged in a grateful cup of tea in a shady and pretty garden at the back of that hostelry. We found that the manager of this

hotel intends to keep up with the times, and that a supply of petrol was kept. Further, no charge was made for housing our carriage, and in this latter respect our experience was the same almost without exception throughout the journey.

On Thursday, August 17th, we left Dunstable soon after 10.30 a.m., proceeding along the fine Holyhead road to Coventry (fifty-seven miles). There had recently been rain and, the surfaces generally, except that of the hill out of Hockliffe, left nothing to be desired. These roads are made of a hard black stone, broken very small, and for once in a way Macadam's important law appeared to be complied with. Hills came frequently for the first part of the journey, but they are not severe, and for seven miles after Daventry the road is either dead level or down hill. After Dunchurch again, up to which there is a rise of some 200 ft. in half a mile, there is a splendid level run of eleven miles right into Coventry. When four miles distant from the City of Spires the engine suddenly came to a stop, and for some little time we could not divine the cause, but after taking out the induction valves, which are usually the first part to fall under suspicion, we discovered our oil tank was dry, and all that was required was to re-fill it with petrol. We had not expected this to occur, as we had so far only run fifty-three miles and the tank, when full, is good for seventy miles under favourable circumstances, such as we had experienced that day. We afterwards ascertained that owing to one of the supply pipes having become a little too much opened, the oil had fed too fast, and accordingly wasted. However, the stop included, the eleven miles were accomplished in an hour, and we reached Coventry soon after 4.30. Having deposited our luggage at the "King's Head," we drove at once to the Daimler Motor Works to arrange for new tires, which are of the solid rubber type, to be fitted to the back wheels. The tires which were taken off were the first we had had, and had stood a year's work, during which a distance of over 3,700 miles had been travelled. They were not yet worn out, but having come away from the rims in two places, were deemed unsafe for a long journey. The front tires were in much better condition, being subjected to less wear and tear than the drivers; still there were ominous tears in each of them.

The Daimler Motor Company, who were the builders of our car, were obligingly expeditious when we mentioned that we wanted to proceed on our journey next day, and the wheels were ready to be re-placed early on the following morning. Our start was delayed, however, by the carrying out of certain minor adjustments in the engine, more particularly the fitting of improved induction valves, with stronger springs, from which we have ever since derived an advantage amounting to not less than a mile an hour. It was nearly 10 o'clock before we finally got under weigh, and following the Birmingham road for the first few miles we enjoyed a most delightful run. The country was unknown to us, and following the map, without consulting the road-book, we were soon in some little difficulty. The map showed a turning off the Birmingham road at Stonebridge, leading through Coleshill to Lichfield, and in fact this route was coloured as the main road from Coventry to Manchester. We soon found there was some mistake, for on descending a steep hill at Coleshill, and asking the way to Lichfield, we were informed that the direct road was "straight on, over the hills." The road was grass grown and very rough, but evidently was important in a by-gone day, for in process of time we came upon undecipherable mile-stones half grown over by the hedge. A better route to have chosen would have been through Fillongley and Tamworth, or to have skirted Birmingham by way of Sutton Coldfield. Our progress was further delayed by several stoppages to try to discover the cause of an unusual sound proceeding from some part of the car. Sometimes it was a knocking noise, at others it was more of a scoop. We examined almost every part without success; it did not come from the engine, nor from the transmission gear; the chains were quite right and so were the wheels. Now and again the noise would disappear for a short time and then begin again worse than before. At last, having exhausted all our ingenuity, we were reluctantly compelled to abandon our search for the cause and to ignore it, but we have since come to the conclusion that the mysterious noise proceeded

from a broken carriage spring over the off-front wheel. We stopped at Lichfield for tea and afterwards made our way over good and level roads through Rugeley, Stone, and Trentham, to Newcastle-under-Lyme. Between Rugeley and Stone we ran into furious rain, which prevented us fully enjoying the pretty scenery of this part of Staffordshire. Except in the towns we were much struck by the deserted condition of the roads from this point right up to our journey's end in Lancashire. We met few horse vehicles, fewer cyclists, and not many more pedestrians; in fact, in some parts this, which is a very important main road from the north to the south of England, has stray blades of grass growing even in its centre. It must be presumed that travelling in this part of the country is, for some reason, confined to the railway. At Trentham we had to stop in pouring rain to fill up our oil-tank, but there was no wonder that it needed replenishing to-day, our progress having been slow owing to the above-mentioned causes. Newcastle was reached between eight and nine o'clock, and we found the narrow streets of this dirty town being rendered still worse by the laying down of an electric tramway. Bed was welcome that night, though we retired with some forebodings as to the morrow's weather, and our sleep was occasionally disturbed by the noise of plashing rain. Our mileage for the day was sixty.

The first thing Saturday morning we put ourselves in communication with Manchester, both by telephone and telegraph, to ascertain where in that city we could lay in a store of petrol, as we had before had difficulty in getting supplies there. Our inquiries were fruitless, however, and we had to start in uncertainty as to our chances of procuring the necessary fuel. The weather was unsettled when we left Newcastle about 10.30, and it rained occasionally all the way to Manchester. The first six miles lay through the uninviting "black country," and it is almost enough to give one "the hump" now to think of that smoke-begrimed district and its unkempt inhabitants. As soon as the county of Cheshire was entered the scenery and roads both began to improve. We ran through the quaint town of Congleton without halting; on past the famous Alderley Edge, through Wilmslow and Cheadle to Didsbury, where the outskirts of Manchester are entered, and did not stop until the centre of Cottonopolis was gained, a distance of thirty-seven miles being thus accomplished without a stop in about 3½ hours. Then began a wearisome search for a purveyor of motor-car spirit. It being Saturday afternoon many of the places of business were closed, but at length, after knocking about for a couple of hours, we procured what we wanted at a wholesale chemist's and proceeded on our way as fast as the stone setts of Salford and Pendleton and a regard for our springs would allow us. Some of our readers are no doubt acquainted with the Bolton road, and of their sympathy in our painful progress we are assured, but for the information of those happily ignorant of the quality of that execrable thoroughfare, we may say that three or four miles out of Manchester the small stone setts of the city are exchanged for large paving stones, laid apparently without any regard for the comfort or safety of those who may have the misfortune to be compelled to use the roads. Speed was reduced to six or seven miles an hour, but even then travelling, instead of being the easy gliding motion it is on a well-kept surface, was a succession of painful humps, which constantly made one quake for the safety of the springs, and sometimes threatened to jerk one bodily out of the car. Bad as is the road from Manchester to Bolton there is worse beyond, and from Horwich to Chorley it beggars description. For the most part it is macadam on one side and pavement on the other, and it is difficult to say which is the worse. At Chorley we turned off the main Preston road and directed our wheels towards the small village of Withnell, where we were to be guests for a few days. Although the country lanes were an improvement as regards quality upon the main road, we yet found that so infatuated are the Lancashire people with the merits of paving stones that they had even laid them down in the centre of some of the villages. We reached our destination about sunset, having travelled sixty-five miles during the day, and though feeling the effects of the severe shaking we had gone through we had the satisfaction of knowing that we had conformed in every respect with the itinerary we had prepared on starting. In the

four days since leaving Bromley we had journeyed a distance of 231 miles, and had not failed to reach our appointed stopping place each night, or to be ready to start again the next day.

When the carriage was washed it was discovered that six of the eight leaves of the carriage springs over the off-front wheel were broken right through, and though one was probably fractured the previous day, it is hardly possible to doubt that the terrible roads north of Manchester were responsible for the breaking of the others.—*The Bromley Record*.

(To be continued.)

## THE OLIVERSON-KILLINGBECK VARIABLE-SPEED GEAR.

SOME time ago we mentioned that a new car was in course of construction at the works of Mr. C. H. Oliverson, of 11, Queen's Road, Southport, a feature of which was the novel and simple variable speed gear with which it was to be fitted. We are now able to give illustrations of the new device, which has been invented by Mr. Oliverson, in conjunction with Mr. F. W. Killingbeck. It will be noticed from the general outline of the gear (Fig. 1) that pulleys of a type are employed in which each pulley is formed by a pair of discs, each dished to form a cone on one of its faces, the coned faces of these discs forming a V (in half section). In the V thus formed a belt is fitted having its driving surfaces at its edges instead of on the inner face of the belt. The working surfaces of the pulleys of this type are varied

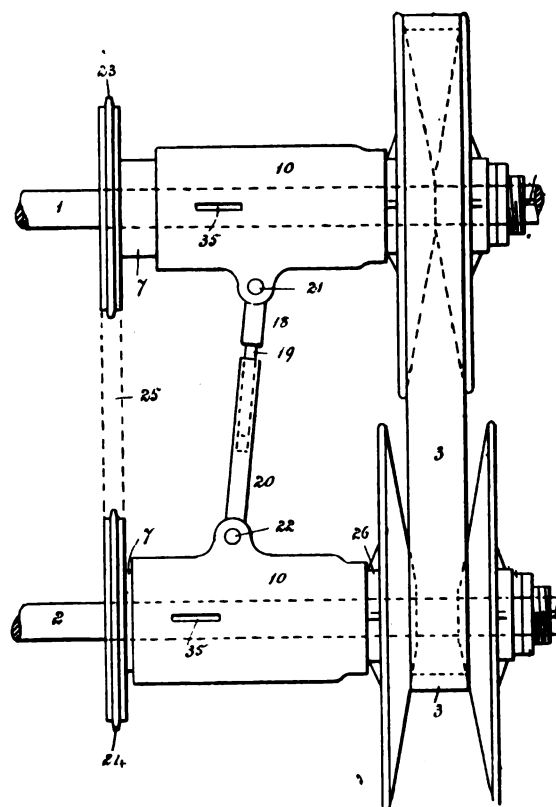


FIG. 1.

in diameter by the forcing apart of the discs, with a resulting expansion of the V, or the drawing together of the discs, with a resulting contraction of the V, by means of the devices described below.

Referring to the illustrations it will be seen that a sleeve 11 (Fig. 2) mounted with a feather key 29 on the shaft 1, which is provided with a keyway 30 to allow of a longitudinal movement of the sleeve, carries two coned discs 4 and 5. The disc 4 is keyed with a feather key 31 on the sleeve which is provided with a keyway 32 to allow of longitudinal movement thereon and the other coned disc 5 is also keyed at 33 to the sleeve 11 and secured and adjusted by lock nuts. Abutting against a flange 12, on the





concluded earlier than usual. The bar-rooms in the two hotels were crowded to suffocation with excited men all that afternoon and evening, who drank deep to drown the thoughts of the 'new invention of the evil one' which was so soon to bring ruin upon them. The hotel keepers profited accordingly, so the old saying about it being an ill wind which blows nobody any good once again proved itself to be a true one."

## THE PANTZ MOTOR-VEHICLES.

**Q**UITE a new departure in motor vehicle construction has lately been introduced by M. Charles Pantz, of Pont-à-Mousson, France, the feature of which lies in the fixing of the motor and the whole of the transmission gear on a distinct frame, which can be detached from one vehicle and

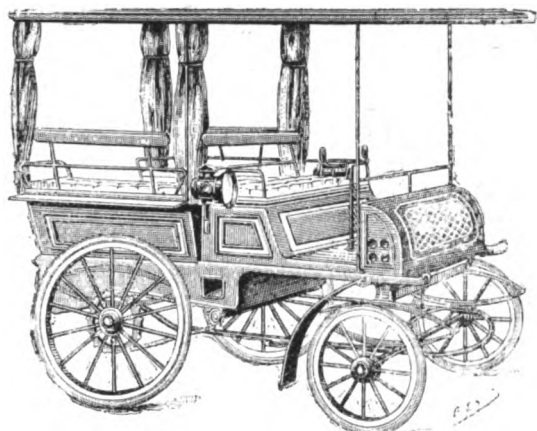


FIG. 1.—GENERAL VIEW OF PANTZ MOTOR-WAGONETTE.

applied to another. The arrangement of the motor and transmission gear on the separate frame is shown in Fig. 3. The frame *K* carries a two-cylinder petroleum-spirit motor *M*, of 6 or 8 h.p., provided with electric or tube ignition. Upon the motor shaft *A* are mounted pulleys *p'' p' p*, of different diameters, transmitting power by means of belts to the pulleys *P'' P' P* on the counter shaft *A'*. Each of the pulleys *P'' P' P* carries a fast pulley and an idle one, on which the belts are shifted by means of forks controlled by rods *c c c*, connected with levers within convenient reach of the driver. The pulleys *p'' p'* give

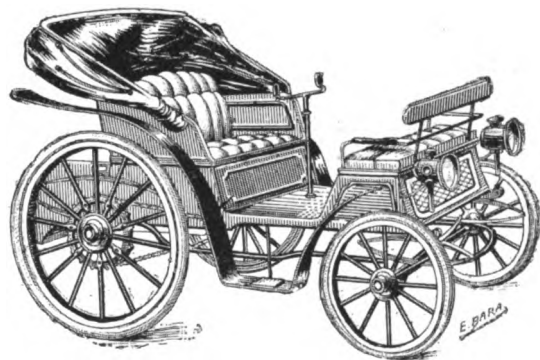


FIG. 2.—GENERAL VIEW OF PANTZ MOTOR-VICTORIA.

the high speed; *P' p'* the mean speed, and *P p* the slow speed. At the end of the shaft *A'* is a pinion operated directly by the shaft for forward motion, and by a system of internal gear for the reverse. When the frame, with motor and gear, is placed in a vehicle this pinion *D* engages with a gear which transmits its motion to a second counter and differential shaft on the vehicle. Each vehicle has a wheel of variable diameter, according to the nature of the vehicle, and the speed it is intended for. The intermediate shaft *A'* carries a drum *f*, upon which operates a band brake. The tank *r* supplies the burners, and *b* the carburettor *C*.

Each side of the frame has two bolts *a, a*, the heads of which

fit in grooves in the framework of each vehicle in such a manner that the pinion *D* engages with the gear of the vehicle, which transmits the power to the rear road wheels. The motor and machinery being in the proper position it is merely necessary to fasten the four bolts *a* to render the whole vehicle firm and safe.

The speed mechanism is then connected to the rods *c c*, which are attached to the controlling levers. It is claimed that when these bolts are all securely set the vehicle is almost as firm and solid as though the motor had been an integral part of the vehicle. Each car has its own water-cooling device, steering and control levers and its special transmission, carrying the differential and the pinions operating the transmission chains. On the outside of the differential is a gear, which engages with the pinion *D* of the motor system and thus transmits the power.

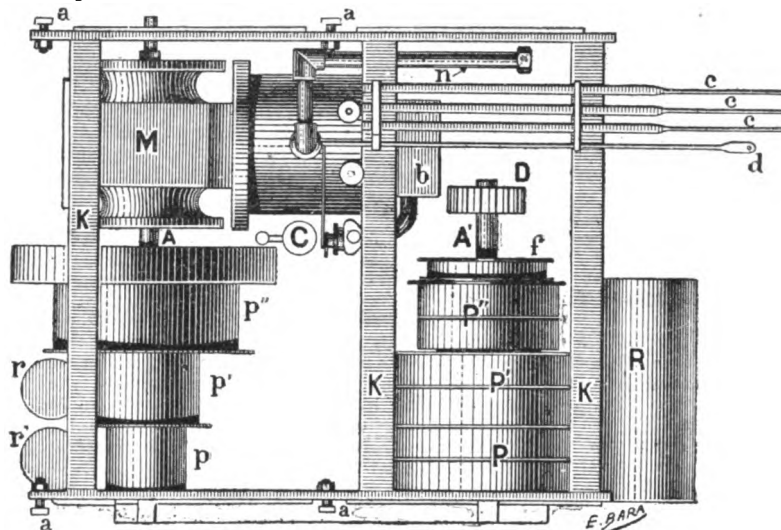


FIG. 3.—PLAN OF PANTZ MOTOR AND TRANSMISSION GEAR.

To facilitate the change of the motor and transmission gear from one vehicle to another, a stand is provided (Fig. 4), having grooves similar to those in the vehicles, so that when the motor apparatus is drawn out of the vehicle it rests upon the stand and can easily be inspected and repaired. The stand has an arrangement whereby its grooves may be adjusted to the same height as those of the vehicle. The entire operation of changing from one vehicle to another requires, it is claimed, but a very few minutes.

M. Pantz has devised a number of different types of motor vehicles specially arranged to receive the interchangeable motor and gear, two of which—a wagonette and a victoria are illustrated

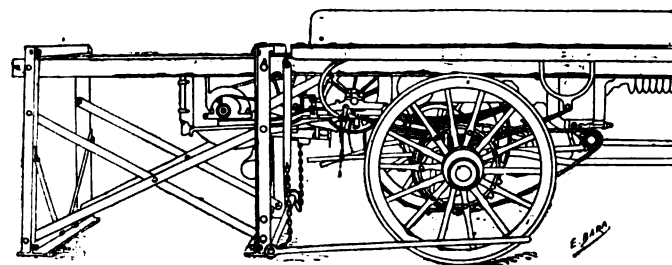


FIG. 4.—VIEW OF ARRANGEMENT FOR REMOVING MOTOR AND TRANSMISSION GEAR IN THE PANTZ MOTOR-VEHICLES.

in Figs. 1 and 2. The water circulation is maintained by a small pump, the tubes of the frame being made to serve as a condenser. A motor-lorry has also been constructed on this system; it is provided with three speeds—three, nine, and fifteen kilometres per hour—and a reverse motion; it can transport a load of one and a half ton at the maximum speed on level roads, while in the low gear it will ascend gradients of one in ten. Two band brakes are provided, both operated by foot pedals, one acting on the intermediate shaft, and another acting on drums on the rear axle. The wagonette is fitted with three forward speeds—seven, fifteen, and twenty-five kilometres per hour, as also one speed astern.



M. Pantz has furnished us with a lengthy description of his system of motor vehicles in which he points out the many advantages he claims for the same. Chief among these is the facility with which the motor, etc., can be transferred from one vehicle to another, just the same as a horse. For example take the case of a tradesman having a van and also a light carriage. When the motor is not required for the van, it can be taken out and applied to the carriage, or *vice versa*. Other advantages claimed for the arrangement are the increased facility with which repairs to, and the cleaning of the motor can be carried out: while in case of an accident causing damage to the "body" of the car, only the latter is rendered idle while the necessary repairs are being effected.

### CRYPTO GEAR ON BENZ MOTOR-CARS.

#### ADVERTISEMENTS AS IMPLIED WARRANTIES.

AT Marylebone County Court, last Friday, before Deputy-Judge Fitzroy Cowper, and a jury, Messrs. Friswell and Co., Ltd., cycle agents and motor-car factors, etc., 18, Holborn Viaduct, London, E.C., sought to recover £15 from Mr. Frank O. Seyd, trading as the International Motor-Car Co., 15, High Road, Kilburn, N.W., for supplying and fitting a Crypto gear to a Benz motor-car. Mr. Rowland was counsel for the plaintiff firm, and Mr. S. R. Earl, counsel, defended.

Mr. Charles Friswell, managing director of the plaintiff company, said that his people had been, for some time past, advertising in the motor-car trade journals that they were prepared to fit the Crypto gear to motor-cars. The defendant having, it appeared, noticed some of these advertisements, sent them an order to fit a Crypto gear to a motor-car. No size of gear was mentioned when the order was given, and they (Friswells) put on the only size they stocked, namely, that with a 7in. pulley. As they were not the makers of the gear, they never guaranteed any results as to its working, and wrote or printed on their invoices a notice accordingly. The order having been executed, the car was taken away by the defendant's representative and a cheque for £15 paid. This cheque, however, was returned by the bank marked, "Payment stopped." He maintained that the gear was properly fitted, and worked quite well, although he admitted that it would not make the car climb a steep hill. The gear should have been 2in. larger, but he submitted that the defendant should have calculated as to the gear. If the pulley was now made 2in. larger in diameter it would produce a third speed, and they had offered to do this work which would cost the defendant but a trifle.

Mr. Earl: But the offer was not made until after the action was brought.

Mr. Friswell, in cross examination, admitted that advertisements, as under, were published by his firm:—On May 6th last, "Hill-climbing gear fitted to '98 pattern Benz"; and on July 15th, "Benz cars, or any sort, with 1in. countershaft, climb any hill, with third speed, with Crypto gear, supplied by Friswell." He would issue such advertisements again, for if the pulleys were made to the proper diameter the cars would do all that the advertisements represented. He admitted that the car in question was a No. 1 pattern '98 Benz, such as was referred to in the May 6th advertisement.

Mr. F. H. Clingoe, manager at plaintiff's works, spoke as to receiving the order, and said that the defendant's representative was shown the identical gear which was afterwards fitted to the car. Neither at the time of receiving the order, nor afterwards, as far as he knew, was anything at all said about guaranteeing results.

Mr. William Henry Kitto, called as an expert witness, said he had inspected the car, and found that the Crypto gear was properly fitted and worked all right. To make the car climb steep hills, however, the gear should have been 2in. larger.

The defendant then gave evidence. After stating that he had seen plaintiffs' advertisements, as above, Mr. Seyd went on to speak of the correspondence which had passed between him and Friswells. In one of his letters he said: "If you will undertake to fit third-speed gear to the car, please say what price." The car in gear was a '98 pattern Benz, unaltered in any way as far as the engine was concerned. When giving the order, he relied, first, upon what Mr. Friswell had told him about the gear, and, secondly, upon the terms of the advertisements referred to above. Before the car went to plaintiffs' works it ran "beautifully," but when it came back it was simply ruined. Besides the car not running so well as before the gear was fitted, it also made so much noise that the police would not allow it to travel along the public thoroughfares.

Mr. Morris Capellen corroborated Mr. Seyd's evidence as to the working of the car. He denied having been shown the gear when he took the written order to the plaintiff's shop, and added that when he asked to be allowed to try the car before taking it back after being fitted, and before paying the cheque, he was told that "they never did that."

Mr. H. Belling, driver and teacher, engaged by the defendant, also gave evidence in support of the defendant's case.

The Judge, in directing the jury, referred to the well-known case connected with the "Catholic Smoke Balls," the advertisement of which stated

that persons using these balls would not have influenza for two years, and agreeing to hand over £100 if the article failed to do as advertised. An action, continued his Honour, was brought on the representations of the advertisement, when it was held that the plaintiff was entitled to recover. In the present case it was for the jury to say—(1) Whether they thought there was a contract and the advertisements constituted an implied warranty, and, if so, (2) Whether it was complied with by the plaintiff firm.

The jury answered these questions in favour of the defendant, for whom judgment was given, with two days' costs.

Mr. Rowland: But surely they cannot have our goods without paying for them.

Mr. Earl: We shall be only too glad if they will come and take the thing off our car.

### THE BEESTON MOTOR COMPANY, LIMITED.

THE following circular has been issued by Messrs. Hughes and Masser, Solicitors, Coventry:

"The appointment of a receiver by the debenture holders of the Beeston Cycle Company, Ltd., having come to the knowledge of the creditors of this company, has caused them to put pressure on the company, and proceedings have been commenced by several creditors. The trustees for the debenture stock-holders having been informed of this, and having been informed also that the company did not feel justified under the circumstances in paying the debenture interest which was due on January 1st, had no alternative but to take the necessary steps, in concurrence with the A Debenture holders, to protect the estate, and they have accordingly jointly appointed Mr. B. S. Dunn, of 10, Coleman Street, London, E.C., chartered accountant, the receiver of the property and assets of the company, under the powers given to them respectively by the debenture and the debenture trust deed.

"The directors had hoped to have been able to carry on this company, believing, as they did, that the business was a valuable and improving one. Mr. Dunn has taken possession of the assets and undertaking of the company, and is at present carrying on the business, which it is hoped he will be able to sell as a going concern. The fact that this company is well known, and has a good connection in the motor trade, is possessed of valuable licences, and has very convenient and well-equipped works for the manufacture of motors, renders the prospects of a sale as a going concern very good.

"You will see from the above that any proceedings by creditors would only hamper the receiver in effecting such sale, and could not result in any benefit to the creditors, but, in fact, would be disastrous to them, as destroying any hope of realising more than sufficient to pay the prior charges. You are probably aware that the Debenture Stock issue of the company has been recently reduced by £17,500, so that the position of the creditors is much better than it was before this transaction."

MESSRS. RUFFIER, MARNIER AND Co. is the style of a new firm which has just been formed in Paris (3 bis, Rue d'Athènes) to deal in automobiles.

"THE Horse and His Successor" is the title of a pamphlet issued by the Kensington Bicycle Manufacturing Company, of Buffalo, U.S.A., who have lately taken up the construction of electrical vehicles.

WE have received a copy of the programme of the "Semaine de Nice" from the Automobile-Velo Club de Nice. The week opens with a race from Nice to Marseilles and back on March 26th, concluding with one from Nice to La Turbie on Friday, March 30th.

THE "Protos" is the name of a new petrol motor lately introduced by Dr. Alfred Sternberg, of the Motorenfabrik Grossgörschenstrasse, Berlin, W. It is capable of working up to 2½ h.p., and is described as being suitable for motor-tricycles and light cars.

It may interest motor-tricyclists to learn that the United Motor Industries (Paris), 64 and 65, Holborn Viaduct, London, E.C., have just brought out drain-off taps to take the place of the present screw in the bottom corner of De Dion carburettors or motor-tricycles, and also waste-oil drain-off taps to replace the present screw at the bottom of the crank chamber of De Dion motors. We understand that the petrol taps are made in two sizes, so as not to project sufficiently to in any way inconvenience the rider or touch his ankle. Both these and the waste-oil tap are made to fit the existing threads. In addition, the firm have a large brass waste-oil tap, which latter, however, would require a fresh thread to be tapped, the standard one not being sufficiently large.

# THE Motor-Car Journal.

Vol. I.]


LONDON, FRIDAY, FEBRUARY 2, 1900.

[No. 48.]

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## COMMENTS.

—88—



THE latest news in connection with the use of automobiles in connection with warfare is that the Hon. C. S. Rolls has volunteered for the front, and intends, if possible, to take a motor-car or motor-tricycle with him should his services be accepted. He anticipates that his chief difficulty, should he succeed in getting his car to the front, would be with regard to a supply of petrol. It is stored at Cape Town, but there would probably be none available near the northern extremity of British territory. He is in correspondence with the

War Office on the subject, and that department ought to be willing to help him in giving a practical demonstration of the utility, or otherwise, of the motor-car in active service on the field. Those who saw Mr. Rolls negotiate the hills and curves in the Crystal Palace grounds last May will have confidence in his performances in the rough places he will find should he go to South Africa.

### Impending Attacks on Automobilmism.

AUTOMOBILISTS must be watchful, for although there is apparently a lull in the active measures with which they were generally assailed some time ago, and although the Yeovil Council's crusade has not been so largely supported as its promoters had hoped, there are keen opponents to the development of automobilism in many of the leading public bodies of the country. At the present moment the Corporation of Edinburgh, where motor-cars have proved themselves popular with the people, is seeking the passage of a Bill through Parliament which is arousing considerable interest amongst automobilists south of the Tweed as well as in modern Athens itself. By this measure the corporation seeks power to prohibit vehicular traffic from any streets it cares to specify, and to decide upon the speed of all vehicles. This is a complete change in the procedure long recognised in connection with municipal matters—as will be seen from the case of London mentioned below—and as such should be seriously considered by horse-owners and cyclists as well as by motorists. In all former cases for regulating traffic and such matters the corporators have only had power to make bye-laws, which bye-laws had to be advertised in the press, and any member of the public could lodge an objection to them with the sheriff, who is in Scotland a kind of mixture of a County Court judge and a recorder. The sheriff then fixes a day for a public hearing and gives power to stop the issuing of the bye-laws if he sees fit. Under such circumstances the right to some sort of appeal is given; but by incorporating these traffic regulations into a Parliamentary Bill this means of protection is absolutely denied.

### Under Cover of a Corporation Bill.

So much for the general principle. But it is felt by many observant motorists in Scotland that under cover of this widespread clause it is intended to restrict the speed of motor-cars to a pace which might ultimately send them from the streets altogether and to actually prohibit them from traversing certain

streets at all. Such being so, we are glad to see that the standing committee of the Automobile Club has decided to lodge a petition in Parliament against the objectionable provisions. Every automobilist should endeavour to assist the effort by fully acquainting local and friendly M.P.'s with the unprecedented character of the proposed legislation, by which a new and growing industry, from which Parliament has so lately removed many harassing restrictions, may be impeded in an important and leading city of the Empire. Should our readers do this with thoroughness and promptitude a splendid backing will be given the well-timed endeavours of the Automobile Club.

### New Bye-laws for London.

As opposed to the method which is sought to be adopted in Edinburgh is the present procedure by which corporations have to issue bye-laws, which before enforcement are subjected to public criticism and also submitted to a Government Department for confirmation. In the Town Clerk's office at the London Guildhall there is now lying a set of interesting new bye-laws with regard to locomotives. Apparently they are couched in a similar spirit to the Edinburgh clauses, about thirty-three important streets and three bridges being scheduled, along or over which locomotives must not go between 9 p.m. and 7 p.m. The impression has got abroad that these are intended to apply to motor-cars as well as steam-rollers and traction engines, and one of the staff of the *Motor-Car Journal* has called this week at the Guildhall to inspect the proposed new regulations. Among the thoroughfares scheduled are Aldersgate Street, Cheapside, Finsbury Pavement, Ludgate Circus, Holborn, Holborn Viaduct, Queen Victoria Street, and the Embankment. No locomotive must remain stationary for more than ten minutes at any place, save in the case of a breakdown—and then not even a bye-law of the City Corporation can move the sullen thing—and no such vehicle must approach within 200 yards of the rear point of a similar locomotive in front.

### Do They Apply to Motor-Cars?

SUCH regulations are all very well in connection with heavy locomotives, but that they should be enforced on motor-tricycles, cars, and vans seems preposterous. Our representative wended his way to the office of the City Solicitor, and was assured that the new bye-laws were intended to apply to all locomotives. The Locomotives Act of 1898, he was told, was an amending Act to bring together previous legislation, and light locomotives—which embrace motor-cars—would be subject to the new bye-laws. That having been declared by an official of the Corporation, there was nothing to argue about. But we would point out to the City Solicitor that in leading people to suppose that all locomotives can be regulated under such a bye-law he seems to be traversing section 16, subsection 2, of the Locomotives Act, 1898, which says, "nothing in this Act shall affect light locomotives within the meaning of the Locomotives on Highways Act, 1896," under which automobilists claim what little freedom they possess. In any case, we would suggest that such a view of the matter as is given by the City Solicitor's office warrants the wakefulness we urge on the part of

motorists who cannot afford to have themselves deburred the use of the roads by such means.

#### Carriage of Motor-Car Spirit.

OUR correspondence column this week contains a letter which the Anglo-American Oil Company, Limited, are sending to their customers. The matter with which it deals is of interest and importance to all concerned with the management of motor-cars, and it would imply that the railway companies intend to adopt a policy which can only result in annoyance and expense. The difficulty in the clause of the railway companies' agreement seems to lie in the distinction as to damage caused by the wilful neglect of the companies' servants. That is a matter so often felt and yet not easy to prove, and will probably result in litigation disagreeable to both parties. Altogether, motorists are to be pitied, seeing that previously railway concerns have shown little sympathy with the movement, as might be inferred from their charges for automobiles. Now they evidently intend to hamper the carriage of motor-car spirit - or petrol.

#### The Gordon-Bennet Cup.

It is definitely settled at last, and the sports' committee of the French Automobile Club have ordained that the race for the Gordon-Bennet International Cup shall take place over the following itinerary:—Paris, Etampes, Pithiviers, Montargis, Nevers, Moulins, La Palisse, Roanne, Villefranche, Lyons, a distance of about 560 kilometres, or 350 miles. It is probable that the start will take place from Versailles, and excellent roads will be encountered throughout the route, albeit that the level nature of the course gives way to a hilly, if not mountainous, route after Roanne is passed. The committee can be heartily congratulated on the wisdom of their choice, as the foreign competitors will experience no difficulty in following a course so universally known as the Paris-Lyons road. Although the road-surface is excellent, others even better could have been found, but to follow them would have created a route of far too serpentine a nature to have been easily followed by strangers in the country. Representatives of the various competing clubs will require all their nerve and attention directed to the management of the machine upon which they ride, and the less distraction they are troubled with in the matter of road finding the better for them. In connection with this event, which, by the way, is set down for decision on June 14th, there will be formed a special committee, composed of one delegate from each of the competing clubs, viz., Belgium, France, Germany, Italy, and the United States. The French representative will be the Comte de Chasseloup-Laubat.

#### Roads and Automobilism.

MR. R. H. THURSTON, of Sibley College, Cornell University, has an article on the automobile in traction in the last issue of the *Automobile Magazine* in which he maintains that "the economy of the automobile system comes out in high relief when the working of the heavy classes of machines for business purposes is studied." But in order to develop their efficiency to the fullest extent the provision of good roads is rightly emphasised. The two influences will act and re-act on each other, for "the introduction of the self-propelled vehicle will insure the constant pressure of commercial interests in favour of the improvement and extension of systems of well-built roads throughout the country, and the progress of the existing movement in favour of good roads will be effective in the promotion of the introduction of the automobile of every class. The effect of the general use of the bicycle has been enormous in this direction; yet that is in large degree a toy, the minister of pleasure simply,

while the automobile may be expected to become a necessity in every department of business and to exert vastly more persistent and more important influence upon legislation and public improvement. Urban traffic must, ere long, become mainly dependent upon the new system of transportation, and suburban greatly modified and improved."

#### A Manchester Motor Club.

A MEETING of prominent Manchester and district motor-carists was held at the Grand Hotel, Manchester, on Wednesday of last week for the purpose of forming a motor-car club. Rules were submitted to and approved by the meeting, and officers were elected. The name of the club is to be the Manchester Motor Club, and the annual subscription one guinea. We are informed that the object of the club is solely the furtherance and encouragement of the pastime. The hon. secretary is Mr. W. Cawood, 2, Parsonage, Manchester.

#### Motor-Cars v. Tramways.

ON several occasions we have referred to local suggestions for the institution of motor-car services in place of tramways in various localities. There is no doubt such will become very popular ere long, and we are glad to see the agitation for a motor-car service is being actively popularised at Bromley in Kent by the *Bromley Chronicle*, which points out that it seems strange that on such an important main artery from London as that which passes through Bromley there should be no regular passenger service of vehicles after passing Catford, where the tramway ends, Catford being only some six miles from the heart of London. In the opposite direction—to Farnborough—there is an even greater need of improved facilities of locomotion, inasmuch as there is no railway to that large village. Even with a railway it must be remembered that the high road is nine times out of ten the best road to one's destination; for places of business, public offices, and private residences have a way of keeping as near to the old main highways as they possibly can; while railway lines and stations are generally located where land is not the most expensive—that is, outside the heart of towns and villages. To return to the Farnborough road. By reason of the growing population along the straggling "Common," and the threatened rapid increase in the number of habitations in the village of Farnborough, there will soon be need of a better service of buses than now exists, great as has been the improvement in this respect during the last two or three years.

#### Experience at Edinburgh and Swansea.

OUR contemporary then considers the alternatives, brushing tramcars aside as necessitating an objectionable permanent way on a country road, which could not fail to detract from the rural aspect of the locality. Inquiries having been made by the Editor, he has come to the conclusion that a motor-car service should be inaugurated, and enforces his contention with the experience of the Edinburgh Autocar Company which "has now been at work for twenty months, for one year as a private concern, and for the remainder as a limited company. At present it owns forty public service cars, as well as half-a-dozen private motor vehicles, which are let out on hire. On an average every car runs as much as seventy miles a day, and totals in a week no less than four hundred miles. Two types of vehicle are employed by the Edinburgh Autocar Company, the one accommodating ten passengers and the other eight. In the course of the day it is no unusual thing for one car to carry three hundred passengers. A similar service is at work in Swansea, but on a smaller scale. There only six vehicles are on the road, and they are of the same pattern as the larger sizes of the Edinburgh cars. At Swansea the service has been at work for ten months, and each car averages about sixty miles a day. They do not run over the same routes as the trams, but serve other

districts. It is hardly necessary to say that the requirements of different districts differ from one another, and an undertaking that may be successful in one will not necessarily succeed in another. The institution of a motor-car service, however, is a much less serious and costly affair than the laying down of a tramway, and if one route is unremunerative the cars can at once be transferred to another. If, on the other hand, a tramway is unsuccessful a large proportion of the money that has been sunk is absolutely lost, and the rails have either to be left, a disfigurement and obstruction to the road, or have to be removed at a considerable expense."

#### The World's Automobile Clubs.

THE list of automobile clubs which was published in last Monday's issue of the *Figaro* affords yet another proof of the flourishing condition of automobilism in France, and emphasises the advance held there over other countries. "I do not for one moment suppose," writes our Paris correspondent, "that the list is absolutely complete so far as countries other than France are concerned, for recently many new societies have sprung up whose official existence is not perhaps recognised until completion of their governing rules and regulations." Still the list, so far as it goes, is certainly interesting, and from it one learns that there exist no less than eighteen clubs in France, of which the "A.C.F." and *Kallie-Vélo* are Parisian, and the others provincial. These others are — Bordeaux, Pau, Toulouse, Périgueux, Nice, Marseilles, Lyons (2), Salon, Béziers, Avignon, Romans, Grenoble, Dijon, Nancy, Lons-le-Saunier and Rouen. In Germany there are seven clubs; Great Britain, two, one having five sections; Belgium, five; Italy, four; Austria-Hungary, four; United States, two; Russia, two; Holland, one; and Spain, one.

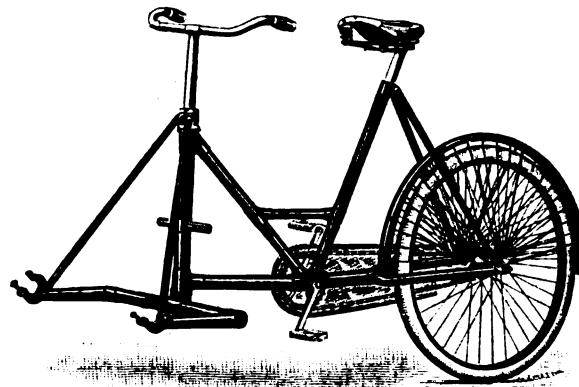
#### Level Crossings in France.

THE level crossing is a nuisance, and sometimes even a danger to the automobilist during the day time, but at night, when but badly lighted or even not lighted at all, the risk that it occasions to the *chauffeur* is, if one may so express it, no light one. Representations have already been made to the leading French railway companies as to the dangers to which cyclists and drivers of all types of vehicles, whether horse drawn or mechanically propelled, are subjected to by the defective lighting of the level crossings, and it is to be hoped that active steps be taken to ensure the effective lighting of every railway crossing throughout France. As recently as the 19th ultimo the unsatisfactory condition of affairs was brought before the notice of the railway companies by M. Jules-Louis Breton, and if the matter be actively pursued by the "A.C.F." and the "T.C.F." this spring should witness the entire disappearance of the trouble. *Chauffeurs* will then be able to drive at night with the certain knowledge that the presence of the level crossing will be made known to them by its lights, and not by the unexpected apparition of its heavy five-barred gate as was formerly the case.

#### New Trailers for Motor-Tricycles.

HEREWITH we give an illustration of the "free-wheel" trailer for motor-tricycles recently designed by Mr. C. M. Linley and introduced by the Whippet Cycle Syndicate, Limited, of 281, Oxford Street, London, W. In shape the trailer resembles the rear frame of a lady's safety bicycle, to which is fitted a means of attachment to the axle-bridge of the motor-tricycle. The handle bar is fixed, but at the base of the tube into which it is fitted is a socket joint on which the trailer is free to turn laterally, so as to follow automatically the steering of the tricycle, while provision is also made for a vertical movement so as to cope with variations in the road surface. A feature of the trailer is that it is fitted with a free-wheel device and chain gear, by means of which the passenger, if necessary, on a steep hill, can pedal in the ordinary way, so assisting the motor,

and thus make all the difference at times between getting stuck on a hill and clearing its crown. In the starting of the machine, too, he can usefully assist the driver. The trailer does not, it is claimed, appreciably take from the speed of a motor-tricycle on the level, and does not necessitate having the tricycle geared lower than for a single rider. The attachment is made to fit any make of tricycle axle, and is removable by loosening two bolts only. It is built to suit either lady or gentleman, and has ample adjustment for different heights of rider. The device, which is



provided with chainguard, wide mudguard, and dressguard, and a saddle suitable for either lady or gentleman, has, we understand, already met with the approval of a number of motor-tricyclists. A new single-wheel trailer, known as the "Pasquet," has also lately been brought out in France. A comfortable saddle with back-rest is mounted on a tubular frame. From the rear hub extend two horizontal stays, braced together. The stays at their forward end are attached to a grooved semi-circular stay fastened to a stay of similar shape, forming the connection with the tricycle in such a way as to act as a kind of turn-table for the trailer as it follows the course of the tricycle.

#### Motor-Cars v. Light Railways.

THE failure of many attempts to secure light railways in Scotland has led to a demand for motor-car services from some of our Scotch contemporaries. The *Buchan Observer* declares the motor-car to be the road locomotive of the future, and proceeds to deal practically with the roads to be negotiated in the district as follows:—"There are few roads in the country better looked after or macadamised with the same durable quality of material as the Aberdeenshire highways. The native granite, when pressed and solidified by traffic, forms one of the finest surfaces which it is possible to imagine, and our roads, in wet weather as well as in dry, are always in first-class condition. Keeping this in view, the motor-vehicle would find no difficulty in negotiating most of our highways. The greatest drawback would be the abrupt gradients. But on the principal thoroughfares it is remarkable how few steep ascents there are, and a system of low gearing, interchangeable with higher gearing for the level, could easily be provided. Between Peterhead and Fraserburgh, for example, there lies a stretch of turnpike which would offer few difficulties. There are two or three rather steep places, such as the Kirton How, and the dip near the Philorth burn, but these are not formidable, and apart from them the entire distance is as level as a railway track. Then there is the main road from Fraserburgh, via Cortes and Park, to Mintlaw. On the up journey it would be something of a climb, but the climb would be gradual, and there are no really steep gradients to encounter. From Peterhead to Longside is also a level which would not tax the machinery unduly, and the run on to Maud would not present serious trouble. From Maud to New Deer would be a rather tough track, but motor-cars are doing good work to-day upon much more difficult routes than we have mentioned, and with an infinitely worse bottom than is to be found in all Aberdeenshire."

### Some Experiences with Modern Motor-Cars.

At a meeting of the Royal Scottish Society of Arts held in Edinburgh on Monday, Mr. Dawson Turner submitted a communication on "Some experiences with modern motor-cars." He based his remarks on a tour which, as one of a party of four, he had made on a motor-car to Paris and back, sailing between Folkestone and Boulogne. With the aid of an interesting series of lime-light views he described his tour, related some of the difficulties he had to cope with in negotiating the steep gradients of the mountainous districts of the North of England. Comparing the three forms of motive power, he gave it as his opinion that oil engines were easily the best for touring purposes, as a few gallons of oil would take one over an immense distance at a high rate of speed. Steam was best fitted for heavy lorries and for the carriage of goods, while electricity, although the ideal form of motive power, was a luxury for the rich owing to the fact that a trained electrician was required to keep the accumulators in order. Going on to speak of the laws regulating motor-cars, Dr. Turner held that these ought to be altered. The danger to the public did not, in his opinion, depend so much on the speed at which the vehicle was travelling as on the control the vehicle was under, and a motor-car could be pulled up in a third of the distance a horse vehicle could. Concluding, he referred to the opposition which in turn had been manifested towards the introduction of the railway, the tramways, and bicycles, and said as in these cases it had failed, so assuredly it would fail in the case of mechanically-propelled vehicles.

### Another Newspaper Convert.

THE *Illustrated Carpenter and Builder* has issued an 8-page supplement intended to interest its wide circle of readers in automobilism. Its contents have been very judiciously selected, and the interview with Mr. A. Goodwin which appeared in our columns is usefully republished in order to demonstrate the value of motor-tricycles for business purposes. The increased space devoted to the industry in the general and technical press of the country must be gratifying to all concerned in its progress.

### Licences for Steam Vehicles in America.

THE New York police authorities are setting the pace for the country in reference to the licensing of operators of steam vehicles. During the past two or three weeks quite a number of engineer's licenses of the third class have, states the *Horseless Age*, been granted to aristocratic New Yorkers who own pleasure carriages provided with vertical shell boilers. "Applicants for such licenses are required to undergo a superficial examination in the construction and care of such boilers, but the inspection of the boilers themselves seems to be rather formal so far. A rigid inspection of vehicle boilers will without doubt be demanded soon, and manufacturers of steam vehicles should prepare themselves for it by a closer examination of the requirements of safety in shell boilers of this class."

### A Motor-Vehicle Users' Defence Association.

WE are glad to learn that an association with the following objects in view has been formed with this title under the auspices of the Automobile Club. The constitution of it consists of three trustees, a chairman and a vice-chairman, and ten gentlemen to form a committee of management, solicitors, auditors, treasurer, and secretary. Captain the Hon. Cecil Duncombe, J.P., the Hon. John Scott Montagu, M.P., and Sir David Salomons, Bart., J.P., have consented to act as trustees. The committee consists of:—The Chairman of the Automobile Club (Mr. Roger W. Wallace, Q.C.); the Vice-chairman (Mr. Frederick R. Simms); five members elected by the Club—Sir Edward Jenkinson, K.C.B.; Major H. C. L. Holden, R.A., F.R.S.; Mr. E. R. Shipton, Mr. Robert E. Phillips, the secretary of the Automobile Club

of Great Britain, and five members to be elected by the association at their first meeting. The chairman and a vice-chairman of the Automobile Club have consented to act as chairman and vice-chairman of the association, and Mr. T. W. Staplee Firth, of Messrs. Firth and Co., solicitors, of 77, Chancery Lane, London, W.C., has consented to act as solicitor; Messrs. Helmore and Helmore, chartered accountants, of 84, Chancery Lane, London, W.C., have agreed to become auditors; and Mr. George R. Helmore, A.C.A., barrister-at-law, has consented to act as treasurer and secretary. The association is to be practically self-contained, and is distinct and separate from the Automobile Club, or any other club or body of motor-vehicle users. The objects of the association are for the general protection of motor-vehicle users against proceedings or actions at law, either civil or criminal, and, where necessary, to commence proceedings or actions at law, either civil or criminal, and generally to protect the interests of motor-vehicle users throughout the United Kingdom. The subscription to the association will be £1 for members who do not own a motor-vehicle; £1 for members who do not own but who may drive a motor-vehicle; £1 for any member owning only one motor-car, but if a member shall own more than one car, and the cars shall be in use at the same time, his subscription shall be £1 for each car under his control or for which he is responsible. Upon any member having any action or proceedings at law commenced against him, or desiring to commence any action or proceedings for any matter appertaining to his motor-vehicle, he may communicate with the secretary of the association, who shall forthwith call a meeting of the committee to consider the merits of the case, and they will thereupon decide what steps, if any, the association will take for the protection of the owner of the motor-vehicle, having regard to the facts of each particular case. The funds will be devoted solely to the necessary expenses of the association in furthering the objects for which it is formed, and for the assistance and protection of motor-vehicle users. The association will be glad to accept any sum or sums, in addition to the said subscription, in augmentation of the funds at their disposal. Automobilists wishing to become members of the new association are requested to make application to the secretary and treasurer, Mr. George R. Helmore, 84, Chancery Lane, London, W.C.

### Reciprocal Service.

WE have lately received many expressions of approval of our efforts to practically assist the motor-car industry in this country, and there is no doubt the weekly perusal of our columns is not only of interest but also of value to all concerned in the progress of the automobile movement. Our readers can materially assist all engaged in this work by forwarding early intimations of new services, improvement in the design and construction of vehicles, etc., and practical hints which may be useful to motorists, provided such advice is the result of their own personal experience.

ALTHOUGH comparatively few of them have been used up to the present time, the American Wood Rim Company, of Bradford, Pa., are pushing their Kundtz laminated wood rims for use on the wheels of horseless carriages. The company claim that where their rim has been tried for this use it has been found to answer all requirements, and at the same time to show advantages, the greatest one of which is the elasticity which it gives the tire, and consequently the whole machine.

THE fifth annual cycle show promoted by the Glasgow Cycle Trades Association was opened on Friday last week in the Drill Hall of the 1st L.R.V., West Princes Street. This year a motor section has been included, but only a few exhibits are staged. Messrs. Rennie and Prosser, Limited, of Glasgow, exhibited an Enfield motor-quadracycle, while a Swift and an Eglinton motor-tricycle were exhibited respectively by the Ross-leigh Cycle and Motor Company, Limited, and Mr. J. Butchart.



# Automobile Touring in Winter.

(For description see page 758.)

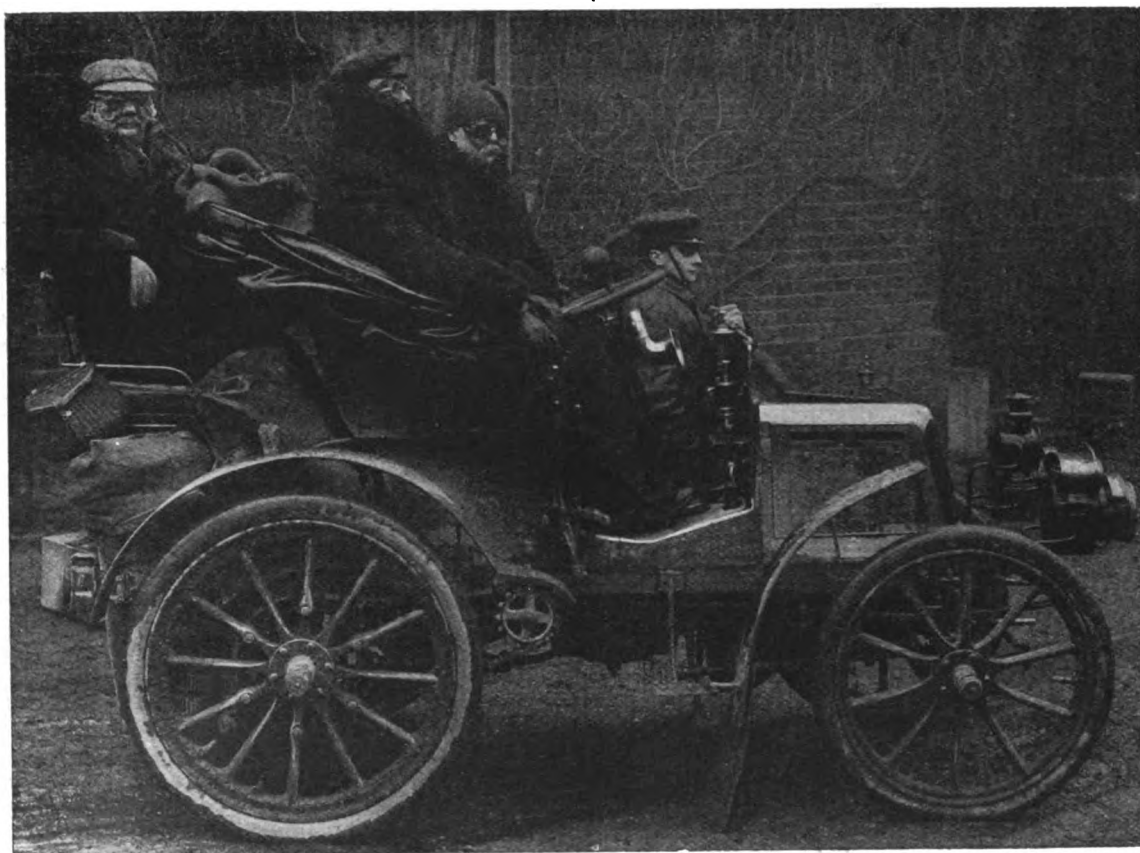
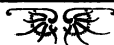


Photo by]

[Hill & Saunders, Oxford.

MR. ROGER WALLACE, Q.C., THE HON. C. S. ROLLS, AND MR. FRANK H. BUTLER ON PANHARD CAR.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### The Paris Exhibition Automobile Race.

THE automobile race which will be organised by the Automobile Club of France, in conjunction with the Paris Exhibition Committee, will be known as the "Etoile," and will take place during four days of the last week in July.

Starting and finishing from Joinville-le-Pont, an out-and-home journey of about 350 kilomètres, or 220 miles, will be made daily. The daily itineraries have not yet been decided upon, but at the Sports Committee's meeting of the 24th ultimo M. Pierre Giffard was requested to present to the committee a report on the subject.

### The Chauchard Cup.

ON Sunday next, at 9.30 a.m., M. Paul Chauchard will set the competitors for his magnificent trophy on their journey, and, doubtless, all Nice will turn out to see the start. As I recently stated, this cup will next year be competed for by the clubs of the South of France, but Sunday's race is among members of the Nice society only. By way of increasing the day's programme the "A.C.N." have decided to run off a course open to two-seated voiturettes weighing not more than 400 kilogrammes (880 lbs.), for which event a fair number of entries have been received.

### The Swiss International Race.

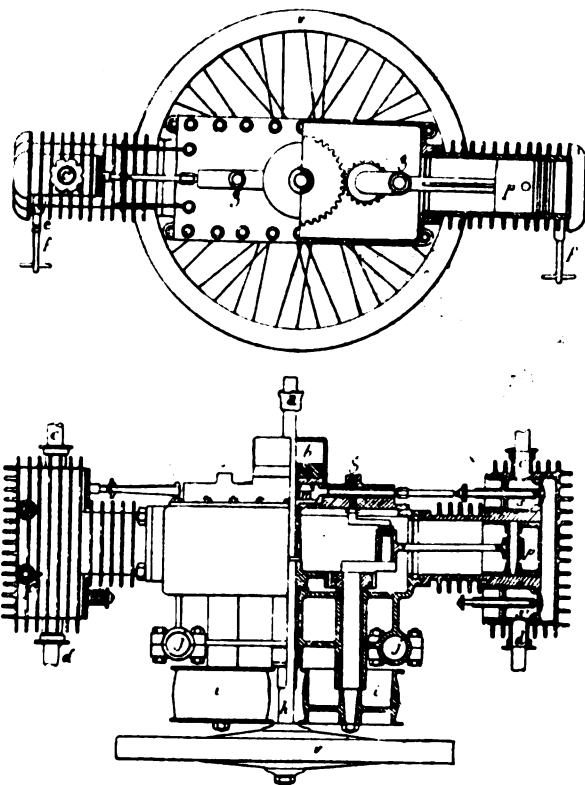
At a recent meeting of the committee of the Automobile Club of France eight medals were voted to the Swiss Automobile Club to be distributed among the prize-winners in the big race to which I referred in these columns last week. The "A.C.F." is ever ready to encourage the sport, and several of the allied clubs are indebted to it for handsome trophies or substantial donations to their prize fund.

### Preparations at Pau.

ACTIVE steps are being taken by the authorities of Pau to ensure that every detail of the automobile fêtes shall be perfectly organised, and no efforts are being spared to render the meet, which opens on the 22nd instant, worthy of the town. Some ten days ago thirty commissioners were nominated to assist the committee of the Béarnais Automobile Club in its work of organisation, and at the same meeting of the Council important grants were made to the club to ensure the success of the fêtes. I note that among the more recent entries are the names of Comte Boson de Périgord and M. Loraine Barrow for the Grand Prix de Pau, and M. Albert Chain for the Prix de l'Automobile Club de France. For the former event MM. Et. Giraud, R. de Knyff, Gilles Hourgières, and Loraine-Barrow have also entered. For the motor-cycle race called the "Grand Prix du Palais d'Niver" the entries are Marcellin, Gasté, Meyer, Beconnais, Merville, Rigal, Baras, and Osmont.

### The Turgan-Foy Petroleum-spirit Motor.

I SEND you herewith some further particulars of the somewhat novel petroleum-spirit motor employed in the Turgan-Foy light motor-carriage illustrated and described in the *Motor-Car Journal* for October 6th last. The principal feature of the motor is that the fly-wheel is horizontal instead of, as generally fitted, vertical. There are two cylinders



FIGS. 1 AND 2.

arranged opposite to one another, each piston actuating its own shaft Z, these driving a central shaft on which the horizontal flywheel Y is mounted, the two cylinders being in this way made to act in unison. The engine is capable of developing  $4\frac{1}{2}$  h.p., at an average speed of 1,200 revolutions per minute, the diameter of the cylinders being 80mm., and the stroke 100mm. For cooling purposes both

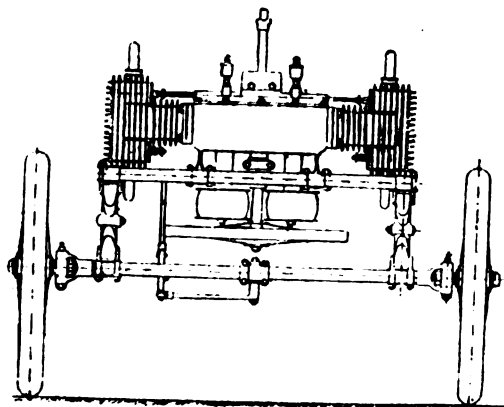


FIG. 3.

the cylinder walls and the explosion chambers are fitted with radiating fins, these combined with the location of the motor in the fore part of the frame being claimed to be effective. The ignition is electrical; the admission valves are located at s' and the exhaust valves at s; the latter are controlled by a single eccentric m on the fly-wheel shaft, the valve rods being provided with adjusting nuts.

### Normandy's New Club.

THE general meeting of the founder members of the Norman Automobile Club was recently held at Rouen, and approval given to the articles of association, the following officials being elected: President, M. Bridoux; vice-presidents, MM. Troussel-Dumanoir and Contamine; secretary, M. Bonnemain; assistant secretary, M. Lefebvre; treasurer, M. Naltet; committee, MM. Le Marchand, Lanoil, and Chandrillier. The list of founder members of the new society is now closed, and the regulations for the internal management are being drawn up for presentation to the members at a general meeting to be convened at an early date.

### Motor-Cycles at Menton.

It is announced from Menton that in connection with the fêtes to be held in March, there will be contested a motor-cycle race on the Promenade du Midi. The date of this event will be March 15th, and as numbers of *chauffeurs* will be down south during that month a capital entry should be secured. The municipal authorities and the organising committees in the various water places of Southern France evidently realise what an attraction an automobile *course* is to their fêtes, and in every programme one now sees such an item. The idea of holding an occasional motor-cycle race might well be seriously considered by many of our fashionable English seaside resorts, which boast of magnificent "plages."

### The A.C.F.

ON the 24th ultimo the committee of the "A.C.F." elected thirty-four new members to the club, bringing the grand total up to 2,261. At the same meeting MM. Emile Mors, Commandant Krebs, Comte Boson de Périgord, and Martin du Gard were elected members of the committee. The sports committee had under consideration the itineraries of the Gordon-Bennett and the "Etoile" races, particulars of which I give elsewhere, and the members further decided to accord the club's patronage to the race for voiturettes, which, as I announced last week, will be organised by *Le Journal des Sports*, over the Paris-Rouen route. In connection with this event, I may mention that the recently-fledged Automobile Club of Normandy has written to the promoters, offering to render assistance in the organisation and management, a sign that the members of the new society have no intention of leading a purely passive existence in the world of automobilism. After the A.C.F.'s committee had completed their work last Wednesday week, the majority of members participated at the concert-dinner, which is one of the features of the social side of the club. Twice a week, that is every Wednesday and Saturday, these dinners take place, and they are now so largely attended that, unless booked in advance, seats are impossible to be obtained. I strongly recommend those English members who make but a flying visit to Paris, and who wish to participate at one of these concert-dinners, to book their seats some days beforehand, otherwise they will probably be disappointed.

### News from Nice.

WITH the advent to Nice of very considerable numbers of *chauffeurs*, many of whom unfortunately have had but little experience in the management of motor-vehicles, the peace of mind and the bodily security of pedestrians are seriously menaced, and a popular agitation for the better regulation of the automobile and cycle traffic is rapidly springing up. The class mostly to blame is the motor-cycle section, the ranks of which include many young *chauffeurs*, whose enthusiasm for their new hobby leads them to commit excesses in the matter of speed which the older and more seasoned riders never dream of. This excess of speed in itself is bad enough, but the abuse of the pleasure of the new sport does not end there, for certain of the more thoughtless and imprudent motor-men have acquired the habit of running up to an inoffensive horse and

opening the compression cock of their machine under his nose, a practice which cannot be too strongly condemned. The more experienced automobilists do not commit this or other fantasies, and if at times they drive faster in crowded thoroughfares than is wise they have their vehicles so perfectly under control that no accidents result, and the only harm done is to unnecessarily frighten pedestrians. No, it is usually the *chauffeur* who has just gone through the novitiate stage of his career who occasions trouble with the public, and the sooner that stringent steps are taken to put a stop to his eccentricities the better for the sport, as well as for Nice. Only quite recently a lady cyclist, Made-moiselle Bessie Bergia, was knocked down by a young *chauffeur* conducting a voiturette and very severely bruised, while her machine was completely smashed. Undoubtedly, measures will have to be taken to restrain these headstrong motor-men, and they would be welcomed by all those automobilists who have the progress of the new industry truly at heart.

### New Records.

THE new year is very young yet, but already racing motor-cyclists are turning their attention to records, and undeterred by the inclemency of the weather two of their number have made successful onslaughts upon existing figures. It is almost unnecessary to say that one of the two is Béconnais, who, never content with merely beating the figures achieved by fellow *chauffeurs*, is continually making attempts to better his own performances. Last week on the famous Achères road, the scene of so many remarkable speed exhibitions, Béconnais succeeded in beating two of his own records, and two of the most wonderful that stood to his credit. The kilomètre with flying start and the two-kilomètre "départ arrêté" were the objects of his attack, the previous figures for them being 48secs. and 1min. 50 $\frac{3}{4}$ secs. respectively, times which he himself set up some two and a half months ago. His first essay was that of the kilomètre with flying start, and this he covered in 42 $\frac{1}{4}$  seconds, or at the terrific pace of 84 kilomètres (52 $\frac{1}{2}$  miles per hour), considerably faster than any recorded automobile performance on the road, with the exception of that made by "La Jamais Contente." After this success Béconnais turned his attention to the two-kilomètre trial from a stationary start, although the more prudent of the spectators endeavoured to dissuade him, on account of the road having now been cut by a tram line, which is, naturally, extremely dangerous to cross when travelling at a high rate of speed. His determination was not altered by his friends' pleadings and as events proved his attempt was entirely successful, the time for the distance being 1min. 42 $\frac{1}{2}$ secs. It is said that his machine jumped about 15ft. when it struck the tram line, the distance having been measured by the spectators. I understand that he was riding a 6 h.p. tricycle. The other record breaker is Fossier, who, riding a motor-bicycle belonging to Girardot, set up new figures from seven to forty-two kilomètres on the Parc des Princes track last Saturday. The commencement of a heavy down-pour of rain put a stop to his efforts at the end of the forty-second kilomètre. I append a comparison of the new and of the old figures. Those previously standing for ten and eleven kilomètres were Fossier's, but all the others were to the credit of Béconnais.

| Distance.    | New records by<br>Fossier. | Previous<br>record. |
|--------------|----------------------------|---------------------|
| 7 kil. ....  | 6 m. 8 s. 3/5              | 6 m. 9 s.           |
| 8 kil. ....  | 6 m. 59 s.                 | 6 m. 59 s. 3/5      |
| 9 kil. ....  | 7 m. 48 s. 2/5             | 7 m. 50 s.          |
| 10 kil. .... | 8 m. 38 s. 2/5             | 8 m. 40 s.          |
| 11 kil. .... | 9 m. 28 s. 4/5             | 9 m. 29 s.          |
| 35 kil. .... | 30 m. 25 s. 2/5            | 30 m. 26 s. 4/5     |
| 36 kil. .... | 31 m. 16 s. 4/5            | 31 m. 21 s. 3/5     |
| 37 kil. .... | 32 m. 8 s. 2/5             | 32 m. 15 s. 1/5     |
| 38 kil. .... | 33 m. 1 s. 2/5             | 33 m. 8 s. 3/5      |
| 39 kil. .... | 33 m. 54 s. 1/5            | 34 m. 2 s.          |
| 40 kil. .... | 34 m. 47 s.                | 34 m. 55 s.         |
| 41 kil. .... | 34 m. 38 s. 2/5            | 35 m. 48 s. 2/5     |
| 42 kil. .... | 36 m. 31 s. 2/5            | 36 m. 41 s. 4/5     |

## THE APPRIN WATER-COOLING COIL.

M. P. APPRIN, of 27, Rue de l'Abondance, Lyons, France, has lately brought out a new water-cooling coil for petrol motor-vehicles. As will be seen from Fig. 3 the feature of the tubes, which are made of copper, is that by a special process of manufacture the radiating fins are



FIG. 1.

hollow and are part and parcel of the tube. The coils are made either in the form of a serpentine (Fig. 1) or straight (Fig. 2), special end connections being provided in the latter case.

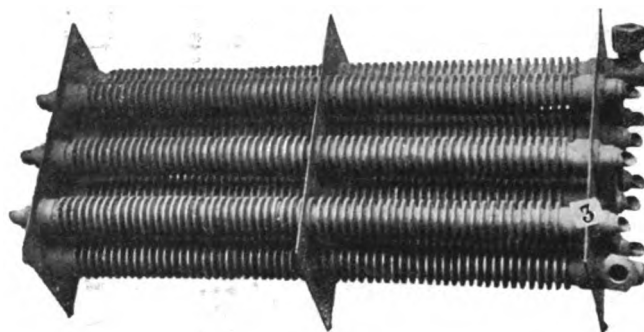


FIG. 2.

M. Apprin claims that his new hollow rib tube gives a maximum of efficiency, and that a coil or tube one metre long per horsepower of the motor is sufficient to keep the water at a reasonable temperature. The weight of the hollow-rib tube is given as 2lbs.

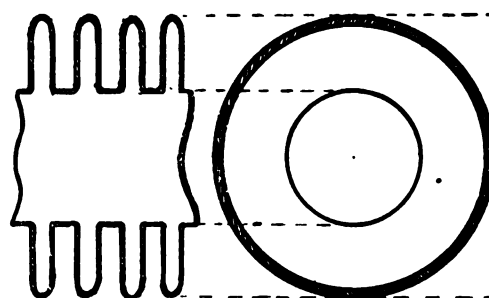


FIG. 3.

per metre, while owing to the fact that they are round and smooth, mud or dirt is said not to adhere to them to the same extent as on the ordinary form of cooler.

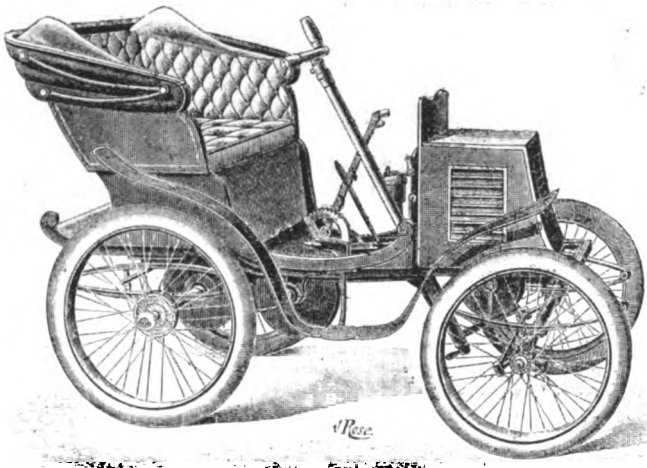
A HOUSE dinner of the Automobile Club is to be held at Sheen House Club on Saturday, April 7th, at 7 o'clock p.m. The motor-vehicles will meet at the Automobile Club, Whitehall, at 3.30, and will drive to the Sheen House Club for tea and will return after dinner.

THE Duke of Manchester now owns Charron's 12-h.p. Panhard car of Paris-Bordeaux fame, and he has ordered a Locomobile Company's steam-car of extra power, which, if it arrives in time, he will run in the Automobile Club 1,000-mile trial.

MR. J. HOYLE SMITH, 37, Cross Street, Manchester, the hon. secretary of the Manchester Automobile Club, asks us to state that he would like to receive, on or before Wednesday next, the names of any gentlemen wishing to become members of the Club, which is the Manchester branch of the Automobile Club of Great Britain.

## THE CRÉANCHE PETROLEUM-SPIRIT MOTOR-VOITURETTE.

WE are able this week to illustrate still another of the many types of light motor-voiturettes recently introduced in France. This is the Créanche of the Société des Voiturettes Créanche (Ch. Bruel and Co.), 7, Rue Brunel, Paris. The car, which, as will be seen, takes the form of a two-seated duc, possesses one or two novel features, as will be gathered from the following brief description. The motor—a De Dion—is of 3 h.p., and is fitted with water-jacket and electric ignition; it is located on the fore part of the frame, and is mounted, together with the water and petrol tanks, the carburettor, and the silencer, on a sliding bed-plate, the object of which is referred to below. On the motor-shaft is a pulley whose width is twice that of the belt which connects the motor-shaft to the differential shaft, the latter carrying two pulleys, on to one or the other of which the belt may be shipped as desired. Three forward speeds—8, 16 and 32 kilomètres per hour—as also a reverse motion, are provided. From the intermediate shaft to the rear road wheels the power is transmitted by the usual duplicate sets of sprocket wheels and driving



chains. To cut the motor out from the transmission-gear, in case of blocks in the traffic, etc., no friction clutch is employed, but advantage is taken of the method adopted of mounting the motor and its accessories on a sliding bed-plate; the latter can, by means of a lever within easy reach of the driver, be drawn a slight distance towards the driver, which has, of course, the effect of causing the driving belt to run slack. A reverse motion to the controlling lever pushes the motor away from the driver, and so tightens the belt. The frame of the car, which is built up of steel and wood, is rectangular in shape and is suspended on the axles by plate springs. The wheels are of the cycle type, 25½ in. in diameter at the front and 29½ in. at the rear; they are fitted with pneumatic tires, while the steering is controlled by a sloping hand-wheel or bar. Ample brake power is provided, there being a hand brake on the intermediary differential shaft and cord brakes acting on drums on the hubs of each of the rear road wheels. A detachable handle is provided for starting the motor, while the vehicle, which is about 6½ ft. long, the width between the wheels being 3 ft. 7 in., can be fitted with a hood, if necessary.

THE Races Committee of the Automobile Club is to meet on Tuesday next to consider preparations for motor-cycle races and a big race in France.

A CONFERENCE was held at the Automobile Club, on the 29th ult., between the Racing Rules Committee, Mr. Herbert, the hon. secretary of the Amateur Athletic Association, and Dr. Turner, Mr. Todd, and Mr. Noble representing the National Cyclists' Union. Fundamental rules were adopted which will be recommended to the Committees of the Club, the A.A.A. and the N.C.U. respectively. It is expected that the Racing Rules of the A.C.G.B. will be published next month.

## AUTOMOBILE TOURING IN WINTER.

THE delights of winter touring by motor-car can only be enjoyed when accompanied with good fellowship, and when the keenness of cold winds is mitigated by great depths of fur and appropriate raiment. Provided with both essentials, the trio of motor-enthusiasts recognisable in the photograph given on page 755 recently participated in a tour from France to Wales, which was thoroughly enjoyed, and should add another demonstration to the attractiveness of the new means of locomotion for winter touring as well as for summer trips. The vehicle was an 8-h.p. Panhard car, and with it the party left Paris a few days before Christmas. Members of the Automobile Club will readily identify the three travellers, while those who are not within that organisation will be interested in the features of Mr. Roger Wallace, Q.C., the president of the club, who is to the left of the Hon. C. S. Rolls, to whom the car belonged. Though the upturned collar prevents a full view of the latter's face, it gives some idea of the way in which the party were prepared for any climatic conditions. Seated behind is Mr. Frank H. Buller, hon. treasurer of the Automobile Club, to whose courtesy we are indebted for this interesting photograph, which was taken at Oxford while the tour was in progress.

After leaving Paris the route was *via* Rouen and Havre to Southampton, and thence through London, Oxford, Gloucestershire, Ross, and Monmouthshire, to Hendre, where Lord Llangatcock has a beautiful place in the Wye valley. There they arrived at Christmastide, the front of the car being appropriately decorated with holly and mistletoe, while an arrangement of cotton wool gave a snowy appearance that added to the local interest in its advent. During the journey some little trouble was caused by snow getting into the carburettor, but this was obviated by the insertion of a hot-air tube. By the help of two acetylene lamps of great power they were able to continue their journey far into the winter evenings without mishap, and the long trip should convince those as yet unconverted to the motor-car of its suitability for all weathers. The photograph shows the car covered with mud and loaded with creature comforts highly essential to the enjoyment of such an expedition, while the appropriate clothing of the trio will be readily appreciated by those who have experienced a ride of many miles through the snow. The goggles worn by Mr. Rolls and his companions were very necessary as a protection against the keen winds encountered, and no one should venture far without such accoutrements. Without detracting from the view they add materially to the comfort of the trip.

Apart from its interest as an object lesson in motor-car raiment the photograph will be appreciated by reason of the *personnel* of the party it depicts. Mr. Roger Wallace, as the president of the Automobile Club, has an influential position among automobilists. So, too, has Mr. Frank Butler, the hon. treasurer, who, by the way, will be going to Paris in a few days to bring home his new 6 h.p. Panhard car. The third member of the party, the Hon. C. S. Rolls, is well known as one of the most enthusiastic motorists in the country, and his friends will be interested to hear that he has volunteered for service in South Africa, with, we believe, the corps of the Electrical Engineers, which Major R. E. Crompton (who is also a member of the Automobile Club) is taking out. Should he be accepted it is his intention to endeavour to take a motor-car or motor-tricycle with him, and to get right to the front with the searchlights.

A NUMBER of detail improvements have been introduced in the 1900 model of the Orient Express Car of the Automobile Association. The chief alteration is to be found in the engine, which is now stated to be 6 h.p.

THE Progress Cycle Company, Limited, of Foleshill, Coventry, have sent us a copy of the preliminary 1900 catalogue of Royal Progress motor-cycles they have just got out. It gives particulars and illustrations of their motor-tricycle, motor-"quad" and the Progress axle balance gear and bridge. Four or five pages are usefully devoted to instructions for the management of motor-cycles.

## THE SCHEELE ELECTRICAL CARRIAGES.



A GERMAN firm which is devoting considerable attention to the construction of electrical vehicles is that of Herr Heinrich Scheele, of Elberfeld, Cologne, who is now turning out electrical "my-lords," dog carts, and delivery vans. A general view of the Scheele "my-lord" is given in Fig. 1.

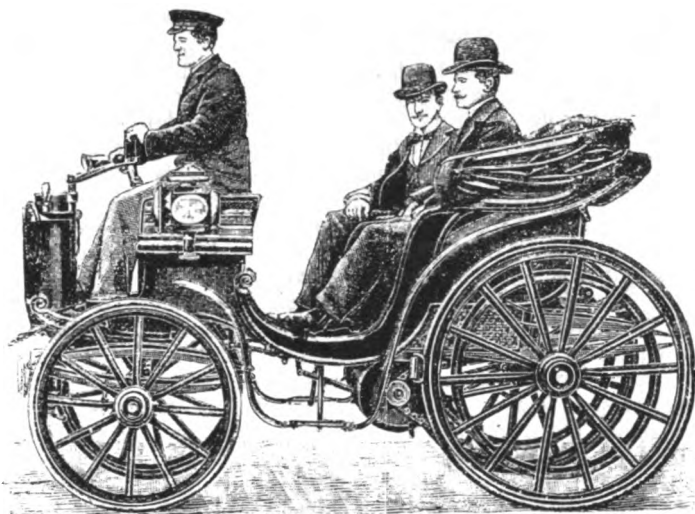


FIG. 1.—THE SCHEELE ELECTRICAL VICTORIA.

The vehicle is provided with two Geist electromotors, geared by chains to the rear axle (Fig. 2). The chains and chain wheels are of a special type; the sprockets have no teeth, but have a central groove in which runs the chain, allowing a certain amount

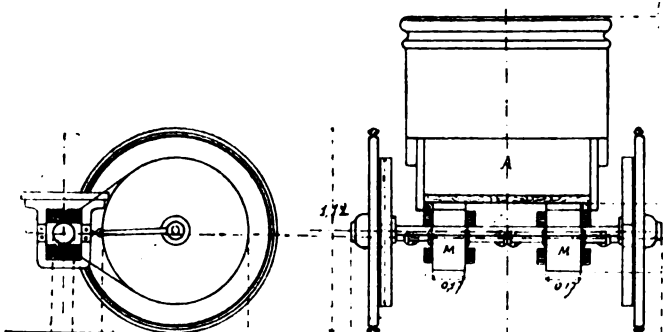


FIG. 2.—DIAGRAM OF MOTOR CONNECTION IN SCHEELE MY-LORD.

of slip and giving, it is claimed, a more silent drive than is possible with the ordinary chain gear. The battery consists of a set of 42 accumulators of the Hagen type. They have a capacity of



FIG. 3.—THE SCHEELE ELECTRICAL DOG-CART.

75 ampère hours and weigh 560 kilog. (about 11cwt.); the cells are arranged partly under the driver's seat and partly at the rear. The controller is arranged to give three forward speeds—

5, 10, and 20 kilomètres per hour and two reverse motions. Steering is effected through the front wheels as usual; band brakes, controlled by a foot pedal and acting on the rear wheel hubs, are provided, as also shoe brakes on the rear wheel tyres. The weight complete of the vehicle illustrated in Fig. 1 is given as 1,600 kilog. (1 ton 1,280lb.). Fig. 3 shows the Scheele four-seated dog-cart. In this vehicle only one electro-motor, a Korting, capable of developing from 3 to 4 h.p., is employed, it being geared by pinions direct to the differential gear on the rear axle. The battery in this vehicle consists of fifty-six accumulators of the "Colonia" type, supplied by Messrs. Leffer and Co., of the Colonia Accumulatoren-werke, Aix-la-Chapelle. The cells are arranged in two groups of twenty-eight; the battery, which complete weighs 11cwt., is claimed to have a capacity sufficient for a run of from 75 to 90 kilomètres. The controller is adapted to give three speeds forward, ranging from 5 to 25 kilomètres per hour, and two reverse motions. The dog-cart is stated to weigh complete 1,200 kilog. (1 ton 400lb.).



## THE FORTHCOMING RACING SEASON.



THE Hon. C. S. Rolls recently wrote to the *Motor-Car Journal* that "Looker On" need not be alarmed at the rumours of cars with 50 h.p. and 100 h.p. being in course of construction in France, and that although parts of a so-called 50 h.p. machine are in course of construction it is only to be an experiment; further, that the *chauffeurs* who have been selected to defend the Gordon-Bennett Cup will, he believes, drive Panhard cars of not more than 16 h.p.

The rumours which one hears in Paris do not agree with this statement. For instance, if you ask M. De Knyff what is to be the horse-power of his car for the "Paris-Bordeaux," he says, "I am sorry, but that is a secret." Almost in the same breath he says that probably in the 1,000 Mile of the English Club he will use his "Tour de France" 16-h.p. Panhard, with cylinders enlarged so as to give at least 25 h.p., but this is not considered fast enough for the French races of 1900. One is assured also by journalists that Messrs. Panhard have actually under construction racing cars for the Paris-Bordeaux and other big races, having eight cylinders giving a total of 40 h.p. It is difficult to believe that if Messrs. Panhard only intend to use 16 h.p. engines, that there should be so much secrecy in the matter. Yet, it is quite on the cards that after experiment they will decide to run 16 h.p. cars.

Mr. Bird, in the same issue of the *Motor-Car Journal*, points out that Mr. Rolls's 8-h.p. Panhard covered the 144 miles between Paris and Boulogne in 4h. 12min. Surely there must be some mistake here; this would mean an average of 34.38 miles an hour. The records given in the automobile papers of the period show that Mr. Rolls took 6h. 11min., an average of 23.12 miles an hour. It is important that these records should be accurate. *Automobile Club Notes.*



A STANLEY steam car has just made its appearance in Brussels, where it has attracted much attention.

WHEN in Manchester recently we saw the Thornycroft steam lorry, used by the Lancashire and Yorkshire Railway Company. It appears to be doing its work in a satisfactory manner.

THE De Dion-Bouton British and Colonial Syndicate, Limited, of 14, Regent Street, London, S.W., ask us to point out that there were no 2½-h.p. De Dion motors in existence prior to No. 9,600. It will therefore be necessary for anyone buying a De Dion and Bouton motor of 2½ h.p. to see that the number is in excess of 9,600.

MESSRS. RUBERY AND CO., of the Victoria Iron Works, Darlaston, have sent us a copy of "South Staffordshire: Commercial Sketches," in which their works are illustrated and described. In addition to constructing channel-steel frames for motor-cars, the firm have a large business in constructional iron-work and bridge material, they having supplied, among other contracts, the iron and steel framing forming the interior of the Olympic and Duke of York theatres in London.



## HOLIDAYS ON A MOTOR-CAR.

## "LOG" OF A JOURNEY TO LANCASHIRE AND ELSEWHERE.

By EDGAR SOAMES.

(Continued from page 747.)



AT Withnell we stayed four days, and the first, a Sunday, was treated as a *dies non*, while the second was devoted to a thorough cleaning of the carriage and engine, during which process the injury to the carriage spring was discovered. The

broken leaves were detached and taken to a coachmaker at Blackburn, who quickly made six new ones to take their place, and by the following morning the car was ready for work again. We had, however, only a light programme for the day, an hour or two of the morning being spent in taking members of the household for short runs, while in the afternoon we drove into Preston to call on friends.

On Wednesday, August 23, we bade our kind host adieu, after first showing and explaining the working of the car to a local doctor who was contemplating the purchase of an automobile owing to the many disappointments and losses he had experienced with horses. We had decided to return by almost the same route as we had come, but we took a short cut over the moors to Bolton, which proved no saving of time, for bad as is the road through Chorley, this, especially at the latter end, is even worse. It would be interesting to learn why Lancashire keeps its roads worse than other counties. That its unenviable fame in this respect is not of recent growth is proved by the following extract from Arthur Young's "Six Months' Tour," published in 1770, which is cited in a useful handbook on the "Construction of Roads and Streets," by William H. Maxwell. He says: "*To Wigan Turnpike*. I know not in the whole range of language terms sufficiently expressive to describe this infernal road. Let me most seriously caution all travellers who may accidentally propose to travel this terrible country to avoid it as they would the devil, for a thousand to one they break their necks or their limbs by over-throws or breakings-down. They will here meet with ruts which I actually measured four feet deep, and floating with mud only from a wet summer; what therefore must it be after a winter? The only mending it receives is tumbling some loose stones, which serve no other purpose than jolting a carriage in a most intolerable manner. These are not merely opinions, but facts: for I actually passed three carts broken down in those eighteen miles of execrable memory." We do not pretend that the roads are as bad as that now, but if only the same rate of progress is maintained it will take another century before they can be traversed in comfort. We replenished our store of petrol in Manchester, and except for losing our way in that city our journey to Newcastle-under-Lyme was without incident. We had started about noon, and reached Newcastle, a distance of sixty miles, something after sunset, the first part of the journey having been travelled at snails' pace.

Next day we continued our progress to Coventry, stopping for lunch at Lichfield. The day was terrifically hot, but passing through the air at a speed of ten or eleven miles an hour materially mitigates heat, and it was not until we had arrived at our midday stopping place that we were conscious of the abnormal temperature 90 deg. in the shade. We did not make a long stop at Lichfield, as we were anxious to reach the Daimler Motor Works before closing time in order to have our front tyres renewed like the back ones. We took the road through Tamworth and Fillongley this time, and though it is somewhat winding after passing through the quaint old town of Tamworth, it is a great improvement upon that by Coleshill.

Our oil tank provokingly ran dry almost within sight of the Works' gate, which caused a few minutes' delay, but we were still in good time, and the Daimler Co. again obligingly pushed the job forward, and the wheels were ready again soon after eight in the morning. We now therefore had new tyres to both back and front wheels. It may be of interest to remark that the front rubbers had traversed a distance of 3,974 miles, and the back ones 3,706. Our distance for the day was again sixty miles.

Hot as the previous day had been, the next, August 25th, was hotter, and proved, we believe, the hottest day of the year. Our engine was in fine form, and the car galloped up the hills at fourth speed as if it knew that we were nearing home. This fact, together with the fine road, tempted us to contemplate taking the remaining 105 miles at a stretch, and fulfilling an oft-expressed wish to "score a century." The temperature, however, induced other counsels, so we gave up the idea, and quietly drew up at the Dunstable "Sugarloaf," leaving the remaining forty-seven miles for the morrow. In our fifty-eight miles that day we met two or three other motor-cars, which strangely enough were the only ones we had seen—except in Coventry, where they are frequent enough—during the whole of our northern progress.

Next day, Saturday, August 26th, we completed our journey to Bromley in a leisurely way, passing through London, and stopping for half an hour at Catford to watch the cricket match, Kent v. Warwickshire. Home was reached about 4.30 p.m. It will be seen that we occupied the same length of time—four days—coming down south as we had going north, and our programme had been carried out in its entirety, without any alteration. In the eleven days we had been away we had run 479 miles. Although an accurate record of the amount of oil consumed was not kept, it may be said approximately that each gallon carried us fifteen miles, and the price of petrol being at present 1s. 1d. per gallon it will be seen that the item of fuel is a light one in automobiling. The time occupied is of course a long way from constituting a "record." But moderate as was our rate of travelling, it is faster apparently than that of the London and North-Western Railway, for an article belonging to us dispatched on the day we left from where we had been staying failed to reach London till some hours after we had passed through.—*The Bromley Record*.

(To be continued.)

*Sporting Life* is one of the latest papers to start a column of "Motor-Car Notes."

MESSRS. SPIERS AND POND'S steam-wagon, which we have not seen for several weeks, is, we notice, once more on the road.

A COMPANY has just been formed at Levallois-Perret (136 bis Rue Victor Hugo), with a capital of £13,000 to be known as La Société Industrielle de Cycles et Automobiles.

THE last issue of *Cassell's Magazine* contains an article entitled, "The Motor up to Date," the main feature of which is the interesting series of illustrations which accompanies it.

THE New Courier Cycle Company, Limited, of Alexandra Street, Wolverhampton, whose "Motoret" was illustrated and described in a recent issue, are now arranging to supply cycle makers and others with a complete set of component parts for building the same.

WITH regard to the seizure of various motors at the recent exhibition at Paris by Messrs. De Dion-Bouton and Co., Messrs. Featherstone and Sons, of Salford, agents of the Butler motor, write that they "are astonished to learn that Messrs. De Dion-Bouton thought themselves justified in taking this action, so far at least as the Butler motor is concerned. We are informed that Messrs. De Dion seized these motors on account of a so-called infringement of their patent, viz., the cylinder tops being attached to crank box direct by two, three, or four pillars, as in their own. The Butler 2½-h.p. motor is not in any way similar regarding these points, its cylinder top being clamped on by a nut on the top, and there are no pillars used. The Butler motor is entirely free from royalty, and Mr. Butler is prepared to take legal proceedings against anyone who states that his motor is an infringement on any others."

## MIDLAND MOTOR NOTES.

By "HERCULES."

—8—

## The Motor-Tricycle Competition.

By no stretch of the imagination could Saturday last be described as an ideal day for motoring. Early risers saw the sun shining brightly and a blue sky overhead, and there were expectations of a good time on the Birmingham road, over which the motor tricycles were to run in the first of the series of tests held by the Birmingham Motor and Cycle Show. But a change came over the spirit of their dream an hour or so before noon; the sky became overcast, Old Sol retired behind the heavy clouds, and rain began to fall. Things brightened up a bit, and then rain and sleet were driven with almost blinding force into the faces of those travelling from Coventry to Birmingham. And this was the order during the remainder of the day—storm and sunshine alternating, and always a strong, biting wind, the keenness of which even the oldest motorists appreciated. The condition of the roads after the rain of the week can be well imagined—sloppy everywhere, especially in Birmingham, and heavy and dead at innumerable points of the route. The conditions might have been worse, but not much, as someone tersely put it when comfortably ensconced in one of the cosy rooms of the Stonebridge Hotel.

## From Coventry to Stonebridge.

By the courtesy of Mr. George Iden, of the Motor Manufacturing Company, two other pressmen and myself were offered seats in one of the Iveagh cars, with Mr. Thomas as a companion. We left the works soon after 11.30, held fast to the car as it crossed the canal bridge into the street, which bridge has a gradient of one in five, and in about five minutes were on the Birmingham road, confident by this time in the ability of our Jehu to drive us with safety anywhere. Only an expert driver could "dodge" the traffic in Coventry streets as he did. We travelled gaily through the mud and water, and were settling down nicely, despite the keenness of the wind, when we seemed to suddenly run into a storm of sleet and rain, which continued with more or less severity until our car arrived at Stonebridge. We ran down Merriden hill grandly, through the deserted streets, by the obelisk which marks the spot as the centre of England, and down the succeeding slope at a rattling pace, our car behaving splendidly.

## At Stonebridge.

On arrival at the prettiest "half-way house" in the country we found Mr. Iden awaiting us on the terrace, and that Mr. Richardson and Mr. Drake, of the Daimler Company, had driven up a few minutes previously. It was half an hour at the least before the "observers" and a number of Birmingham pressmen were to be seen bowling along in a M.M.C. car (which, by the way, has seen service at Johannesburg and other South African towns), and they had scarcely time to find their feet before the first competitor was dismounting in front of the hotel. This was Mr. A. C. Edge, on an "Ariel." He was followed at brief intervals by the other competitors—ten in all. The five minutes interval (which was allowed on both the outward and homeward journeys) soon passed, and the men were off again to Coventry, except Mr. J. Urry, who decided to abandon the attempt on reaching Stonebridge.

## The Return Journey.

THE riders returned in about an hour. Those who were encased in oilskin coverings seemed comfortable enough, and one or two of the others looked little the worse for the rough time they had had. But there were at least a couple who were covered from head to foot with mud, and had one been provided with a camera a snapshot or two might have been secured which would have admirably suited the pages of any comic journal.

The adverse weather only helped to prove the good work which motor-tricycles are capable of. The distance from Bingley Hall to the turning point in Coventry was estimated to be nineteen miles. The following is a list of the riders, with the net time in which they covered the 38 miles:—1, A. C. Edge, Ariel, 2h. 23½min.; 2, J. R. Sharpe, Motor Manufacturing, 2h. 31min.; G. Sangster, Ariel, 2h. 31½min.; J. W. Stocks, Ariel, 2h. 54½min.; A. J. W. Millership, Ariel, 3h. 6½min.; O. Bush, Motor Manufacturing, 3h. 10½min.; W. Neale, Ariel, 3h. 24min.; W. Crouch, Motor Manufacturing, 3h. 25min. A. J. Urry and C. J. Garrard did not finish. A. Goodwin, who met with a mishap, rode the distance in 3h. 56min. The test was not so much for speed as efficiency, and the speed results will be considered in conjunction with the hill-climbing tests which took place on Wednesday. I will not attempt to describe our ride home. It was very dark, and snow fell during the greater part of the journey. Yet it was not an unpleasant ride, by any means. Our car travelled both ways without the slightest hitch, as did also that conveying Mr. Iden.

## Tuesday's Trials.

THE second day's trial of motor-cycles and vehicles came off on Tuesday. The judges appointed were Messrs. H. Sturme, O. P. Clements, C. R. Garrard, R. F. Hall, and T. H. Woollen. Three types of motors were eligible, namely:—Motor-quadracycles, to carry two riders; light motor-cars, weighing not more than 12cwts, to carry not less than two passengers; and motor-carriages, weighing more than 12 cwt., to carry any number of passengers according to the seating capacity. The start was from Bingley Hall (Birmingham), and the distance (to Coventry and back) was 38 miles. The results were as follows:—

## QUADRICYCLES.

|                       |             | h. | min. | secs. |
|-----------------------|-------------|----|------|-------|
| 1. C. Sangster .....  | Ariel ..... | 3  | 37   | 15    |
| 2. J. W. Stocks ..... | " .....     | 4  | 34   | 30    |

J. R. Sharp, Motor Manufacturing Company, also started but did not complete the distance.

## LIGHT MOTOR CARS.

|                          |                | h. | min. | sec. |
|--------------------------|----------------|----|------|------|
| 1. C. H. Palethorpe..... | Mors .....     | 3  | 19   | 15   |
| 2. E. Lisle .....        | Star .....     | 4  | 40   | 6    |
| 3. G. Austin.....        | Wolseley ..... | 4  | 58   | 15   |
| 4. G. Iden.....          | Princess.....  | 4  | 50   | 15   |

## MOTOR CARRIAGES.

|                 |              | h. | min. | sec. |
|-----------------|--------------|----|------|------|
| 1. Driver ..... | Iveagh ..... | 3  | 29   | 45   |

The weather was very bad, and the roads in a shocking condition. The time results are not the only facts to be considered in awarding the prizes, as the vehicles were under observation at various points of the journey in regard to stopping, starting, changing speed, steering, noise, visible vapour, and efficiency of springs, etc.

## The Hill-climbing Contests.

THE hill-climbing contests were brought off on Wednesday, the *cours* being Mucklow Hill, Halesowen, which is about a mile long, and the gradient very steep. Results:

## TRICYCLES.

|                    |                             | min.   | sec. |
|--------------------|-----------------------------|--------|------|
| 1. Millership..... | Ariel.....                  | 4      | 23   |
| 2. Stocks .....    | " .....                     | 4      | 40   |
| 3. Garrard .....   | " .....                     | 4      | 50   |
| 4. A. C. Edge..... | " .....                     | 4      | 57   |
| 5. Sharp.....      | Motor Manufacturing Company | 5      | 6    |
| 6. C. Sangster ... | Ariel.....                  | 9      | 0    |
| 7. Neale .....     | " .....                     | failed |      |

## QUADRICYCLES.

|                               |             | min. | sec. |
|-------------------------------|-------------|------|------|
| 1. Sangster and Garrard ..... | Ariel ..... | 5    | 18   |
| 2. Stocks and Millership ...  | " .....     | 7    | 3    |

## LIGHT CARS.

|                    |                | min. | sec. |
|--------------------|----------------|------|------|
| 1. Paethorpe ..... | Mors .....     | 9    | 29½  |
| 2. Austin .....    | Wolseley ..... | 11   | 2    |

## CARRIAGES.

|                      |              | min. | sec. |
|----------------------|--------------|------|------|
| 1. George Iden ..... | Iveagh ..... | 11   | 48   |

The hill was in an exceedingly heavy condition.

## THE "VIVINUS" MOTOR-VOITURETTE.

WHEN describing the motor-voiturette of the Société des Ateliers Vivinus, 244, Rue du Progres, Brussels, in our issue of June 16th last, we stated that the tightening of the driving belt was effected by means of a jockey pulley. From a recent inspection of a car of this type we find that we were in error on the point, the tightening and slackening of the belt being controlled by a special patented device, of which we are now able to give an illustration and a few brief particulars.

The frame of the vehicle is movably suspended on the rear axle in such a way that the position of this axle relatively to the frame can be varied by means of a system of levers actuated from the driver's seat. The frame, on which is the fixed motor *M* driving the pulley *P*, is supported on the axle *A* by springs *R* (one on each side of the carriage), which are supported by links *JJ*, so

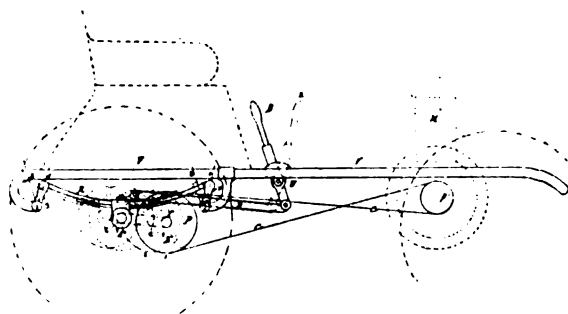


DIAGRAM OF BELT TIGHTENING ARRANGEMENT.

arranged as to form with the spring a parallelogram and consequently be able to simultaneously take up a certain forward or backward inclination and allow of a movement of the axle *A* relatively to the frame or *vice versa*. The axle *A* forms a part of the transmission gear *T*, comprising gear wheels *EE* and pulley *P*, connected to the pulley *P* by means of the transmission belt *C*, which is to be tightened or slackened, the pulleys *P* constituting the two ends of the transmission gear and the parts which are to be separated from or approached toward another. This movement is effected by means of the tightening device proper, which comprises a lever *B* placed within reach of the driver and connected by a rod *D* to a projection on the axle *A*, which is to be moved. The lever *B* has a fixed fulcrum at *U* on the frame *F*, which is a fixture on the front axle in the ordinary way.

The operation of the apparatus is as follows: The position 1 of the lever *B*, shown in the illustration by full lines, corresponds to a position of the transmission gear in which the belt *C* is slack. To tighten the belt the lever *B* is pushed forward to position 2, shown in dotted lines, which will cause by the movement of the connecting rod *D* a backward movement of the axle *A* with its springs *R*, and all that portion (*E E' P*) of the transmission gear which is rigidly connected with this axle; the links *JJ* inclining backwards (from position 1 to position 2). The movement of the axle *A*, and therefore of the pulley *P* (to position 2, shown in dotted lines), has the effect of tightening the belt. When it is required to slacken the belt again the lever *B* is moved from position 2 to position 1, and the axle *A* will be brought forward, the links *J* again inclining forward.

MOTOR-VEHICLES are expected to be a very prominent feature at the forthcoming Manchester Cycle and Motor Exhibition, at the Royal Botanical Gardens, Manchester.

## THE MORS MOTOR CARRIAGE.—VI.

BY VELOX.

(Continued from page 731.)

## THE COMMUTATOR SWITCH.

ALLUSION has been made on several occasions to the excellence and unique character of the commutator-switch designed by the Société Mors. Its main peculiarities consist in its compactness, the ease with which it can be manipulated, the entire freedom from sparking, and also that it is a unipolar switch for the dynamo, and bipolar for the accumulators.

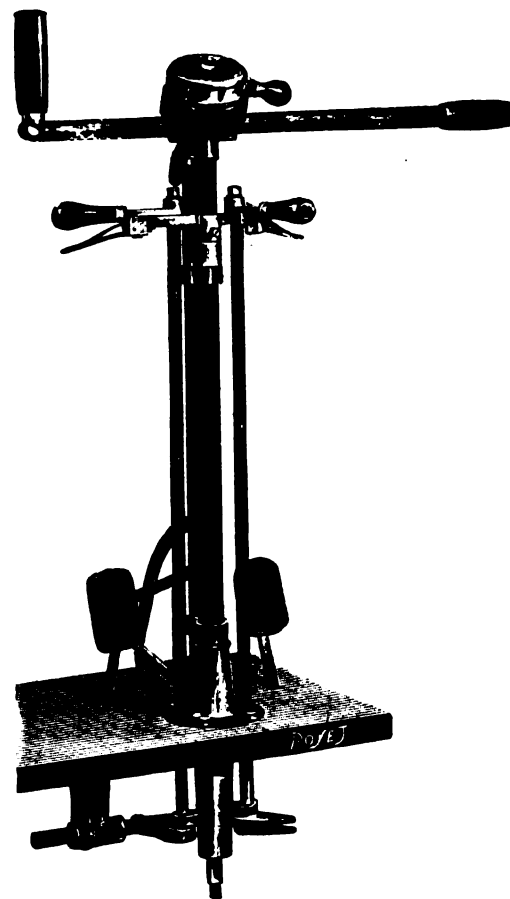


FIG. 17.

In Fig. 17 is given an enlarged view of the steering pillar and the various parts connected thereto. The switch is the most prominent feature, placed as it is at the head of the pillar, on the steering-bar. In form it resembles a shallow cylindrical box: projecting from one side is a hand-lever. The upper part of this "box" is of metal, whilst the lower part is of black insulating material. When the hand-lever is used it turns the metallic part round in its base, which is a fixture. The movable portion carries in its interior eight brushes connected in pairs, as is shown diagrammatically in Fig. 18. In this illustration the brushes alone are seen, but from two different positions; in the upper portion they are shown in plan, that is as if they were viewed from above when the outer metallic cover is removed, whilst in the lower portion they are seen in elevation.

The lower faces of these brushes are clear of any attachment, these making contact as presently explained. The upper faces are, however, connected in pairs, as previously described, the connection of course being wires conducting the electric current. This is clearly shown in the view showing them in elevation. The two outer brushes *a* and *h* are connected together, the intermediate ones, *b* and *g*, being similarly treated, while the two central pairs *c* and *d* and *e* and *f* are also respectively coupled. As has been stated, the whole of this upper portion containing these brushes is so made that it is capable of being turned on its axis by means of the hand lever. The axis of its movement is

shown in Fig. 18, and this permits the brushes to be moved from their position shown at *X*, *Y* until they are brought into the positions shown by the dotted lines *X'*, *Y'*, or *X''*, *Y''*. These positions correspond to the lettered indicator engraved on the outer surface of the metallic cover, viz: Dyn. (dynamo), accu. (accumulator), ch. 1 (charging the set of cells), or ch. 2 (charging a second set of cells).

The fixed (lower) portion of the commutator switch bears on its upper (interior) surface a series of metallic plugs, shown diagrammatically in Fig. 19. The movable brushes in the upper part are brought into frictional contact with certain of these plugs according as the position of the upper portion of the switch is

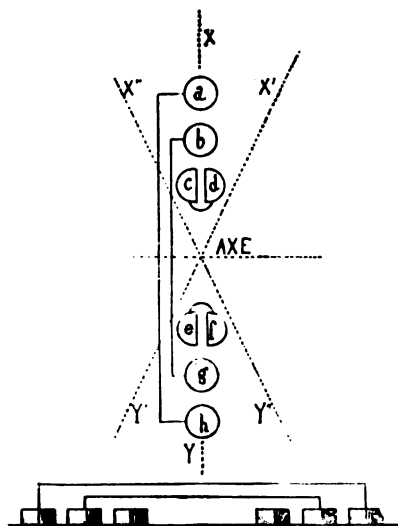


FIG. 18.

varied. In Fig. 19 only eleven of the plugs are shown; actually there are more, but these do not at present concern us as they do not contribute to the working of the switch, but are simply used to keep the brushes always at the same level, and to maintain the constant pressure of their springs.

Eight of these eleven plugs are connected in pairs by conducting wires (from their under surfaces) exactly as are the brushes in the upper part, and seven of them are besides connected up to various parts of the electrical apparatus by different coloured conducting wires, as follows:—

The Plug *B* is connected by a brown wire to "earth," or "mass."

The Plug *J* is connected by a blue wire to the negative terminal of the accumulators.

The Plug *G* is connected by a red wire to + terminals of the accumulators.

Plug *I* is connected by a green wire with the positive terminal of the accumulators.

Plug *F* is connected by a yellow wire with the negative terminal of the dynamo.

Plug *C* is connected by a white wire with the positive terminal of the dynamo.

Plug *A* is connected by a black wire to the entry terminals of the induction coils.

In addition, Plug *D* is coupled to *I*, Plug *E* to *J*, Plug *K* to *F*, and Plug *H* to *C*.

These plugs are so connected that the line of movable brushes is brought into the positions shown by the dotted lines (Fig. 19), the indicator on the outer surface corresponding with the lines marked in each case, respectively, Accu., Dyn., 1 Ch., 2 Ch., as shown. The current is taken then from the following sources:—

When the indicator is at "Accu." from the accumulators.

" " " " "Dyn." from the dynamo.

" " " " "1 Ch., the excess of current is used to charge No. 1 set of accumulators.

" " " " "2 Ch., the excess is used to charge the second set.

It will be well to remember that the switch should never be left in such a position as to be taking current from the accumulators

when the engine is not at work; the waste of current is enormous, and the accumulators will be so speedily discharged that when it is desired to restart the motor it will probably be found that the accumulators have been completely discharged, and that no spark can be obtained.

Another point to be remembered is that when the engine is running at full speed the switch should always be turned so that the accumulators are being charged by the excess of current generated. By this means the current taken from the accumulators when the engine is running slowly will be replaced. On the other hand, the switch should never be in such a position excepting when the engine is running at its full speed.

The dynamo may be made to charge the accumulators when the actual speed of the carriage is slow, so long as the engine is working at full speed, so that on occasions it may happen that current can be diverted to the accumulators both when the carriage is moving slowly and when it is moving quickly. On the other hand, if the carriage is travelling at full speed, whilst the speed of the motor is retarded by the "moderator" or "choke" valve, the switch must never be turned to deliver current to the accumulators, and it should rest either at the point at which current for firing is only taken from the dynamo, or else at that when the current is taken from the accumulators.

As a general rule, therefore, it may be said that the accumulators can always be charged excepting when the speed of the engine is retarded by the "moderator" or "choke" valve. It is merely a matter of judgment as to whether the excess of current generated when the motor is running at full speed should be used to charge either one portion or both portions of the battery of accumulators. This is the only function which is left to the judgment of the operator, and which is not automatic in its action.

To show how important it is that the commutator switch should be used with discretion, it may be mentioned that it is within the writer's knowledge that one user of the Mors car has maintained his accumulators fully charged, by judicious use of this switch, for over eighteen months. Not only had he had no recourse to outside aid for charging his accumulators, but he had maintained, if not improved, the condition of his accumulators by reason of the slow rate of discharging and charging them.

A word of warning may be given as to the necessity of keeping the accumulators and their terminals clean and dry. It is only in this way that perfect contact can be relied upon, for if

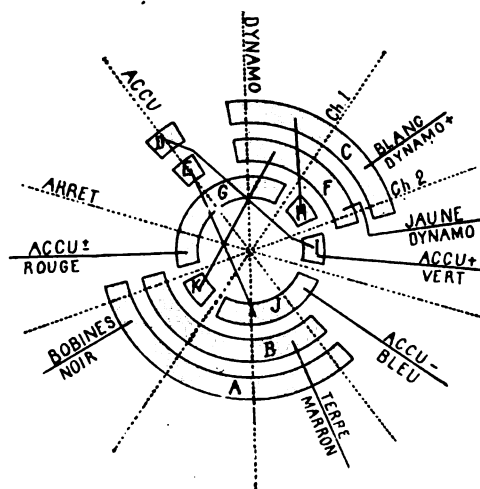


FIG. 19.

"creeping" or "sulphating" be permitted the contact will soon be rendered imperfect, and annoyance and trouble will ensue.

In the next section it is intended to give a complete diagram of the whole of the "wiring" of the Mors car, and then to consider in detail the transmission and change speed gear.

(To be continued.)

A NEW motor-car company is being established in Glasgow. It will be called the Albion Motor-Car Company, and will be located at 169, Finnieston Street.

## CORRESPONDENCE.

—8—

## A VOLUNTEER MOTOR-CYCLISTS CORPS.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—I notice that in your last issue you mention my having attempted to form a motor-cyclists corps. I shall be very glad to get this up if I can get a sufficient number of suitable men, who would supply their own machines. My suggestion is that the corps should be got together for home service, and after training, those members wishing to go on active service could be formed into an auxiliary corps. By doing this, no doubt, a larger body of cyclists could be formed, as, of course, there are many men who cannot leave their business, and yet would be only too pleased to be prepared to defend their country.

We certainly should not be behind our enemies in using all the resources that science can command for our defence, and I shall be glad to receive applications from any of your readers, who are prepared to join this proposed corps.

Yours faithfully,

E. HOLLOCOMBE CLIFT.

51, Sinclair Road, Kensington, W.,  
January 29th, 1900.

## THE CARRIAGE OF MOTOR-CAR SPIRIT ON RAILWAYS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—You will no doubt be interested in seeing a letter that we are compelled to send to our customers. The letter sufficiently explains itself without additional comment from me.

Yours faithfully,

Anglo-American Oil Company, Limited,  
F. R. S. HARRIS, K.H., Manager, London Branch.

22, Billiter Street, London, E.C.  
January 31st, 1900.

DEAR SIR,

The Railway Companies, after having carried Petroleum Spirit, (*i.e.*, Benzine, Benzoline, Naphtha, Gasoline, &c., &c.) for upwards of a quarter of a century with security and profit to themselves, are now attempting to impose conditions for its transportation to which we will not, under any circumstances, become a contracting party. The Railway Companies are seeking, without any justification whatever, to compel the sender to indemnify the Railway Company against all claims for injury to person or property arising directly or indirectly from the inflammable qualities of the said goods from non-compliance with their Regulations and Conditions as to packing such goods, and to pay full compensation for all injury to the Railway Company's servants and damage to their property so arising, unless it can be proved that the injury or damage is due to the wilful neglect of the Company's servants.

There are other terms imposed, as you will see by the extract from the Railway Consignment Note printed below, and which seem to us nearly as objectionable.

The far-reaching consequences which are possible under the wording of the consignment note will be apparent to you, and our reasons for refusing to assume such a liability require no explanation. We are perfectly willing to comply with the Railway Companies' Regulations as to packing Spirit, so far as these may be practicable, but we refuse to become responsible for loss or damage or injury of any kind after the goods have passed out of our control into that of the Railway Company.

Though we cannot honestly recommend you to assume a liability which we are unwilling to accept, we herewith notify you that we must decline, in the future, to execute your orders for Petroleum Spirit (if the goods are to be forwarded by railway) unless the same be accompanied in each instance by your written authority to us, to the effect of the enclosed form, to sign the Railway Companies' Consignment Note on your behalf as the Consignor or sender of the goods.

In order that you may know the unreasonable conditions which the Railway Companies are attempting most unwarrantably to force the trade to accept, we append these herewith: the Indemnity Clause, which is most objectionable, being printed in italics:—

"In consideration of the Railway Company consenting to carry the above-mentioned Goods, as above requested, I, the undersigned (Sender) do hereby undertake and agree as follows:—(1) That the Regulations and Conditions as to packing Inflammable Liquids (Class A), which appear in the General Railway Classification of Goods by Merchandise Trains, have been in all respects complied with in regard to the above-mentioned Goods; (2) *that I will indemnify the Company against all claims for injury to person or property arising directly or*

*indirectly from the inflammable qualities of the said Goods from non-compliance with the before-mentioned Regulations and Conditions as to packing such Goods, and will pay full compensation for all injury to their servants, and damage to their property, so arising, unless it can be proved that the injury or damage is due to the wilful neglect of the Company's servants; (3) that the said goods are to be carried at my sole risk, and that the Company are not, under any circumstances, to be liable for any loss of, or injury or delay to, the said Goods, except upon proof that such loss, injury or delay was due to wilful misconduct on the part of the Company's servants; (4) that the Goods are to be removed by the Consignee from the Station to which they are consigned within two working hours after delivery to the Consignee of an advice note of their arrival at such Station, and that in default of such removal, and so long as the Goods or any part thereof remain on the premises of the Company, the Company shall be entitled to charge and recover from me the sum of 5s. per ton per hour as and for liquidated damages for so long a time as the Goods remain on the premises of the Company, and further, if the Goods are not removed within twelve working hours after the delivery of the advice note, the Company may sell the Goods, in such manner and at such time as they may think best, and retain out of the proceeds of sale all the charges payable for carriage, and all charges and expenses incidental to such sale, and also all other moneys payable to them under or by virtue of this Agreement.*

"In witness whereof I have hereunto set my hand the day and year first above written.

"Signature of Sender)  
"or his Agent

We remain,

Yours faithfully,

ANGLO-AMERICAN OIL COMPANY, LIMITED.

THE Loomis Automobile Company, Westfield, Mass., is bringing out what they term a light park wagon, with speed from one to twelve miles per hour. A 2½-h.p. petrol motor is attached to the gear, thus leaving the entire body free from machinery and vibration. The car weighs, it is said, only 315 lbs.

THE Bureau of Combustibles in New York is turning its attention to the storage of petroleum-spirit, by motor-vehicle owners, and the head of the Bureau states that automobile owners are now violating the law in reference to the storage of this combustible and will hereafter be held to a stricter account for such violations.

THE Automobile Company of America, 32, Broadway, N.Y., whose extensive new factory is at Marion, N.J., are now using three-cylinder motors on their carriages, developing 10 h.p. An automatic starting device is said to be a very important improvement in their new motors.

THE Park Commissioner of New York City has granted a permit to a lady to run an automobile vehicle through Central Park. At first he was in doubt as to her ability to manage a motor-car, but she invited him to take a ride, and he sent his secretary instead. The latter was speedily convinced of her ability, and the permit was issued forthwith.

THE Yorkshire Motor-Car Manufacturing Company, Limited, has just been registered, with a capital of £50,000, to acquire and take over as a going concern the business now carried on at Bradford, in the county of Yorkshire, under the style of The Yorkshire Motor-Car Company, Limited, and the business now carried on at Halifax and Hipperholme, both in Yorkshire, under the style of Brown and Buckton, to adopt an agreement (a) between the Yorkshire Motor-Car Company, Limited, of the one part, and Robert R. Jackson of the other part, and (b) between John B. Brown and Thomas Buckton of the one part, and Robert Jackson of the other part; and to carry on business of motor-car factors and agents, cycle, motor-car, and vehicle manufacturers, etc.

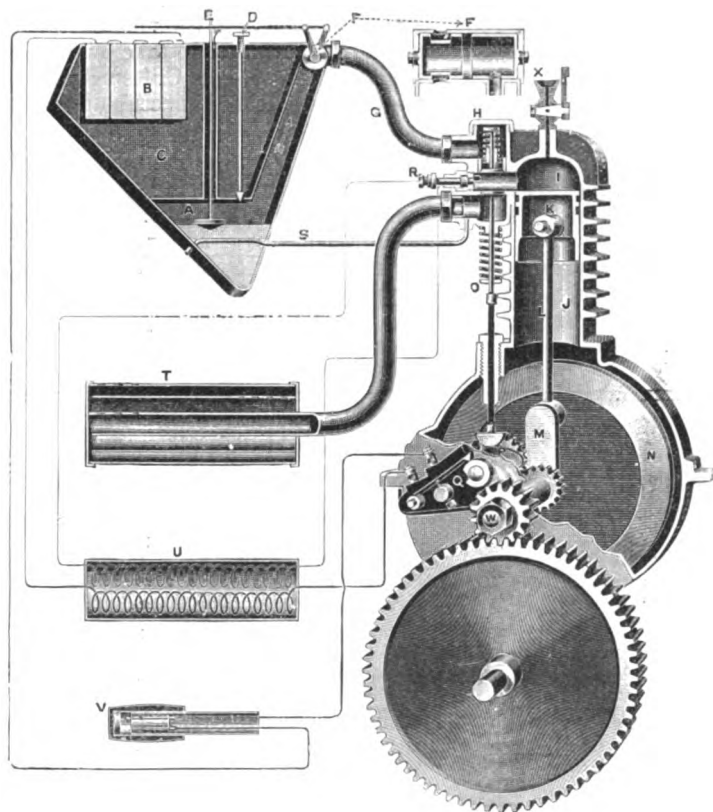
THE Buffalo branch of the New York Electric Vehicle Transportation Company opened its station at 240, West Utica Street, Buffalo, N.Y., recently. The building has a macadamised floor space of 22,000 feet, and is equipped, in addition, with an engine and dynamo room and offices. The new automobile station has at present two broughams, two hansoms, a five-passenger surrey, a phaeton, and a fourteen-passenger omnibus. The largest room is 100ft. by 200ft., and is at present used for instructing the new operators who are to run the carriages.



## THE MIDLAND CYCLE AND MOTOR SHOW.

(From Our Own Correspondent.)

THE fourth annual Midland Cycle and Motor Show was opened at Bingley Hall, Birmingham, on Thursday last week. The attendance was somewhat meagre, but during the subsequent days of the shows, the evenings especially, the visitors were more numerous. I admired the exhibits of cycles and motors at the show, but could not help noticing the paucity of visitors. The attendance was very thin indeed, and the attendants at the stalls had a monotonous time. One could not help thinking that if space could have been found for motor-driving or riding exhibitions at intervals during the evening, the attendance would be greater. One has to provide some attraction to those who are not interested in motor-vehicles from a buying point of view; the mere gazing at vehicles on a



SECTIONAL ILLUSTRATION OF COMPONENTS DION ENGINE AND CONNECTIONS.

- |  |  |
|--|--|
| A. Carburettor.  | L. Connecting rod.                     |
| B. Battery.  | M. Crank.                              |
| C. Spare tank.   | N. Fly wheel.                          |
| D. Needle valve for feeding carburettor.                             | O. Exhaust valve.                      |
| E. Indicating wire to show height of petrol in carburettor.          | P. Cam for lifting exhaust valve.      |
| F. Mixing chamber comprising vapour and air valves.                  | Q. Contact breaker for sparking.       |
| G. Tube through which mixture passes into motor through inlet valve. | R. Sparking plug for igniting mixture. |
| H. Mixture inlet valve.  | S. Tube to warm petrol.                |
| I. Combustion chamber.   | T. Silencer.                           |
| J. Cylinder.   | U. Induction coil.                     |
| K. Piston.   | V. Handle bar switch.                  |
|  | W. Driving pinion.                     |
|  | X. Compression tap.                    |

stand does not appeal to the crowd—certainly it did not at Birmingham on Saturday night at any rate; they want something which they can enthuse over, and this would serve the double purpose of attracting a larger "gate," and of proving the reliability of motor-vehicles and the marvellous ease with which they can be maneuvered. This is not only my own opinion, but also that of one whose experience in the motor industry is perhaps second to none.

The Motor Manufacturing Company, London and Coventry, staged a number of motor-vehicles, including the Iveagh, Princess, English Panhard, the Balmoral Chars-a-banc (illustrated in the last issue), motor-tricycles, etc. Details of the merits of these exhibits are given in another column in connection with the road and hill-climbing competitions.

The Automobile Supply Company, Birmingham, staged several cars, including a Renault and a New Orleans, which attracted a great deal of attention. This firm also showed a "quad" frame and a number of motor-fittings.

The Star Cycle and Motor Co., Wolverhampton, had a very fine exhibition of cars. This firm has devoted considerable thought and labour to the perfecting of their cars, which have,

in consequence, during the past season come very much to the front. They exhibited a number of testimonials complimenting them on the reliability of their vehicles and the success with which they had been run.

The Ariel Cycle Company, Birmingham, showed their various types of motor-cycles, including tricycles and quads. This firm has gained a reputation for the general efficiency of their productions, for which there appears to be a large demand. The accompanying illustrations give a sectional view of the various parts and connections of the Components Dion engine, carburettor, battery, etc., as fitted on the motor-tricycles of this company.

Messrs. Allard and Company, Coventry, displayed a motor-car capable of carrying two passengers. This is another firm which is forging ahead and making a name for itself in the automobile world.

Mr. Chas. T. Crowden, Leamington, had two cars on his stand, one propelled by steam. We also noticed a very fine specimen of workmanship in the shape of a small model motor-engine.

The Wolseley Sheep Shearing Company, Birmingham, exhibited their new Wolseley two-seated car, which caused much comment.

Thomas Smith's Stamping Works Limited, Birmingham, exhibited samples of work in connection with the motor trade, which certainly deserve the attention of manufacturers.

The Dunlop Pneumatic Tyre Company, Limited, Coventry, had on view for the first time their 3½-in. thickened edge tyre for heavy cars; also a hand-made wired-on tyre for lighter vehicles. This firm's goods are too well known to need comment at this time. The North British Rubber Company showed specimens of their Clincher pneumatic tyres (Bartlett's patent) for motor-bicycles and motor-cars; also solid tyres suitable for heavier vehicles, as well as the Clincher wired-on tyres for carriages. The new Grappler Pneumatic Tyre Company, Birmingham, had a good exhibition of motor-car pneumatic tyres, and are evidently keeping their eyes wide open for the development of the motor industry. A model of a small motor was displayed at the stand of Messrs. Linford and Wilson, Birmingham.

## DUNLOP PNEUMATIC TYRE COMPANY v. MOTOR-CAR COMPANY.

IN the Chancery Division of the High Court of Justice last week, it was agreed that a motion for an injunction to restrain the defendants from selling certain tyres on motor-cars should stand over for fourteen days, the defendants giving an undertaking in the terms of the notice of motion in the meantime.

## A PART OF THE PURCHASE.

## ACTION IN BOW COUNTY COURT.

MR. GEORGE TAYLOR, engineer, Bankside Works, Chelmsford, recently brought an action in the Bow County Court against Mr. H. W. Short, of Mile End, who, it was alleged, detained certain batteries included in a motor-car bargain. It appears that Mr. Taylor bought a motor-car from Mr. Short for £107 10s. At that time there were two extra batteries in the car. Mr. Taylor drove the machine, accompanied by his wife and Mr. Short, from London to Brentwood. At the latter place Mr. Short parted company with Mr. and Mrs. Taylor, who continued the journey towards Chelmsford. About a mile and a half out of Brentwood the vehicle came to a stop, and an examination is alleged to have revealed that the two working batteries were weak and the two extra batteries were missing. The defence was that the motor-car was sold "as seen" for £107 10s., and if the accessories had been included a higher price would have been demanded. The plaintiff said the machine "as seen" by him contained the two extra batteries, and the defendant's answer to that was that they were put in merely to be carried somewhere to be re-charged, and the plaintiff knew that he took them from the car. His Honour Judge French decided that the batteries were "seen" by the plaintiff as part of the bargain, and awarded him five guineas.

## AN OBSTRUCTING MOTOR-VEHICLE.

THE big motor-van belonging to Messrs. W. H. Smith and Sons, the Strand publishers, figured prominently in a summons heard at Bow Street Police-court the other day, the driver, Edward Akehurst, having been summoned by the police for obstructing the thoroughfare at Arundel Street, W.C. The evidence of Police-constable 21 E showed that the van was driven by Akehurst on to the crossing at Arundel Street and stopped there because two other of Messrs. Smith's carts and horses stood in such a position as to prevent the motor-van turning down the street. As the main portion of the van blocked the line of traffic going west through the Strand, there was considerable dislocation caused, and the constable said that though he pointed that out to the defendant and directed him to clear away, he refused to do so. The defendant said he would have gone on, but could not, and called a witness on his behalf. He was fined 10s. and 2s. costs.

## HORSE v. MOTOR-CAR.

HIS Honour Judge Sir A. G. Marten had a very important jury case before him on Friday the 19th ult., at Newport Pagnell County Court.

the plaintiff being Mr. Nathaniel Sturges, of Earls Barton, and the defendants the Newport Pagnell, Olney, and District Motor-Car Syndicate, Limited. On September 22, last year, Mr. Sturges exhibited a valuable mare at Tickford Park Horse Show, which secured the first prize. At night, in the dark, the mare was being ridden home when it was overtaken by the defendants' motor-car, which was speeding towards Olney. The animal became unmanageable, and galloped in front of the car, which ran into it, inflicting severe injuries. The claim was £20 for damages thus caused, while a counter-claim of £3 was entered for damages to the car, which ran into a ditch at the side of the road. A great deal of evidence was tendered on both sides, and the jury eventually found for defendants on the claim and for plaintiff on the counter-claim, each side to pay its own costs.

### ANOTHER MOTOR-CAR ACTION ACQUITTAL.

SHERIFF-SUBSTITUTE MACONCHIE has issued his interlocutor in the action at the instance of Thomas Woolard against the Edinburgh Autocar Company, Limited, in which the pursuer asked damages for having been knocked down by one of the defendants' cars in Newington Road. The Sheriff finds that the car was being driven on the proper side of the road and at a moderate pace; that the pursuer in crossing failed to keep a proper lookout, and that he had failed to prove any fault on the part of the defenders. The defenders are, therefore, absolved from the conclusions of the action, and the pursuer found liable in expenses. In a note the Sheriff observes that the pursuer had held his umbrella down over his face, and this was a most dangerous thing to do while crossing a carriageway. If the pursuer's version of the accident was a true one, the prima facie inference was that any fault there was must have been on the part of the pursuer. As regards the pace of the car, there was satisfactory evidence that the pace could not be above five miles an hour, and that could not be regarded as excessive.

### THE LICENSE QUESTION AGAIN.

At the Newcastle Police Court, on Tuesday, the Tyne Motor-Car Company, Limited, were summoned, at the instance of the Inland Revenue, for having kept six motor-cars without having taken out the necessary licences.—Mr. Speak, of the Inland Revenue Department, prosecuted. Mr. Turvey, a director of the company, said they had found the question of charges in a state of chaos. At Sunderland they only paid 15s., and at Newcastle £2 17s. was demanded. Mr. Roberts explained that the 15s. was the charge for a hackney carriage. The £2 2s. was the "light locomotive" charge. After some discussion as to the weight of the cars, the Bench inflicted a fine of £5 and costs, or one fourth of the maximum penalty.

### A FURIOUS DRIVING CASE.

At the Birmingham City Police Court, on Wednesday, before Messrs. Mapplebeck, Barrows, and Courtenay Lord, Mr. Frederick Lanchester was summoned for having furiously driven a motor-car along New Street. According to the evidence of Police-constable Harris (14 A), the defendant had travelled at the rate of fourteen miles an hour when there was a good deal of other traffic in the thoroughfare. He denied having driven at a greater rate than seven miles an hour, but the constable's evidence was corroborated by Sergeants Hodgkiss and Amphlett, and the magistrates finally imposed a fine of 40s. and costs, particularly in view of the fact that there were two previous convictions against the accused for similar offences. At the close of the case Mr. Lanchester uttered certain remarks on what he termed the "moral effect" of appearing in the police court, and made insinuations respecting the evidence of one of the officers concerned in the case, which the Bench called upon him to withdraw, reminding him at the same time that in making such statements he ran a risk of an action at law. He then withdrew the remarks complained of.

THE Automobile Association, Limited, of Prince's Road, Holland Park Avenue, W., ask us to point out that they are the sole agents for Mors motor-cars in this country.

THE Park Board of Baltimore, Md., has issued orders to keep petrol motor-vehicles out of Druid Hill Park, but electric vehicles are permitted free use of the park driveways.

It is announced that the Philadelphia Commercial Museum will promote an international automobile show. The show will commence about October 1st or November 1st, and will be open for thirty days.

THE Woods Motor Vehicle Company, of Chicago, has recently completed two electric mail wagons, which are to be sent to Washington. The U.S. postal authorities will test the new vehicles and report on the advisability of their use in large cities.

THE Chinnock Davis Manufacturing Company, of Beckenham Road, Penge, near the Crystal Palace, are now keeping a stock of motor-car spirit and other automobile requisites. They have also an expert motor repairer on the premises, storage room for all kinds of cars, and a motor-quadricycle on hire.

At a meeting of the Chicago City Council, on January 8th, Alderman Blake introduced an ordinance enacting that automobiles be provided with fenders of the basket sort, the fenders to be put on not later than April. The penalty for failure to comply with the ordinance is to be a fine of from £5 to £20. The ordinance was referred to the judiciary committee of the council.

THE Taipo Accumulator Company, Limited, has been registered with a capital of £25,000, to acquire J. G. Hathaway's patent, No. 2,299 of 1899, for improvements in the manufacture of electric accumulators and secondary batteries, to take over the business carried on by the said vendor at 101, Clifton Street, Finsbury, and to manufacture and deal in accumulators, batteries, electric vehicles, etc.

ACCLES-TURRELL AUTOCARS, Limited, is the title of a company which has been registered with a capital of £30,000 to acquire, under an agreement made by, this company with J. G. Accles and C. M. Turrell, the business of motor and motor-car manufacturers as now carried on at Holford Works, Perry Bar, Warwick, as Accles-Turrell and to develop and extend the same. The directors are J. G. Accles, C. M. Turrell, T. Pollock, and J. P. Bedson.

### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

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## COMMENTS.

**N**EXT Wednesday's dinner at the Automobile Club will be a notable one, for Major R. E. B. Crompton is to be entertained by his fellow-members prior to his leaving England for active service in South Africa. Major Crompton, who did good work with steam road trains in India many years ago, will take out an electric light corps, consisting of four company's officers, one Royal Engineer officer, and 46 non-commissioned officers and men. In connection with the corps will be two trains, each composed of a Burrell traction engine, a tender, carrying

fuel and water for a thirty miles' journey, a store wagon, and two four-wheel vehicles, lightly constructed on the lines of the gun carriage of a Maxim gun, but each carrying an electric searchlight projector and in addition a two-wheel vehicle fitted with a drum of electric cable. Half of the men are to be mounted on cycles. The corps will mobilise on the 22nd inst., at Chelmsford, and will go into camp until the transport is ready, which will probably be about March 2nd.

### An Appeal for Cycles.

TOWARDS the equipment of the company electrical engineers have already subscribed, and an effort is being made by the Automobile Club committee to raise £375 for the purchase of the cycles required by the men who will lay telegraph and telephone wire. Three cyclists can carry three sets of telephone and telegraph instruments and sufficient wire to lay one mile of field telegraph in ten minutes over ground practical to cycles, or twenty-five minutes if the cycles have to be pushed instead of ridden. Six cyclists can lay two miles of wire and so on. Each set of three carries an apparatus for tapping the wires, so that when ordered communication can be established between any two desired places. The utility of such service should be unquestioned, and the response of automobilists to the appeal to provide the necessary cycles should be prompt and complete.

### Oil Engine Plant Wanted.

MAJOR CROMPTON'S self-propelled searchlight train consists of a light compound traction engine, burning coal, and using as little water as possible. But he believes an oil engine plant would be preferable. The motor should be one that can use heavy oil. The Government have already been supplied with one by Messrs. Schuckert, of Nuremberg, of this class, but it is not self-propelled. The motor is a Daimler, and gives off sufficient power to get 65 ampères 80 volts, which is 5.2 kwts., equal in all probability to 8.2 B.H.P. or, say, 10 I.H.P. This points to the fact that it ought to be what is called a 12-horse Daimler. As the motor should run at 500 or 600 revolutions or higher if the makers prefer, it should either be coupled direct to the dynamo or should be arranged so that it could drive the dynamo by a high-speed belt or chain whenever the dynamo

is required. Such an engine would be capable of propelling itself and drawing after it a light wagon as tender containing some of the gear, so that it would practically compete with the 3-ton Thornycroft or Lifu lorries. As the providing of water is a difficult matter it would be a great advantage if it could be air-cooled, and in the case of the Schuckert set this is done by a large fan being fitted to cool the cylinder when running to drive the light, and Major Crompton thinks probably this would also do when running on the road. The speed on the road would not be required to be great—from three miles an hour on bad roads or up hill and possibly six miles an hour down hill. The major wishes to ascertain who are the best people to approach in this matter.

### Motor-Car Tours.

ON many previous occasions we have suggested that railway companies which now organise trips and tours along selected routes might well adopt the motor-car in connection therewith. Something of the kind mentioned is about to be undertaken by the Motor-Car Excursions Company, Limited, from whom we have received a guide showing what they are prepared to do for patrons. The aim of the new organisation is to arrange tours—similar to the coaching tours now familiar in many parts of the country—by motor-car. These outings will be organised all the year round for long or short periods, and the rates will be on an inclusive scale, to embrace cost of the journey, hotel expenses etc., so that the tourist will be able to "count the bill" of his excursion before the start. A good many cars are now under construction for the company, and the full operations will probably be commenced in April of the present year from various depôts at Llandudno, Birmingham, Stechford, Tuxford, near Newark, Liverpool and London.

### Some of the Trips.

FROM Birmingham a series of afternoon excursions to places within practical reach is announced, the fares including tea; while the day excursion rate includes another meal as well. Extending the idea, two, three, seven and fourteen days' tours are being arranged, embracing a good view of English scenery, such as would be possible within such limited periods by no other means. Tours in Wales, the Isle of Man, and other picturesque portions of Great Britain will be organised, and the development of the movement is well calculated to bring the motor-car into greater prominence as a vehicle for touring. So completely organised is the scheme that already many intending visitors to the Paris Exhibition have made arrangements to journey from the Midlands to London by motor-car, whence, by arrangement with a firm of tourist agents, they will go on to the French capital at one inclusive fare.

### The Directorate.

THE chairman of the directors of the company is Mr. Stephen Holman, M.I.C.E., his colleagues being Messrs. W. McKeand, T. Bush, and Thomas Morrison. The latter gentleman resides at Llandudno, where the offices are located. Mr. W. S. Cockson, of New Malden, Surrey, is the

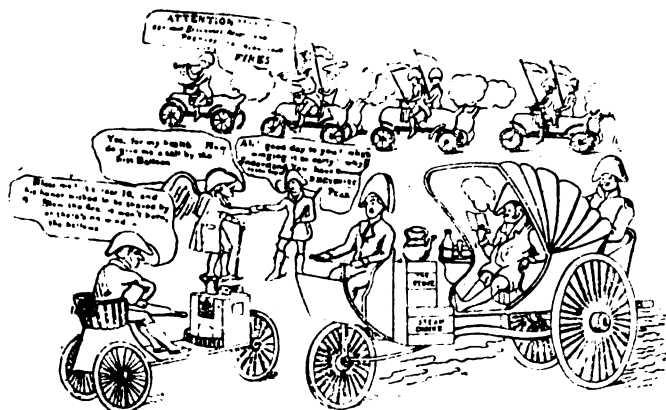
secretary, and the services of Professor Hele-Shaw, of the University College, Liverpool, have been retained as consulting engineer. In connection with the company, a Motor-Car Excursion Club is being organised, to the development of which the chief officials will voluntarily give their services, the advantages of membership including a discount of 15 per cent. upon the advertised rates of fares and a free insurance policy for £100 in the event of accident while on a trip.

#### From Stuttgart to Havre in the Snow.

WE learn that Mr. Campbell Muir, a well-known member of the Automobile Club, has been having some exciting experiences on Count Zborowski's new 24-h.p. Cannstatt-Daimler racing car, which he has just driven from Stuttgart to Havre. Although snow fell during the whole of the journey from Stuttgart to Paris, and lay three inches thick in many places, the car made a good average of twenty miles an hour. In going downhill the slow speed-gear was necessarily used.

#### Impending Attacks on Automobilmism.

WE referred in our last issue to the Bill which is being promoted by the Edinburgh Corporation with regard to the regulation of traffic. A conference of the secretaries of the Cyclists' Touring Club, the National Cyclists' Union, the Automobile Club, and Mr. Norman D. Macdonald, the chairman of the Scottish Automobile Club and director of the Edinburgh Autocar Company, Limited, was held on Wednesday, the 31st ult., to consider what steps should be taken to prevent the clauses affecting street traffic in the proposed Bill passing into law. It was felt that if the powers provided in the Bill are



THE COMING OF THE AUTOMOBILE.—From a Caricature Sketch of 20 years ago.

obtained by the Edinburgh Corporation, other corporations throughout the kingdom would apply for similar powers. It was agreed that the secretaries of the three associations should report to their respective committees. We learn that the Cyclists' Touring Club have decided to lodge a petition against the Bill. As stated last week, the Automobile Club will do the same.

#### The Automobile 1,000-Mile Trial.

THE entries for the forthcoming 1,000-mile trial of the Automobile Club have been sent in at a gratifying rate. Up to the 1st inst. no less than sixty cars and cycles had been entered—forty in the manufacturers' section and twenty in the amateurs' or private owners' section; since then several additional entries have, we understand, been received. Considerable interest is being shown in the trial both by automobilists and builders of motor-vehicles, and no effort is being spared to make the event a great success. We learn that the Duke of Portland has kindly consented to the trial vehicles running through his private drives from Worksop to Mansfield and back, and that the speed on these drives will not be restricted.

#### An Italian Excursion.

THERE can be no question as to the great progress that automobilism is now making in Italy, for from every part of the country one hears either of new industrial concerns springing up, of new automobile services being instituted, of new clubs being formed, or of fêtes and automobile meetings being organised. Turin, Milan, Rome, Naples and Florence, not to mention other towns, now possess their clubs devoted to the good cause, while it is in the first two cities that there exists the majority of the older-established firms of automobile constructors and dealers. Firms of more recent growth, however, are scattered about the country, and there is plenty of work for all, as, fostered by the clubs, the sport has become the most fashionable amusement of the day. Reference has been made already in these columns to the excursion which the members of the Turin Automobile Club propose to make to Nice during that town's far-famed automobile week, and we are now able to state that the Italian *chauffeurs* will set out on March 25th for this delightful trip. Travelling by way of the Cuneo-Limone road they anticipate arriving at their destination in time to witness the big race, Nice-Marseilles-Nice, in which *course* some of their number will doubtless actually participate. The expedition will be under the direction of the Club's president, Count Biscaretti di Ruffia. Another event of the automobile year in Italy will be the meeting at Bologna, which will take place, probably, during May next. A committee of management has already been formed, and the work of organisation will be pushed forward rapidly. The idea of the meeting appears to have originated with Cavaliere Rosatti, who is well known in the Italian automobile world and has already done much to further the movement.

#### England v. France in America.

THE departure of Messrs. Lawson and Pennington, of the British and Pennington Motor Companies respectively, to the United States was duly chronicled in these columns a few weeks ago. As was mentioned at the time, the party also included Mr. C. J. Wridgway and Mr. C. Jarrott, two of the best known racing motor-cyclists in this country. Very little has been heard of the doings of the party since they reached New York, but from a transatlantic contemporary which reached us by yesterday's mail we learn that Mr. Jarrott "the amateur motor-cycle champion of Europe, is anxious to race for 5,000dols. aside, the money to buy a trophy, for Mr. Jarrott does not ride for cash. He said that he was willing to ride any distance on road or track. Henri Fournier, the noted French automobilist, promptly announced his intention of accepting Jarrott's challenge. If the match be arranged, and it probably will be, the Frenchman will ride an American cycle driven by an American motor. Both men are to ride in the next Paris-Bordeaux race." Thus we are likely to hear of a motor-cycle race in America between an English and a French crack. The result will be awaited with interest.

#### Artistic (?) Absurdities.

IN the absence of race meetings and summer carnivals our cycling contemporaries are without two fruitful subjects for illustration, and some of them seem to have attached themselves to the motor-car for the purpose of securing amusing or silly sketches. We use the two adjectives, for occasionally—but only occasionally—have we seen the lighter side of automobilism fitly illustrated. Most frequently the drawings of motor-cars are atrocious, and the humour is, like Truth, only to be found at the bottom of a very deep well. When the pencil is employed to raise a smile with the artist we are gratified; but when its use only develops a broad grin at the editor who inserts such artistic (?) productions we are sorry; and must warn our *confrères* not to allow such things too frequently. Human nature can't stand it.

**Contemplated  
Motor-Car Services  
in North Wales.**

AT the last meeting of the Beaumaris Town Council a letter was read from Mr. J. H. Burton, in which that gentleman stated that although the project for working a service of motor omnibuses had fallen into abeyance, owing to the belief that motor vehicles were not yet sufficiently reliable for such work, he was willing to take shares to the extent of £500 in a soundly-constituted company promoted with the object of providing a satisfactory means of conveyance between Bangor Railway Station and Beaumaris by any method that did not involve alteration in the present roadway. The communication was referred to a committee.

**A Wonderful Idea.**

OUR cycling contemporary *Wheeling* is just now devoting a large amount of its space to war news in a style almost worse than *Yankee*, the first half-column being wasted in "Yellow Press" headlines. The question of the introduction of cycles into the Army on an extensive scale is the *raison d'être* of this departure, but this week their contributor, by venturing on the subject of automobiles, gets a little out of his depth. It appears that he has just heard of the automobile gun carriage illustrated in our issue of the 6th October last, and this leads him to make the wonderful suggestion that "If the Government drew up such a specification as the following it would prove of the greatest service:—A self-propelled wagon capable of carrying not less than eight tons, rolling on wheels of 6ft. diameter. The sides and ends of wagon to be of stout wood deep enough to float the whole body in crossing a swollen spruit or river. The motive power to consist of a compound-condensing engine (vertical inverted type, as used in river launches) and a high-pressure multitubular boiler. The engine to drive loaded waggon at a maximum speed on the level of eight miles an hour. Engine to be provided with a winch, anchor, and 300 yards of wire cable. The wagon to be provided with a light steel platform, carried above the tent, on which may be mounted an automatic gun. The interior of wagon to be fitted as a complete armourer's shop, consisting of lathe, brazing-hearth, taps, dies, and numerous small tools. Also all necessary replacements in the way of cups, cones, balls, bolts, and tubing, besides tyres, and the necessary material for repairing the same. The wagon to carry a quantity of spare rifle ammunition besides its own rounds of Q.F. shell cartridge."

**Altogether Too  
Preposterous.**

THE idea is that the vehicle would form a sort of cyclist's movable base. "Were I drawing up the specification," wisely remarks the contributor in question, "I should leave a great deal of the detail to the builders in the case of both wagon and engine. Of course the use of the travelling shop would not be limited to cyclists' needs, as many a small piece of gun mechanism could be repaired or replaced close to the front." The war with the Boers has led to the projection of many preposterous schemes, but none have equalled the one above outlined. The idea is altogether too ridiculous to merit serious consideration—even in *Wheeling*.

**Manchester  
and  
Motor-Cars**

THE number of motor-cars and wagons running in our streets is increasing rapidly, and a correspondent of the *Manchester Guardian* says that with long lines of road almost on a dead level, such as those that lead from the city of Cottonopolis to the country districts of Cheshire and South Lancashire, and also to some of the large manufacturing towns, there is probably no centre of population where their use is so likely to prove a complete success. The pavement of Manchester streets seems well adapted for this traffic, and though several of the local authorities are complaining loudly that some of the heavily loaded motor-wagons are exceedingly destructive to the macadamised roads, they will find probably that we shall have

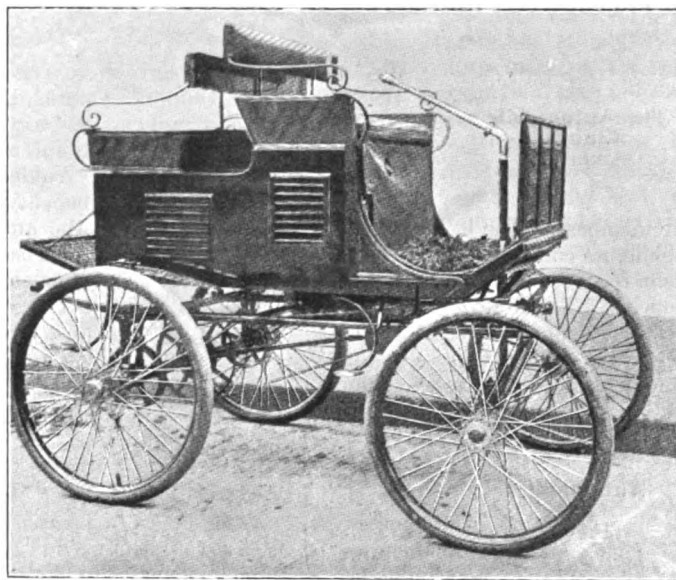
shortly a rather lighter build that will do really less harm than the narrow wheels and heavily-shod horses which now traverse our thoroughfares. These lighter wagons will also be much more easily worked about the streets." Doubtless the forthcoming tour of the Automobile Club in the locality will give a great impetus to the movement in and about Manchester.

**Automobiles  
at the  
Paris Exhibition.**

ENGLISH firms engaged in the automobile industry should note that the committee of the automobile section of the Paris Exhibition have decided not to entertain any applications for space in the Vincennes section which may be made after the 15th instant. A very considerable portion of the space has now been allotted and no time should be lost by any intending exhibitor who has not yet secured his stand. The first of the competitions organised by the A.C.F. at Vincennes will commence on Monday, May 14th, and will be reserved for touring cars.

**The Baldwin  
Steam Dog-Cart.**

FOLLOWING the Stanley and Whitney vehicles, quite a number of different types of light steam cars are beginning to make their appearance in America. The steam dog-cart, for either two or four persons, shown herewith is built by the Baldwin Automobile Company, of Providence, R.I. The car is said to have already undergone some very severe tests. One of the noticeable features is that the boiler, engine, and driving mechanism are entirely enclosed. The boiler contains some 300



tubes, and it is estimated that it will stand a pressure of 1,000 pounds, although the working pressure is but 100 to 125 pounds per square inch. The engine is steam-jacketed and weighs only thirty-eight pounds. It will, it is stated, develop from 4 to 6 h.p., is reversible, and is fitted with nickel-steel valves and valve faces. The exhaust steam as it leaves the engine is conveyed to a special combined condenser and vaporiser, and from there is returned to the water tank. In hill climbing, where the steam used is considerable, the surplus passes through an ingeniously-devised muffler and escapes without noise. The boiler is fired by means of petrol. The exhaust steam passes through a coil in the petrol tank and raises the temperature so that a slight pressure is automatically obtained without the use of the hand pump. The burner beneath the boiler is regulated by the boiler pressure. The tanks for carrying water, fuel, etc., are so constructed that the contents are not affected by the motion of the carriage. From the engine the power is transmitted to the rear axle by a single central driving chain. Ample brake power is provided, while the road wheels are of the cycle type fitted with pneumatic tires.



### Motor-Cha-a-Bancs for Hastings.

THE Corporation of Hastings has decided to grant licences to two motor-char-a-bancs in the town. Applications for the licences are to be sent in by the 15th inst., and applicants must forward a sketch design of the car in respect of which a licence is applied for, and full particulars as to the motive power, mode of construction, and size of the car, the number of persons proposed to be carried, etc. No application will be considered unless the applicant undertakes to have the car ready for plying for hire by Easter next.

### Motor-Cars for India.

A FORTNIGHT ago we published in this column an extract from *Indian Engineering* in which it was stated that it would not be a bad speculation for a company of wealthy shareholders to start motor-traction over long distances in India. Curiously enough one of our visitors during the past week was a gentleman from the Dependency who is keenly interested in the development of automobilism, and whose primary object is to obtain several steam vans or waggons suitable for the transport of goods on the roads in India. Asked as to his opinion of the relative merits of the various propelling powers, he remarked that steam was, in his judgment, the only satisfactory power for the peculiar conditions prevailing in that country, the difficulty of obtaining motor-car spirit in the up-country districts not permitting of the employment of petrol motor-vehicles, while the available supply of fuel, both wood and coal, should materially assist the use of steam waggons. We understand that the gentleman referred to is already in negotiation with the leading English builders of steam cars.

### The Automobile Club of America.

WE learn that the board of governors of the Automobile Club of America has decided to make arrangements for a series of lectures which the Club intends to hold in the club-rooms in the Waldorf-Astoria in New York, for the benefit of the members. The lectures are to form a history of the automobile, its construction, operation, etc. Arrangements have been made for lectures by experts on the various kinds of horseless vehicles. The library committee of the Club is busy working on a catalogue of books bearing on the subject of automobiles. The committee of "runs" is also engaged on the preparation of an itinerary for the spring excursions.

### Automobiles in Paris.

COMPARATIVELY speaking very little automobilism has been indulged in of late in Paris, for the miserable weather has deterred all but the most enthusiastic amateurs, or those actually engaged in the industry, from motoring to any extent. At this time of the year, in place of the handsome cars which one notices in dozens, if not in hundreds, during the season, there are to be seen numbers of half-finished, uncouth-looking vehicles wending their muddy way up the Champs Elysées en route from the constructors to the carriage builders. To the "man in the street" these latest types of automobiles appear nothing more or less than seething masses of machinery mounted on wheels provided with grossly exaggerated and hideous pneumatic tires, but the *chauffeur* views them differently, and follows their worm-like progress through the traffic with admiration. He sees in them strength and beauty of design, he appreciates the ingenuity displayed in their construction, and he listens with delight to the even rhythm of their engines. These strange-looking vehicles appear to hunt in couples, and hardly a day passes, writes our Paris correspondent, that "I do not see a brace of Panhard cars being driven in from Ivry to one or other of the big firms of *carrossiers*. Many of these new cars are of the 12-h.p. type and the sight of them at once brings to mind the thought of the possible consequences arising from their employment by young *chauffeurs* desirous of emulating the deeds of De Knyff or of Charron. I rather fancy

that the operation of crossing the Champs Elysées during May and June will be a nerve-trying ordeal for the humble pedestrian, unless, of course, all the wonderful police regulations of which we have had rumours are brought into force. Mention of these powerful cars reminds me of an incident which took place on the Boulevard des Italiens the other afternoon. An unfinished 16-h.p. Mors, out for a trial, had just passed me when a terrific report occurred, quickly bringing to the spot a crowd of excited Parisians. Little or no notice was taken of the car, which proceeded smoothly on its way, but the crowd hung about for a good ten minutes anxiously regarding the windows of the neighbouring houses in momentary expectation of the appearance of a murderer or dynamiter, and indulging frequently in all manner of conjectures as to the origin of the report. Knowing that the driver of a high-powered Mors can, at will, produce this explosion by suddenly breaking and rapidly re-making contact by the button fixed to the steering-wheel, I had not occasion to cogitate as to the why and wherefore of the sound, and excited allusions to possible dynamiters by my neighbours in the crowd left me quite unmoved."

### A Motor-Car for the Klondyke.

M. DELAMARRE, a member of the French Automobile Club, has lately reached France from the Klondyke. He proposes to shortly return to the gold fields, taking with him a Bollée voiturette. Our contemporary, *La France Automobile*, to which we are indebted for the information, looks forward to the publication of an article on motor-touring in Alaska. It should prove interesting reading.

### Roads Reserved for Pleasure Vehicles.

LAST week we referred to the proposals of the City of London Corporation regarding the exclusion of "locomotives" (in which the City Solicitor's department claim automobiles) from the streets. Curiously enough the New York municipal authorities are just now considering the question of traffic regulation. One of our Transatlantic contemporaries in its last issue to hand remarks that "at last action is proposed looking to the rescue of Fifth Avenue, New York, from the trucks and other heavy vehicles which now so seriously interfere with the pleasure traffic. This is effected by the insertion of a clause which restricts traffic on Fifth Avenue, as contemplated in a proposed ordinance, viz., that all trucks, express and delivery waggons be barred from Fifth Avenue between the hours of 2 and 7 p.m., from Fifty-ninth to Twenty-fifth Streets, and that north of Fifty-ninth Street to 110th Street they be barred at all times." This matter of the traffic in the streets of great cities is becoming increasingly pressing, and the sooner the motor car becomes universal the sooner will the solution have been found, as Mr. Crompton amply demonstrated in his paper at the Automobile Club a few weeks ago.

### A Useful Compilation.

A COMPILATION has been made by Mr. James T. Allen, examiner of the United States Patent Office, of all patents on carriages propelled by electricity, gas, steam, spring or other power, granted by the United States from 1789 to July 1st, 1899. The volume will contain photographic reproductions of all the drawings of the patents, together with a description of the nature of the inventions, the essentials of the specifications, the claims in full, and a complete index; also, a list of all references cited when the patents were pending as applications and of interferences, parties to them, and decisions. The compilation will also include complete illustrations of all patents regulated and classified under traction engines, portable engines, traction wheels, electric locomotives and other classes of an analogous character, but not strictly pertaining to the automobile industry. The volume will contain a digest of about 500 patents, and will be published by a Washington firm.

# THE NEW DARRACQ (LEON BOLLEE) MOTOR-CAR.

AT the recent Motor-car Exhibition in Paris, Messrs. A. Darracq and Co., of Quai de Suresnes, Suresnes, exhibited a new light motor-carriage, of which a general view is given herewith in Fig. 1. The vehicle is from the designs of M. Leon Bollée, and is fitted with a horizontal single-cylinder petrolcum-spirit motor of the type used on the well-known Bollée voitures; it is, however, of 5 h.p. The ignition is by means of a lamp and an incandescent tube, while for cooling purposes, ailettes, or radial discs, cast around the cylinder, are relied upon. The motor, as will be seen from the plan (Fig. 2), is placed in the fore part of the frame, where it is fully exposed to the air. The transmission is effected by a belt running on stepped pulleys on the motor-shaft and on a counter-shaft, the motion being communicated from the latter to the rear axle by a pinion on the counter-shaft engaging with a cogwheel on the axle. The shifting of the belt is effected by an ingenious contrivance consisting of two inverted stirrups, which give the advancing edge of the belt an inclination to the pulleys. The variable-speed gear is controlled by a hand wheel furnished with five balls, each corresponding to a different speed; this wheel is arranged on the standard underneath the steering hand wheel. For each change of speed the wheel is raised, the ball corresponding to the desired speed brought into position, and the wheel dropped again, when it remains in that position.

The reversing gear is controlled by a vertical spindle with a horizontal handle *Q*, within easy reach of the driver; the connection being by a connecting rod and bell crank to pinions behind the fly-wheel. A friction clutch is provided on the countershaft, controlled by foot pedals, by means of which the motor can be instantly cut out from the transmission gear. In front of the driver are two pedals, *P* and *P'* (Fig. 2), one of which throws out the clutch, and the other both disengages the clutch and applies a brake. There is also a powerful hand brake (Fig. 2), worked by a lever *L*, provided with a notched segment, which retains it

in any position. The steering is by means of the hand-wheel *A* connected with the front wheels.

The motor and transmission gear are all mounted on a standard frame, to which any type of body can be attached. Provision is made for the tightening of the belt, while storage accommodation is provided for motor-car spirit sufficient for a run of 200 kilometres. The car, which is fitted with cycle-type wheels and pneumatic tires, can, it is claimed, attain a speed of from twenty-eight to thirty kilometres per hour. One of the chief features of this car is the care which has been taken to make it as easy as possible to look after, the parts being much more accessible than usual. We are indebted to *La France Automobile* for the illustrations.

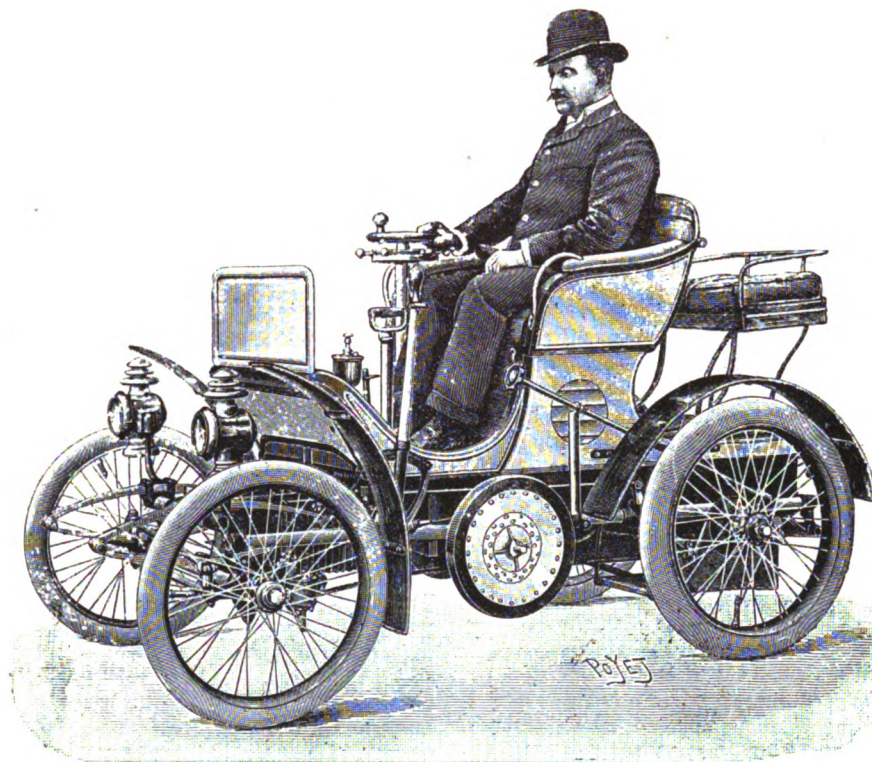


FIG. 1. GENERAL VIEW OF THE DARRACQ (LEON BOLLEE) MOTOR-CAR.

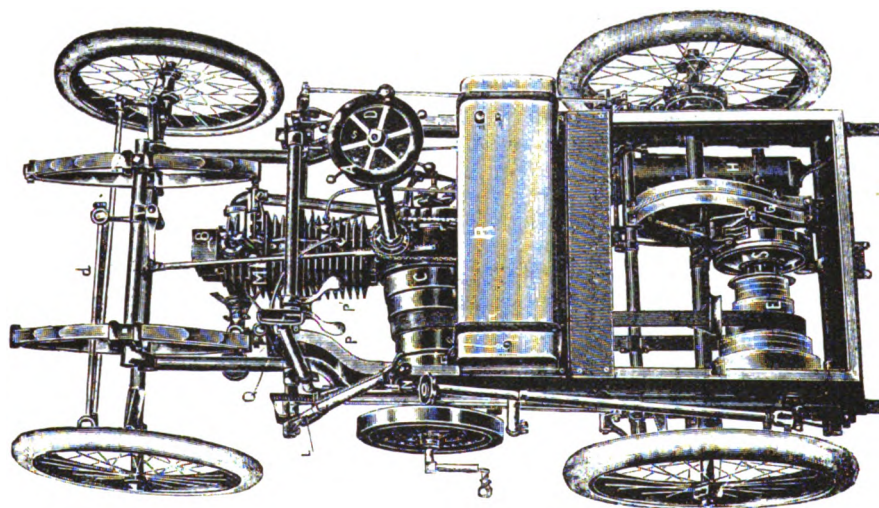


FIG. 2.—PLAN OF DARRACQ (LEON BOLLEE) MOTOR-CAR.

In a recent issue the *Electrical World*, of New York, remarks that "Automobilism is perhaps the art that has most enlarged the use of electricity during 1899. And yet the work has been largely tentative and experimental. No one familiar with the situation can question for a moment the rapid growth of this industry, not wholly, it may be, on electrical lines, but looking to electricity for some of the best and most profitable developments. It takes time to break away from traditional forms and ideas, but proof positive as automobilism now is of that fact, it is not less evident that the cumulative changes and improvements are bringing about a very rapid advance which, when looked upon from the distance of a few years hence, will then be seen to have been revolutionary."

M. CHAUDIÉ, Governor of French Western Africa, has just made an interesting trip in his motor-car. He started from Kati on the Niger, a little

village a few miles from Bamako, on January 22nd, and arrived at Toukouto on the 27th, whence he was able to take the train to Kayes, where his business led him. The part of the journey from Kati to Toukouto was entirely performed in a motor-car, and in five days M. Chaudié completed a journey which had previously taken him fifteen. M. Chaudié is now busy in organising a complete service of motor transport, which he considers will be invaluable in opening up commerce in French-Western Africa.



## HOLIDAYS ON A MOTOR-CAR.

## "LOG" OF A JOURNEY TO LANCASHIRE AND ELSEWHERE.

BY EDGAR SOAMES.

(Concluded from page 760.)



FROM August 26th to September 4th we remained at home, taking a few short runs in the interval. On the latter date we were again on the move, Weymouth being this time our objective. Having business to transact at Horsham, in Sussex, we were unable to choose the most direct route, and made therefore for the Brighton road at Croydon, and followed it as far as Crawley. After the long but gradual rise to Merstham, the road, with the exception of Redhill, is an easy one, with a fine surface for the most part, but a protest must be entered against the shocking condition of the road for two or three miles the far side of Croydon. Its bumpiness is a reproach to that go-ahead borough, and if allowed to continue will rob the town of its reputation as a well-administered community. There are other roads, too, within the Corporation's boundaries which require prompt attention. A little before reaching Horley we encountered an old lady driving a donkey in a small market cart. Immediately she saw us she held up her hand emphatically, and continued to do so for the few seconds that it took her to stop the animal, alight, and get to her Noddy's head. As a matter of course we waited till the lady had her animal in hand, and then proceeded, only to find that the donkey was utterly indifferent to our machine. Automobilists are directed to halt when requested by any person "having charge of a restive horse." Query, does horse include donkey? It need hardly be said that without legal enactment any auto-carist of gentle instincts would pay regard to signals of distress from a lady, whether with a donkey or without, but it goes against the grain to be frequently pulled up without reason. In passing we may remark that auto-caring furnishes a valuable touchstone for testing the quality of "ships that pass in the night." It frequently happens, we regret to have to say, that riders and drivers of both sexes, from whose appearance one might expect that they were gentle-folk, after hoisting the signal to stop—often entirely without cause—forget to convey their thanks for the consideration they have claimed by either word or gesture, presumably because there is nothing about it in the Act. The main road was left at Crawley, whence a rough seven miles of pretty lanes leads to the quaint old town of Horsham. Our business at Horsham occupied longer than we expected, and it was dark when we reached Petworth (fifty-one miles), where we spent the night. Petworth is a delightful old-world little town with beautiful scenery on each side.

Next morning, in lovely weather, we set out for Salisbury. Our way lay through Cowdray Park, the seat of Lord Egmont; thence through fascinating lanes, over some of Hampshire's breezy commons, on to Petersfield, where a fresh stock of petrol was taken on board. Between Petersfield and Winchester the roads were excruciatingly rough, owing to the drought. The scenery changes entirely when the Downs near Winchester are approached, but the roads improved not a whit till we got to the top of Cheese-foot Head. From there we enjoyed a long run down into the cathedral city, with the engine stopped. The roadmen of Winchester were engaged in the congenial task of repairing one of the principal streets with metal laid nearly a foot deep, which caused us a short stoppage and much concern for the rubber tires. When the authorities take to repairing roads in half sections at a time, what a boon it will be to all who go about on wheels! From Winchester to Salisbury we took the longer but easier road through Romsey. Motor-cars do not seem of frequent occurrence in the town renowned for its ales, judging by the interest

with which our car was regarded by the school children. Pushing on, we had a fine view of Salisbury Cathedral from the top of a hill six miles distant from the city, and as we approached nearer over level country the famous church, with its beautiful spire, dominated the whole scene, and the setting sun in the background lent the colour wanted to complete the picture. The distance for the day was sixty-five miles. At Salisbury an opportunity was afforded of making a comparison between horses and motors as a means of touring the country, for we had as fellow-guests at the hotel where we stayed the night an American and his friend, who were on tour with a coach and four. The day they arrived they had travelled no more than twenty miles, and for the following day they had assigned to themselves the same moderate distance. To attend them and their horses they carried a bodyguard of three servants. One man was able to do all that we required, both in the way of driving and attending to our car, and many auto-carists dispense with even that amount of help. As to distances, we could maintain, on anything like good roads, an average of sixty miles a day without trouble.

During the night a heavy thunderstorm, accompanied by torrents of rain, broke over the countryside, and delayed our start the following day until twelve o'clock, and then there was the cathedral to be inspected *en route*. Our road lay over the Downs, and the surface, which the day before had been deep in chalk dust, was, at first, a sticky mud, which, as it gradually dried, developed into unpleasant ridges and ruts, and materially interfered with our speed, while, in addition, the hills were constant and steep, though not long. After running twenty miles we became aware that something was wrong with the identical carriage spring which had given trouble in the "North Countree," and we found, on pulling up, that one of the outside leaves had given way, which would necessitate a new top and bottom. A halt was made at the village blacksmith's at Pimperne, but that worthy, perhaps finding business slack, was digging potatoes a mile away. However, a block of wood and a piece of cord were borrowed from his shop, and the spring being temporarily repaired, our way was resumed with some misgiving and much bumping, the block allowing no play to the spring. For some time we went very slowly, until we were sure that the improvised arrangement would last out the journey; the need for caution was trying, as the roads were improving and we were already behind time. We passed through Blandford, steering for Dorchester, and then for Weymouth, which was reached without any further adventure just at dark, the record for the day being forty-eight miles, but they were bad ones and accomplished under unfavourable circumstances.

We had five clear days to spend at the pleasant naval town, and the first thing to do was to get the damaged spring replaced: for this it had to be sent to Dorchester. Next a fresh supply of petrol had to be secured, but in this matter we were in for some disappointment. The agent mentioned in the published list was Messrs. Whitehead, of torpedo fame; that firm, however, informed us that they were not dealers in the spirit, but only kept enough for their own purpose, which was the running of launches, with motors of the same make as our own, for the purpose of catching torpedoes. After explaining our awkward predicament, our store being practically exhausted, they had compassion on our need, and obliged us with two gallons. This was not sufficient to carry us far, so we had to go over to Bournemouth, where we found we could obtain as much as we required.

We started for home again on September 12th, and this time were able to take the nearest route. It may be mentioned that we had gone out of our way on the out-journey more than we need have done in order to avoid the New Forest roads, which we heard were just at that time in particularly bad condition. We left Weymouth about an hour before noon, and pointed first for Wareham, finding the roads in very fair condition. Lytchet Minster, Parkstone, and Ringwood were the next places passed through. In a narrow part of the road, before arriving at the last-named place, we met a brewer's dray, drawn by four horses, with one man in charge. Approaching carefully, as is our wont, until we could tell how the horses would take the unaccustomed sight, we were alarmed to see the off leader swing half round, dragging its fellow with it, and threatening every instant to complete the right-about. This must almost certainly have meant

the capsizing of the cumbrous wagon, for if persisted in the wheelers would be bound to follow, and there was not sufficient width in the lane for the lengthy concern to execute a half revolution. The driver with his voice did all in his power to calm his animal's troubled nerves, while our driver, having stopped the car, succeeded in reaching the horse's head, and once more getting it into the straight. It was then found that some of the harness had given way, and the back part of it dropped over into the road. This, however, was soon rectified, and we once more started on our way, the drayman remarking that the horse had given him trouble in this manner before. The folly of sending out one man in charge of four horses seems little less than criminal, and is unfortunately calculated to bring disaster not only upon the driver, but upon innocent users of the highways too. On the whole, horses give us less trouble now than they did eighteen months ago, and on an average only about one in ten takes any serious notice of our vehicle. An exhilarating run through the New Forest brought us in due course to Romsey once more, and so to Winchester (sixty-seven miles) without further incident than the temporary stopping of our pump on a hill between Hursley and our destination for the night. At Winchester (the "George" Hotel) we found more comfortable accommodation than we had experienced hitherto on our jaunts, though the hostelry lacks a stable of its own. It was borne in upon us throughout our holiday, as it has often been before, that English hotels are not what they might be.

Next day was to be the longest in mileage of our tour—seventy-two. We chose the road through Alton, Farnham, and Guildford in preference to that by Basingstoke and Bagshot, and we found the roads for the most part in magnificent condition. Lunch was taken at Farnham, and an early tea at Ripley. Bromley was reached in good time for dinner.

Our holiday was now drawing to a close, but we had one more item on the programme—to "assist" at the inauguration of an automobile exhibition in connection with the British Association's meeting at Dover. With this in view we set out for Folkestone (sixty-four miles) *via* Maidstone, Harrietsham, and Ashford, on Saturday, September 16th, and stayed there for four days in company with the Automobile Club, spending the Tuesday at the Athletic Ground at Dover, whereat the exhibition was held. On Wednesday, the 20th, we returned home by the same route, and thus ended our very enjoyable summer holiday of 1899.

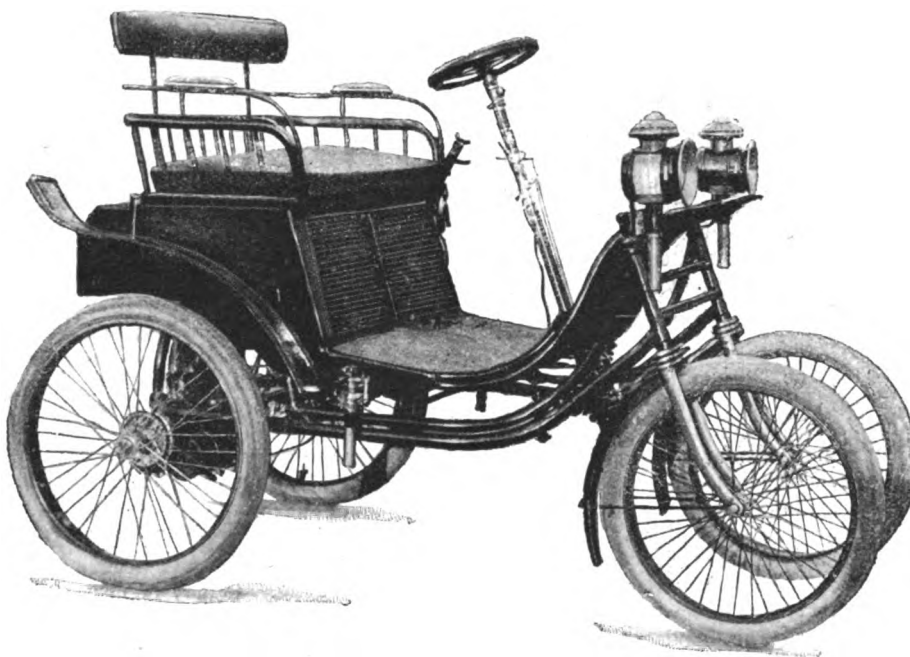
In the six weeks and one day over which it had extended intermittently we travelled 1,170 miles, but there were sixteen days on which the car was entirely idle. —*The Bromley Record*.

SCIENCE ABSTRACTS, edited by Mr. W. R. Cooper, 82, Victoria Street, S.W., for the Institute of Electrical Engineers and the Physical Society, gives abstracts relating to motor-cars in its January number for the first time.

THE latest addition to the automobile periodicals of the country is the *Irish Motor News*, the first issue of which lies before us. Messrs. R. J. Meccredy and Co., Ltd., of Dublin, are the proprietors and publishers of the new publication, which is to be issued monthly.

## "LA GAZELLE" MOTOR-VOITURETTE.

A BRIEF reference has already been made in these columns to the two-seated motor-voiturette of Messrs. Gallet and Itasse, of 17, Chaussée du Pont, Boulogne-sur-Seine, France, of which we are now able to give an illustration. The frame is of tubular construction throughout; the motive power is supplied by a De Dion 2½-h.p. air-cooled motor geared to the rear axle through the medium of a two-speed gear. It will be noticed that the front steering wheels are carried between front forks of the cycle type; steering is controlled by an inclined hand-wheel, and an innovation is the introduction of a spring device by means of which the front wheels are brought in a perfectly straight line should the hand be taken off the steering wheel. The car is suspended at the front on vertical compressed-air plungers and the rear part on spiral springs. The wheels are of the cycle type fitted with pneumatic tires, while there is a band brake on the differential drum, and similar brakes on the hubs of the rear wheels. The car, which weighs only 3cwt., can, it is claimed, attain a speed on the level of from thirty-two to thirty-five kilometres per hour, and uphill from twelve to fourteen kilometres.



"LA GAZELLE" MOTOR-VOITURETTE.

AN Automobile Club has just been formed at Avignon, France, with M. J. Pernod as first president.

ST. VINCENT'S HOSPITAL, of New York, is now provided with an electrical ambulance. The vehicle can, it is stated, travel at the rate of ten miles an hour, and cost £400.

THE races committee of the Automobile Club sat on Tuesday evening for the first time to consider the organisation of motor-cycle races at the Crystal Palace and a big race on the French roads in the autumn.

THE Autocar Company, Pittsburg, is introducing a new vehicle of the Stanhope or runabout type, having seating capacity for two passengers. The petrol motor has two cylinders with cranks set at 180 deg. The speed of the motor is regulated by the electric ignition. Transmission to the rear axle from the motor is by a new and ingenious device, which consists of a drum placed on the motor shaft, through which, by the application of a brake clutch, any desired speed from two to twenty miles an hour can be obtained. The power is transmitted from the drum to a small counter-shaft, which runs on ball bearings and has a sprocket mounted thereon, and from this point to the rear axle. The compensating gear and all working parts are inclosed and run in an oil bath, and the brake is so arranged that if the chain should let go the brake would act direct on the rear axle. The speed control is operated by a small lever at the side of the seat. By a simple forward motion the vehicle is started; but continuing this forward motion speed is increased until the maximum is reached. By pulling the lever back of the starting point the vehicle is reversed. Thus it will be seen that the speed control is by one lever, so that the driver has the other hand for steering the vehicle. The brake on the rear axle, which is only used in case of an emergency, is operated by a pedal. The weight of the vehicle is about 600 lbs. including water and petrol sufficient for a 50-mile run. Pneumatic-tired wheels are employed.

## MOTOR-CARS ON THE CONTINENT.



(From Our Own Correspondent.)

### Une Ligue des Chauffeurs.

M. PAUL MEYAN in the last issue of *Le France Automobile* refers to the formation of the Motor-vehicle Users' Defence Association in England, and considers that a similar association should be formed in France. He is, therefore, in conjunction with M. du Laurens de la Barre, a well-known French barrister, taking the necessary steps to organise *Une Ligue des Chauffeurs*.

### The Motor Industry in Lyons.

MESSRS. AUDIBERT AND LAVIROTTE, of Lyons, are reported to be building three special racing cars each fitted with engines of 36-h.p. for the forthcoming Nice race. Messrs. Rochet and Schneider, of the same town are building a special racing car to be fitted with a 24 h.p. 4-cylinder motor for M. Marge, vice-president of the Lyons Moto-Club. This car will not be completed in time for the Nice race, but will be ready for the subsequent important races.

### The Lift at Saint-Germain.

SUNDAY last witnessed the inauguration of the lift at Saint-Germain, by means of which cyclists and motor-cyclists will now be able to avoid the terrible toil of ascending the celebrated hill of Le Pecq. Situated on very high ground there are several steep hills in the neighbourhood of Saint-Germain, but Le Pecq is an ascent of exceptional severity, and the advent of a lift will be a boon to all cyclists who frequent this beautiful suburb of Paris.

### Motor-Cycles at St. Petersburg.

SUNDAY, the 28th ultimo, witnessed the first of this year's automobile *courses* in Russia, and when it is remembered that Russian roads, at no time remarkable for their excellence, are now covered with snow, the difficulties of the competitors may be imagined. The race contested was the one held annually for motor-cycles over a distance of sixty-five versts, and it brought out eight competitors. The winner of last year's race was an absentee, and the first man home proved to be Michailoff, who thus became holder of the handsome cup presented by an automobile firm of St. Petersburg. His time was 2h. 17min. The other placed men were Stepanow and Jaulky, who occupied 2h. 50min. and 3h. 3min. respectively on the journey. Motor-racing during a Russian winter must require a special constitution, I should imagine, for even in more temperate climes the sport does not present much attraction at this time of year.

### Motor Cyclists Convicted.

THE sequels to a couple of automobile accidents, which occurred last autumn, were reached in the courts just recently, and in both instances were the *chauffeurs* condemned, although to widely different sentences. In the one case the accused motor man was Bertin, the well-known racing cyclist, who figured conspicuously in last year's motor-cycle events, and who gained the Bordeaux-Biarritz *course*. He made his appearance before the Court of Bergerac, charged with having driven his machine at a furious speed through the town and neglecting to observe any precautions when he met on the road a horse which showed unmistakable signs of fear. The ultimate result was that the noble steed upset the vehicle to which it was attached, and the three occupants were injured. Bertin was held to be guilty, and was condemned to pay a fine of £2. But in the other case the sentence was much more severe, possibly on account of the matter having been dealt with by a Paris Court. Here also a

celebrated motor-cyclist figured as the accused. Baras, winner of the races "Paris-Lille," "Paris-Ostend," and "Paris-Boulogne" was charged with having, on September 29th last, knocked down a little girl in the Rue de Reuilly, and in spite of the excellent pleading of his counsel the *chauffeur* was condemned to eight days' imprisonment and ordered to pay a provisional indemnity of £8 to the victim without prejudice to any subsequent claim for damage. Baras has lodged an appeal against this judgment, which certainly seems severe, having regard to the facts of the case.

### Club Committee Men.

I HEAR at the A. C. F. that the constant absence of several members of the different committees has caused the club committee to issue a rule to the effect that when a member of a committee absent himself from three meetings without being excused he will be considered as having resigned. This is as it should be, for numbers of members are willing to accept the honour of a seat upon a committee, and afterwards rest satisfied with the glory of their position, making no attempt at useful service and keeping in the background some other man who would be a genuine addition to the committee. Selfish individuals of this type can well be dispensed with, and doubtless the club's ruling will have a salutary effect.

### A New Trade Society.

THE result of the election of officials made at the recently held general meeting of the *Chambre Syndicate du Cycle et de l'Automobile* proved so distasteful to certain members that they decided to secede from the society and constitute another solely for cycle manufacturers, and to the entire exclusion of automobile constructors. This object was attained last week when at a meeting of the dissentients the following officials were elected to conduct the affairs of the new syndicate: President, M. A. Clément; vice-presidents, MM. Diligeon and Petit; secretary, M. Couturier; treasurer, M. Georges Richard. The other founder members were nominated as members of the committee, and as they include representatives of such firms as Phébus, Hurtu, Gladiator, and Rochet, there is all the same a distinctly automobile flavour about the new organisation. It is a great pity that dissensions of this kind break out, as they do very considerable harm to the advancement of the industry and lead to much ill-feeling. It may be noted that the idea of rendering the new society only accessible to cycle manufacturers carries it back to the condition of things existant before the growth of automobilism. I can only hope that this secession does not bring both concerns to the ground.

### The Race for Voiturettes.

COMPETITORS in the races from Paris to Rouen and back, which the *Journal des Sports* is organising for March 11th under the title of "La Coupe des Voiturettes," will be divided into two classes, in each of which there will be two categories. The classes are: 1, water-cooled motors; and the categories, A, cars weighing less than 250 kilos.; B, cars weighing between 250 and 400 kilos. The promoters have taken the wise decision to have both start and finish well away from Paris, and so minimise the risk to competitors and public alike. The scene of departure will be at the Grille d'Hennemont, close to Saint-Germain, and the route to Rouen will be by way of Ecqueville, Flins, Mantes, Rosny, Bonnières, Vernon, Gaillon, and Pont-de-l'Arche. On the return journey the competitors will pass through Boos, Fleury-sur-Andelle, Ecomis, Saint Clair-sur-Epte, Magny-en-Vein, Pouiseux, Pontoise, and Conflans, finishing at the sign post of the "U. V. F.," on the route des Loges, in the forest of Saint-Germain. Entries for this event, accompanied by a fee of 10 francs, should be forwarded to M. Tampier, *Les Journal des Sports*, 10, faubourg Montmartre, Paris. Among the entries already made I note the names of Schrader, Thiery, and Van Berendeck.

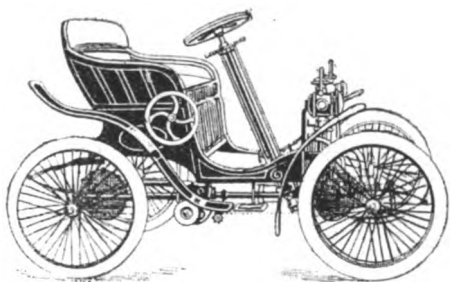


### The Paris-Bordeaux Accident.

EVERY follower of French automobile races will recollect the serious accident which occurred close to the level crossing at Saint-Cloud shortly after the start of the Paris-Bordeaux *course* of May 24th last, an accident which resulted in severe injuries being sustained by a certain *mécanicien* named Flotte. The sequel to this affair was reached last week at Versailles, where M. Albert Lemaitre appeared before the court in connection with the mishap. Flotte had been lent to M. Lemaitre by MM. Michelin and Cie. for the purpose of the race, and it appears from the evidence that just before leaving the level crossing of Saint-Cloud they were passed by M. Gilles Hourgières, who almost immediately afterwards slowed down his pace. M. Lemaitre was compelled to do the same, and it was at this moment that Flotte fell from the car and sustained severe injuries. Apparently his fall could only have been occasioned by one of two things—either the sudden application of the brakes shook him from his seat, or he lost his head and jumped. But in either case it is difficult to see where the responsibility of M. Lemaitre comes in, for had he not succeeded in bringing his car to a standstill he must have charged violently into the back of M. Hourgières's vehicle and produced a very serious accident. To avoid this he stopped his car as speedily as possible, and witnesses of the accident were unanimous in saying that he was perfectly cool and collected whatever Flotte may have been. After a lengthy hearing the Court condemned M. Lemaitre to fifteen days' imprisonment, with, however, the benefit of the law Bérenger, and ordered him to pay a fine of £4. They further directed that a doctor specialist should examine Flotte and assess the damages he has sustained, in the meantime M. Lemaitre to make him a provisional allowance of £200. M. Lemaitre has already lodged an appeal against this judgment.

### The Gladiator Motor-Voiturette.

LA COMPAGNIE GLADIATOR, of 118, Boulevard Montmartre, Paris, has lately brought out the neat little two-seated motor-voiturette shown in the accompanying illustration. The frame of the car is built up of steel tubes, and is suspended on the axle by plate springs. The motive power is supplied by an Aster 3½-h.p. water-cooled engine located in the



front part of the frame. The ignition is electrical, the carburettor is of the Longuemare type, while the water circulation is maintained by a small pump, a Loyal radiating coil being also provided. The power of the motor is transmitted direct to the rear axle by a longitudinal shaft, a friction clutch and a two-speed gear, giving twelve and twenty-five kilometres per hour, being provided. Steering is controlled by an inclined hand-wheel, on the standard of which the control levers are mounted. The car measures 6½ ft. in length by 3½ ft. in width, and weighs 500 lbs.

### The Chauchard Cup Race at Nice.

THE first contest for the magnificent challenge cup of blue Sèvres china and chased silver-gilt, presented by Monsieur Paul Chauchard to the Automobile Club of Nice, took place on Sunday last, in weather but little characteristic of that usually enjoyed on the Riviera. In spite of the threatening outlook, however, a numerous crowd put in an appearance at the start, which had been announced to take place at 9.30 a.m. from

the Boulevard Gambetta. Among the many well-known automobilists present were noted Mme. Bob Walker, Baron Springer, Mr. and Mrs. Vanderbilt, General Caze, Prince Lubecki, MM. Paul Meyan, Jellineck, Albert Gautier, and A. Chauchard. If the spectators were numerous, the same remark cannot apply to the competitors, for from one cause or another only four answered to their names, and of these, M. Leon Desjovaux, who was to pilot the 24 h.p. car of M. Jellineck, declared himself to be a non-starter. This left M. Charles Gondoin, M. Pinson, and Baron Henri de Rothschild, the latter racing under the name of Dr. Pascal, to decide the fate of the cup. M. Pinson, it will be remembered, drove a 12 h.p. Panhard, recently belonging to M. René de Kuyff, in "Le Tour de France," but on Sunday last his mount was one of 8 h.p. only, as was that of M. Gondoin. Baron Rothschild was conducting his 24 h.p. car, and on the signal to start being given quickly took the lead. This advantage he did not, however, enjoy for long, as on passing Plan-du-Var M. Pinson was eight minutes ahead of him, M. Gondoin being second. At Colomars this lead was increased to twenty minutes, the noted time of the three competitors at this point being: M. Pinson at 11.57, M. Gondoin at 12.13, Baron Rothschild at 12.17. The fortunes of the race continued with varying interest until, on the return journey, M. Gondoin, who had taken the lead, met with what might have proved a very serious accident. This unfortunate mishap occurred in the neighbourhood of Galtières, and was brought about by the puncture of a tire, which caused the car to swerve violently and ultimately to come into contact with the iron railings which at that point border the route. M. Gondoin and his engineer were thrown violently from the car, but happily without suffering any other consequences than severe bruises. M. Pinson picked them up, and later in the day the damaged racer was towed into Nice. This materially reduced the interest in the race, as but for the mishap a close finish would have probably been witnessed. The ultimate result was:

1, M. Pinson, finishing at 3h. 37min. 44sec., giving a net time of 5h. 37min. 44sec.; 2, Baron de Rothschild, finishing at 4h. 33min. 27sec., giving a net time of 6h. 33min. 27sec. The race for voiturettes gave the following result:—1, Baron de Ville-d'Avray, in 3h. 3min. 54sec.; 2, M. Bary, in 3h. 34min. 28sec.; 3, Paul Chauchard, in 3h. 51min. 52sec. The two latter gentlemen did not conduct their cars, this task being performed by MM. Serruise and Carmen respectively.

THE Motor Manufacturing Company, Limited, inform us that they are now making Daimler motors, and that the Daimler Motor Company, Limited, have in consequence agreed "for the present to withdraw the statement that they are the sole makers in England."

THE Committee of the Motor-Car Club find that they did not make quite sufficient allowance for the deliberation and difficulties of inventors in preparing models, etc., when they fixed the closing date for receipt of plans and models for their £600 Invention Competitions in May. They have, therefore, in response to a request from several intending competitors, extended the period till September 30th.

THE success of the automobile promises to revive the omnibus in America, remarks one of our transatlantic contemporaries. A number of motor-omnibus lines are spoken of, such as between Brooklyn and New York over the East River bridge, when completed, to Greenwood, Ft. Hamilton, etc. Applications have been made for franchises for similar services in several of the smaller cities.

THE guarantee of "quiet to ride or drive" has been adapted for use in the sale of second-hand motor-cars, but purchasers should not place more faith in the recommendation of the inanimate object than they do in that of the quadruped. Many people who want to experimentalise with "motoring" are inclined to gain experience with a second-hand machine, but they should be very wary in making such a purchase. Until a trial has been made, it is absolutely impossible to tell whether a motor-car is in "going condition" or not, and all intending purchasers should insist upon a test of the machine before they purchase it.—*The Court Journal*.

## CORRESPONDENCE.

## THE BRAKE HORSE OF PETROL MOTORS A SUGGESTION.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I suggest that at the coming exhibition of motor-cars, etc., to be held at the Royal Agricultural Hall some effort be made by which intending purchasers may be able to arrive at a reasonable approximate knowledge of the b.h.p. of a motor-car oil engine. Manufacturers in their trade circulars and advertisements use indiscriminately h.p. and b.h.p., which, to say the least, is very misleading, more especially to purchasers unacquainted with technicality. Is it not possible during the exhibition to take the b.h.p. of several engines, more especially on the return of those cars out on trial, so that the public may have some approximate idea what b.h.p. to expect from a given diameter of cylinder, length of stroke, and revolutions per minute? As you are well aware, h.p. is a most elastic term, and may mean anything, yet it is the one feature apparently of inducement to purchasers to buy. Let me draw your attention to the advertised list of cars for sale at the end of your paper, which, I think, will confirm this statement.

Yours faithfully,  
West Hartlepool, February 2nd, 1900. J. R. F.

## A GOOD DAY'S RUN.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Knowing you take a great interest in long motor-car runs, I herewith beg to send you particulars of one I had on Saturday, July 22nd, 1899, which may be of interest to your readers, showing what a good car is capable of doing. I did not think it worth recording at the time, but having seen several accounts of good runs noticed in your paper lately I think this one of mine is worthy of mention. The car used was a small Panhard dog-cart, to which I had just fitted a water cooler. —

Yours faithfully,  
Northampton, February 2nd, 1900. J. GROSE.

## PARTICULARS OF RUN.

My wife and I left Northampton at 5.30 a.m. After having breakfast at Peterboro', which took up 1½ hours of our time, owing to our early arrival, we started for Wisbech, where we stayed a quarter of an hour to look round the car and procure light refreshment. Then on to Swaffham, where another hour was spent over dinner. We had now a long run of over sixty miles before us, which the car accomplished without a stop, we finally running into Yarmouth exactly at 5.30 p.m. The net travelling time for the journey, which extended to 152 miles, was, therefore, 9½ hours.

THE Crowds Accumulator Syndicate, Limited, is being voluntarily wound up.

THE Enfield Cycle Company, Limited, of Redditch, have sent us a copy of their new catalogue, in which, in addition to cycles, particulars and illustrations are given of the Royal Enfield motor-tricycles and quadricycles.

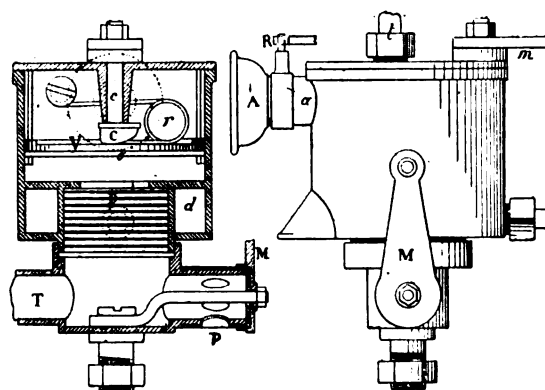
THE Steiermärkscher Automobile Club has just been formed at Gratz, with Herr Hans von Reininghaus as first president, to promote the automobile movement in Styria. Negotiations for a motor-car race between Gratz and Vienna at an early date are already in hand.

THE London Autocar Company, Limited, of Gray's Inn Road, London, W.C., in addition to the new crank chamber and carburettor taps for motor-tricycles, are stocking a dry battery in a wooden case giving twelve amperes with three cells and about one-third less weight than the present battery. They are also making a speciality of a carriage coil (English made), giving a very hot "fat" spark. A set of castings and drawings for a small vertical water-cooled motor are also being supplied to the trade at a very low price.

## THE RAYMOND CARBURETTOR.

THE accompanying illustrations show a new form of carburettor which has lately been put on the market by M. A. Raymond aîné, of 128, Rue du Bois, Levallois-Perret (Seine), and which is claimed to be the smallest device of the kind so far introduced. It is being made in several sizes, Figs. 1 and 2 showing a carburettor for small motors of from 1 to 2 h.p. The main feature of the apparatus is a kind of balanced valve *V*, which moves around an axis *O*. This valve carries a pointer which engages with the lower end of the petrol admission pipe *l* (Fig. 2).

The pointer is not seen in Fig. 1, it being hidden behind the spindle *c* of the handle *m*. A helicoidal cam *C*, of which the shaft *c* is manoeuvred externally by means of the lever *m*, removes the valve *V* and its axis *O* more or less from the spirit inlet pipe, with the result that the degree of engagement of the pointer with the latter is varied. Under the effect of the suction stroke of the motor the valve turns on its axis, and the pointer falls, allowing a predetermined quantity of petrol to pass into the carburettor. As soon as the suction is ended the valve is brought back to position

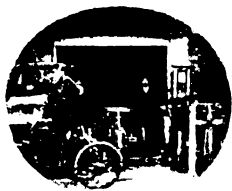


by the spring *r*, the pointer consequently closing the inlet pipe. During the suction stroke air is also drawn in through the pipe *a*, the mouth, *A*, of which is provided with wire gauze to prevent the admission of any dirt or dust. The quantity of air admitted is regulated by the valve *R*. The petrol, as soon as the valve *V* moves, falls thereon and meets with the air, a thorough mixture being formed on the passage through the series of wire-gauze discs *D*. To assist in the carburation, a part of the exhaust gases from the motor are made to circulate in the annular space *d*. The necessary additional cool air, to form a good mixture, is drawn in through the openings *P*, regulated by the handle *M*, the explosive mixture then passing to the motor along the pipe *T*. To start the motor, the valve *R* is closed and the handle *m* moved over about a third of its movement, the electrical ignition being retarded. The motor once in operation, the quality of the mixture is regulated as desired by the levers *R*, *M*, and *m*. It is claimed for the device that it is regular in operation notwithstanding the jolting caused by uneven roads, and that the regulators are instantaneous in their action.

ONE of the latest American novelties is the production of the Colonial Automobile Company, of Boston, which has constructed a steam vehicle having three rear wheels, the centre one being the driving wheel. The inventor believes that several difficulties are overcome by this arrangement, and important advantages secured.

THE Edinburgh Cycle Show is to be opened in the Waverley Market, Edinburgh, this (Friday) afternoon. In addition to the usual display of cycles and accessories, there is a section for motor-cars, the exhibitors in this department including the Motor Manufacturing Company, Limited; Stirling's Motor Carriages, Limited, and the Caledonian Motor-car and Cycle Company, Limited.

## AUTOMOBILE ACCIDENTS IN FRANCE.



THE past few months have not been fortunate for the motor-vehicle. It has witnessed quite a number of automobile accidents. For those of experience, as for the inexperienced, it is exaggerated speed which must be blamed for these misfortunes. But it would be preaching in the desert to ask drivers to slacken their speed.

That would be to return to the speed of the team of horses. When they can make twenty-five miles and more an hour they are not going to slow up to a speed half as great, and so the most prudent motor-men allow themselves to be intoxicated by high speed and lay themselves liable to all kinds of accidents. The observations which follow are addressed not to professionals nor mechanics by trade, but to those who drive the motor-carriage because they enjoy it merely for pastime now and then.

Accidents increase with the number of neophytes of the pedal and of the "buzz-buzz." If a few hours suffice to make a fairly presentable cyclist quite otherwise is the education of a motor-conductor. First of all he must have a certain mechanical knowledge, and then must serve an apprenticeship in his new calling, to which few drivers submit. Once his vehicle is delivered (generally its owner has waited many months), the impatient conductor has its mechanism and its method of conduct explained to him in two or three movements. Then he is off in all haste, eager to count up the miles and say when evening comes that he has equalled the speed of the express train.

A carriage well oiled and provided with all that it ought to have to assure its operation goes very well the first day. As soon as he arrives at the stable, however, the driver ought to give his first care to his carriage and then think of himself. Unfortunately he forgets to do this.

The second day his troubles begin—the cylinders stick because of lack of oil to lubricate them, or of water to cool them; the tubes are stopped up, preventing the oil and water from performing their work. Or else it is the carburettor which has become dirty and will not flow, or the ignition tube no longer communicates its spark, and there is no explosion, the brakes will not work, or the axle of the differential has become untrue.

Then follow the entire gamut of mishaps until comes the inevitable "snap" that heaves the motor-man to out in the open country in the face of a driving rain or under a boiling sun. He can do nothing, and storms against the builder of the vehicle who has turned over to him this worthless imitation. It is necessary to send to the nearest village for a mechanic or else for a horse to draw back the equipage and its occupants, their heads hanging before the jeers of scoffers. Once arrived at a place of refuge, the cause of the stoppage must be learned. Heroically he sets to work to take things to pieces; he lies on his back in the dust and digs his hands into the oil and finds, perhaps, that an electric wire has lost its point of contact. A screw tightened up again puts it back in place. Or else a strap has become distended by dampness and has re-taken its normal tension—little accidents which a professional or even an amateur who is acquainted with his vehicle ought to guess and repair in five minutes. The driver ends where he ought to have begun.

Generally when a motor vehicle has to "lie to" it is the fault of the driver and not of the machine. How many of these apprentice drivers have we seen stopped in the middle of the road to Versailles or St. Germain, waiting in despair for a colleague to come and draw them out of their embarrassment. And very often the latter puts things back in place with one simple twist of the wrist which has no magic at all about it, and you see them both start on again side by side.

After "heaving to" several times, the driver begins to reflect, he decides rather late to have some practical man explain to him the use of each organ and the method of assuring himself before the start of its proper working, etc. The giving out of the motive power is disagreeable and becomes a great bore; over-

turning in a ditch is dangerous, sometimes causing death, as we have too often seen. To avoid these the important thing, above all else, is to assure yourself, at the start and in the course of your trip, that the brakes work properly, and that you are absolute master of the steering apparatus. Improper working of these parts is the principal cause of accident. The brakes are at least two in number, one a hand-brake acting on the tires of the wheels, and the least effective of the two. It has the special inconvenience of not always gripping both wheels with equal tightness, and so if one is rushing down an incline and the hub-brakes or those of the axle of the differential do not work, there is no other recourse but to the hand-brake, which, as it does not act with equal strength on both wheels, brings about a somersault and a tumble. This accident happens especially on smooth, wet and hilly roads. Do not start out, then, without having the brakes well regulated and the cord, chains and levers in good condition.

However, to block the wheels completely with the brakes when descending a hill at full speed would be to expose one's self to certain destruction. A carriage should not be stopped suddenly any more than a rapidly moving railway train; the brakes must be used progressively, otherwise the remedy is worse than the evil.—Translated from the French of Yves Guédon.

## THE FORTHCOMING RACING SEASON.

IN reply to the remarks in the *Automobile Club Notes*, quoted in our last issue, the Hon. C. S. Rolls writes as follows:—"I note the remarks in your last issue, anent my recent letter in *The Motor-Car Journal* commenting on the rumours of 50 h.p. and 100 h.p. machines. If you will be good enough to re-read my original letter, you will notice that there is a slight inaccuracy in your extract of it.

"I gave it as my belief (which was founded on statements made by the managing director of Panhard's) that the *chasseurs* named would not use more than 16*n* (nominal) h.p. for the cup race; but the writer of your article fails to discriminate between N.H.P. and B.H.P. as used in France. He implies that by enlarging the cylinders of a car (which can only be done to a very small extent) an increase in power of over 50 per cent. can be obtained, which is impossible. A 16 n.h.p. Panhard usually gives off 20 to 22 h.p. (French) on the brake; if M. De Knyff's is made, by boring out the cylinders, to give 25 h.p., this must of course be b.h.p., but the car would still be termed a "16," and this is the type I was told would be used for the cup race.

"As to 'so much secrecy,' there is always secrecy shown concerning the experimental department of large firms especially to foreigners; but this does not prevent one from discrediting the rumours of 50 and 100 h.p., which was the object of my remarks, and though a strong advocate of high powers I think it will be a pity if the h.p. of cars becomes subject to as much exaggeration as that of tricycles has (a so-called 2½ h.p. tricycle usually giving but little over 1 actual h.p.)."

AT the conclusion of the dinner to Major Crompton at the Automobile Club on Wednesday next, the Hon. J. Scott Montagu, M.P., will read a paper on the general aspects of British automobile manufacture.

A FRENCH *chasseleur*, who does not like the idea of a number on his car, has had painted on it the name "Zut." This word sounds very like "soot," and would seem to indicate that electrical ignition troubles have not been absent!

A COMPANY has just been formed in Brussels with a capital of £3,200, to be known as L'Acetylithe, Société pour l'Exploitation des brevets de Messrs. Bleriot, Letang, and Serpollet, to introduce the Bleriot acetylene lamps for automobiles and other purposes into Belgium.

WE have received from the Comité des Fêtes of the town of Cannes a copy of the programme of the Grande Réunion Cyclo-Automobile, which takes place on the afternoon of Wednesday, the 21st inst. The programme includes a decorated automobile parade and competition, and an international motor-cycle race, the distance being 1,200 metres.

## THE WINTON PETROLEUM-SPIRIT MOTOR-CARRIAGE.

ONE of the most successful petroleum-spirit motor-cars built in America is that of the Winton Motor-Carriage Company of Cleveland, O., of which we are now able to publish a description and illustrations. As will be seen from Fig. 1 the car has a very stylish appearance, and is comfortably upholstered. The motor is of the horizontal petroleum-spirit type, with electrical ignition and water jacket; the makers do not



FIG. 1.—GENERAL VIEW OF WINTON MOTOR-CARRIAGE.

mention the capacity of the motor, but we understand it is of about 6 h.p. Details of the engine are shown in the accompanying illustrations, Fig. 3 giving a section through the motor, Fig. 4 a horizontal section on the line 2-2 (Fig. 3), and Fig. 5 a section through the inlet valve. Extending transversely to the cylinder and parallel to the motor-shaft is a small countershaft *H*, carrying

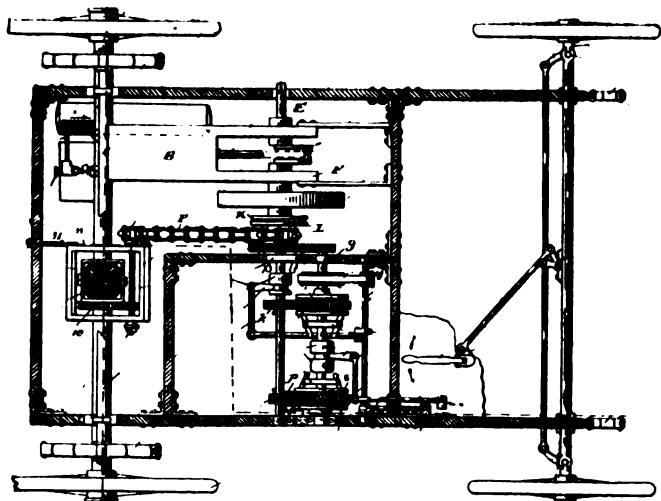


FIG. 2.—PLAN OF WINTON MOTOR-CARRIAGE.

a cam *K*, engaging a wheel *M* on the lower end of the exhaust valve stem *O*, the shaft *H* being driven through the medium of the gear wheels *I J*, whereby the shaft *H* makes one revolution to every two of the shaft *E*, as is usual in impulse motors. The sparking plug is situated within the suction valve *B*. Communicating with the air pipe *A'* is a petrol-supply pipe *W*, having a needle valve *V*. This, as shown, passes through the opposite side of the pipe *A'* by means of a U-shaped spring. *U* is connected with the valve stem. Situated just outside the outer end of the needle valve *V* is a bracket *a*, carrying an adjustable screw *b*, adapted to engage the end of the valve *V* as it is being reciprocated and to

thereby regulate the distance the valve shall be drawn from its seat, which in turn regulates the amount of petrol supplied at each movement of the valve.

A box or chamber *X* has detachable screw-threaded ends *Z*, and this box or chamber is filled with wire cloth *Y*. One end of this box is provided with an air-pipe *A'* for the inward passage of air, and at the opposite end with a pipe *c*, communicating with the explosive chamber of the cylinder. This inlet *c* is intersected by the valve *P*, having a valve-stem *Q* passing through the wall of the inlet and outward through a cylinder *T*. This cylinder *T* is provided with a piston or diaphragm *S*, and a pipe *R* communicates with the cylinder at a point inside of the piston. This pipe *R* is connected with a special pressure-producing device, the pressure upon the piston being varied, according to the speed of the engine. A spring serves to hold the small piston *S* normally outward.

In operation, suppose the piston to be at the top of the stroke and having thus completed the exhaust; as the piston moves down within the cylinder air is drawn through the pipe *A'* and the chamber *X*, which owing to its filling thoroughly breaks up the spirit into vapour, as well as thoroughly mixing the vapour with air, and thence through the inlet.

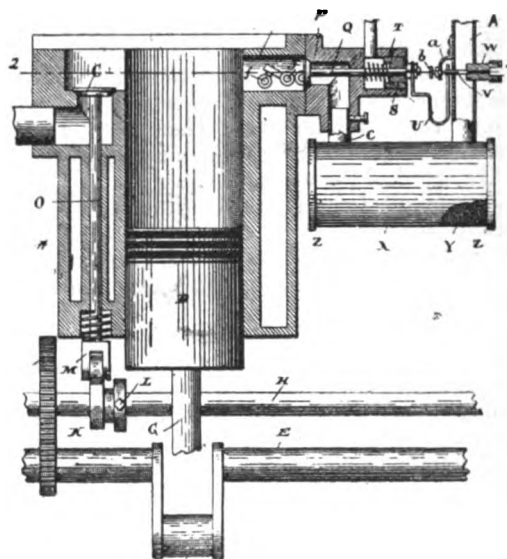


FIG. 3.—SECTIONAL VIEW OF WINTON MOTOR.

port *B* to the explosion chamber. When the air-pressure rises by reason of the engine running faster than its normal speed, the movement of the inlet-valve is less, allowing less combustible mixture to pass into the cylinder until the speed of the engine is decreased. With the decrease of the speed of the engine the air-pressure upon the piston *D* likewise decreases, allowing the inlet-valve *P* to be opened wider, thus automatically controlling the speed of the motor. When the piston rises, the gases are compressed and fired at the end of the stroke, forcing the piston down. The following stroke is the exhaust, and so the cycle of operation goes on. The movement of the small piston *S* is at times greater than the movement of the valve *P*, and hence it is necessary to have a uniform stop or regulator for the valve—that is to say, the valve *P* can be regulated while it is necessary to have this valve move a uniform distance, and hence this is provided through the medium of the above-mentioned stop to prevent the needle-valve being opened too far by the opening of the valve *P*, which would otherwise occur. The additional movement of the valve *P*, to which the needle-valve is connected, is permitted through the yielding of the spring *U*, which actuates the needle-valve. By means of this construction a uniform movement of the needle-valve *V* is obtained and the amount of movement can be regulated. The speed of the motor can, it is claimed, be varied between 200 and 1,000 revolutions, to suit the amount of air admitted through the pipe *A'*.

A plan of the car, showing the location of the motor and the transmission gear, is given in Fig. 2. The motor *B*, which is located

in the rear left-hand corner of the frame, drives the shaft *E*, from which, through a friction clutch *K*, *L*, and chain gear *P*, the balance gear of the rear axle is driven. The chain may be tightened by adjusting angularly through the medium of the screw 31 the frame 8 in which the pinion shaft 19 is mounted. To prevent the transmission of shocks, the wheel 18 is connected to the frame or box of the balance gear by a resilient coupling, 7. No mechanical variable-gear is employed, except for hill-climbing and for the reverse motion, any desired speed up to the maximum being obtained by the control of the motor. For giving a slow forward movement and for backing, spur wheels and friction clutch gearing on a countershaft *g* are provided.

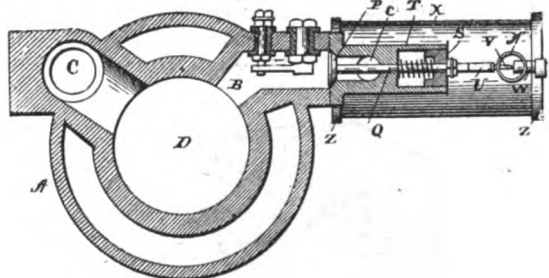


FIG. 4.—SECTION THROUGH CYLINDER TOP.

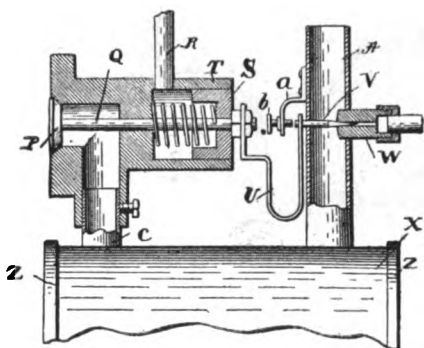


FIG. 5.—SECTION THROUGH INLET VALVE.

The body of the car is spring-suspended; the road wheels are of the cycle type, 32in. diameter front, and 36in. rear, shod with pneumatic tires. Steering is controlled by a long American style lever, acting on the front wheels, which are mounted on the usual short vertical pivots. The petrol tank is of a capacity sufficient for a run of seventy-five miles on level roads, and the maximum speed is eighteen miles, while it is stated that the car will mount any ordinary gradient. The Winton Company in a letter to us state that "the style of the motor contained in this carriage is the same as will be used by Mr. Winton in the Gordon-Bennett International Race in France during the coming season. Of course, the motor will be of increased power and speed over our standard production." The company are also building a motor delivery van on similar lines, and have in hand a four-seated pleasure-carriage.

THE Micrometer Engineering Company, Coventry, has been registered with a capital of £500 to carry on the business of manufacturers of and dealers in bicycles, tricycles, motor and other carriages, and component parts and accessories.

THE De Dion Bouton British and Colonial Syndicate, Limited, as sole agents under contract direct from Messrs. De Dion and Bouton, ask us to draw our readers' attention to the fact that no one is authorised to charge more than 195 guineas for the De Dion Voiturette.

THE Automobile Club has been informed by a leading citizen at Bath that the refusal of the Light Railway Commissioners to sanction electric tramways in Bath leaves a fine field for a system of public motor-cars. He adds:—"A company taking this up promptly before the deposit of any other application would be welcomed by the citizens, who generally object to the laying down of rails in the streets."

## MIDLAND MOTOR NOTES.

By "HERCULES."



### The Recent Motor Trials.

I APPEND the judges' awards in the four classes of trials in connection with the Birmingham show. Class 1.—Single Tricycles: 1, gold medal, A. C. Edge, Ariel tricycle; 2, silver medal, J. W. Sharpe, Motor Manufacturing Company tricycle; 3, A. J. Millership, Ariel tricycle. Remarks: A very close contest. Trials satisfactorily carried out under most trying conditions. Class 2.—Motor-quadracycles: 1, gold medal, J. W. Stocks, Ariel quad.; 2, silver medal, C. Sangster, Ariel quad. Remarks: It is the opinion of the judges that the machine ridden by Sangster is not a *bona fide* quadracycle, inasmuch as it has the advantage of a second rider's pedalling, but that the performances of both machines under the adverse conditions of road and weather were satisfactory. Class 3.—Light Cars: 1, gold medal, Mors' Petit Duc, ridden by J. Palethorpe and C. Wheelwright; 2, silver medal, Wolseley car, ridden by Austin and Wilson. Remarks: Both cars performed satisfactorily under extremely unfavourable weather conditions. Class 4.—Motor-cars to carry four riders: 1, gold medal, the Iveagh phaeton, by the Motor Manufacturing Company. Remarks: Performed all tests in a highly satisfactory manner.

### General Results.

THESE tests should strengthen the growing confidence in motor vehicles. The weather could scarcely have been worse, nor could the condition of the roads, and the way all types of machines came through the severe ordeal was most gratifying. The hill-climbing tests especially should do much in the direction indicated, the results proving the value of the improvements which have been introduced during the last year or two, and that motor-vehicles *can* climb hills. At one time drivers of motor-vehicles endeavouring to climb hills were the object of ridicule, and they were often advised to "get out and push." Those who braved the elements to witness the trials at Mucklow Hill saw splendid work performed by the vehicles entered for the contest. Most cyclists in the Midlands know this hill as one of the stiffest to be encountered in many a day's ride, the gradient being one in ten, and this for nearly a mile. Of the eleven vehicles which entered for competition, not one succumbed to the severe strain, and mounted the hill without hitch. Four of the tricycles covered the distance in less than five minutes; one of the quads. negotiated the hill in 5min. 18sec., the Mors Petit Duc in 9min. 29½sec., and the Iveagh phaeton, with four riders, in 11min. 48sec.

A CYCLING contemporary states that among other unclaimed articles just sold by the Chemin de fer du Nord were two motor-cars and a motor-tricycle.

SOME successful experiments have lately been made from Bradford to Colne with a motor van with a load of goods from Messrs. W. Grandage and Co.'s dye works. Efforts are being made to push the use of motor-vehicles in connection with the dyeing trade, and several firms are reported to be experimenting in this direction.

WITH regard to the question of the carriage of motor-car spirit by railway companies, Mr. A. Burgess, the secretary of the Motor Manufacturing Company, Limited, writes:—"Having regard to the action taken by the leading railway companies as to carrying petrol, it seems to us that unless the users and manufacturers of motor-vehicles, and the manufacturers of petrol, can successfully contest the railway companies' right to impose such objectionable and 'trade-killing' conditions, the only thing to be done is to at once form a company which would purchase a number of motor-vehicles especially for the conveyance of petrol. Here is the chance of a life-time for those who are go-ahead enough to follow up the suggestion."



## THE ADVANTAGES OF ELECTRICAL VEHICLES.

—❧—  
A FRENCH VIEW.

(From Our Paris Correspondent.)

VERY considerable interest is being taken in the attempt which La Compagnie Générale des Voitures de Paris is now making to run electric cabs in competition with the horse drawn *fiacres* of Paris, and public attention is again directed to the many advantages which would result from the universal adoption of electric automobiles in large centres. In discussing this question a few days ago with Monsieur Ernest Cuénod, one of the leading authorities on all matters pertaining to automobilism, he handed to me a paper setting forth the advantages which the substitution of indiarubber-tired electromobiles for the horse-drawn vehicle at present employed would secure to the inhabitants of Paris, and although this list relates in particular to the capital of France, still the advantages enumerated hold good in the case of every town of any importance. M. Cuénod having kindly accorded me permission, I append a free translation of the several advantages as specified by him:

1. Transport twice as fast, with infinite increase of passengers' moral and physical comfort.
2. Suppression of all manner of obstructions caused by the horses, which occupy as much space as the vehicles, and which are in addition more or less difficult to drive and to restrain. Moreover, they fall, they kick, they place themselves across the road, and frequently back at inopportune moments.
3. Suppression of the horses' emanations and excrements, the flies that he attracts, the cruelties that he excites, and the noise that he makes in trotting.
4. Suppression of the innumerable stables with all their attendant unclean and unhealthy accessories.
5. Suppression of the fodder stores so frequently the cause of fires.
6. Suppression of the constant and considerable wear and tear of the streets produced by the continual stamping of the horses, which creates indentations in the road surface.
7. Suppression of the dust produced by this wear and tear and by the manure of the horse.
8. Consequent suppression of the inflammation of the eyes and respiratory organs caused by this detestable dust.
9. Almost entire suppression of the mud.
10. Consequent suppression of the side-slipping of automobiles and cycles.
11. Considerable economy in watering the streets, either to lay the dust or wash away the mud.
12. Consequently, the horse would no longer bar the streets of Paris during half the day, and the water economised would prevent any deficiency in the houses for the daily ablutions, and for the employment of lifts, the number of which cannot be economically multiplied by reason of lack of water.
13. Suppression of the accidents caused by run-away horses.
14. Colossal diminution in the budget of expenses for the upkeep of the roads, which would hardly be worn by reason of their being uniformly paved with wood, and subject only to the wear and tear occasioned by indiarubber-tired wheels.
15. Suppression of the noise prevalent in many streets, so rendering the habitation of adjacent houses practicable, and making conversation possible when traversing those streets in a vehicle.
16. Possible augmentation of the number of public vehicles by consequence of the disappearance of the cavalry of traction and all its cortège of annoyances.
17. Augmentation of the facilities to extinguish fires, the automobile fire-engine being much more rapid and manageable than the horse-drawn vehicle.
18. And lastly, the cab-driver, in forsaking the whip for the steering bar or wheel, becomes, in some sense a comrade of the *chauffeur*, and of the cyclist, and so the frightful *colignon* would disappear to the benefit of Parisians.

I may add that *colignon* is an epithet applied to the worst types of cabbies by reason of one of their number, named

Colignon, having murdered his fare many years ago. With the points above enumerated in favour of the new traction and nothing of importance to be argued against its adoption, it can but be a question of time before the horse is largely if not wholly superseded for public conveyances.

## THE HENSCHEL LIGHT ELECTRICAL CAR.

—❧—

THE Berliner Maschinenfabrik (Henschel and Co.), of Charlottenburg, Germany, whose electrical "droschke" has already been described in the *Motor-Car Journal*, have lately introduced the neat two-seated electrical car depicted herewith. The electro-motor is fixed at about the centre of the



FIG. 1.

frame, and is connected by a flexible shaft—one of the features of Messrs. Henschel's vehicles—and bevel gearing to the rear axle. The battery of accumulators, which are of the Hagen type, is stated to have a capacity sufficient for a run of from 30 to 70 kilometres on one charge, according to the roads traversed. It is carried in a receptacle at the rear in such a way that the

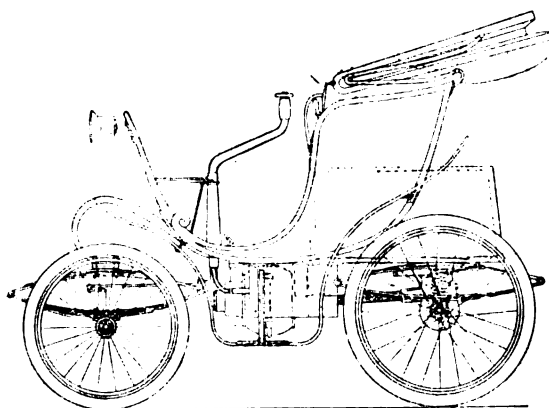


FIG. 2.

discharged battery can be withdrawn and a fully-charged set substituted in from two to three minutes. Another feature is the combination of the steering handle and the speed controller. The steering standard is hollow and encircles a flexible shaft which is connected with the controller switch. The car, which is provided with one mechanical and two electrical brakes, is provided with a hood, cycle-type wheels, and pneumatic tires.

THE Motor Carriage Supply Company Ltd. are about to open new and commodious premises at 17, Balderton Street Oxford Street, W., where cars may be stored, and where also all ordinary repairs, etc., can be carried out.

## THE NEW YORK CYCLE AND MOTOR-CAR EXHIBITION.



A CYCLE and motor-car exhibition was held in the Madison Square Gardens, New York, from the 20th to the 27th ult. The automobile section was a fairly large one, the exhibitors including the Duryea Motor Company, the Indiana Bicycle Com-

pany, the Loomis Automobile Company, Foster and Co., the Eddy Electric Mining Company, the American Electric Vehicle Company, the Canda Manufacturing Company, the Riker Electric Vehicle Company, the International Automobile and Vehicle Tire Company, the Iven Brandenburg Company, and the General Electric Automobile Company.

The Indiana Bicycle Company, of Indianapolis, Ind., exhibited the Waverley electrical vehicle which has already been illustrated in the *Motor-Car Journal*. In the cars of this company the frame is constructed of cold drawn seamless tubing. All the wheels have ball bearings and Royal single tube tires, those for the lighter types of carriages being wire [spoked and those for the heavier having wood spokes. The motor is of the multipolar type, designed with due regard for overloads, and having a reserve capacity sufficiently large to insure it against accidents. It is rigidly hung to the running gear, and it and all gears are carefully covered, amply protecting them from dust and water, so that in cleaning the carriage only moderate care need be exercised. On all but the largest vehicles, which have a double reduction gearing, the motor shaft is geared directly to the two rear wheels propelling the vehicle by a single reduction. Each rear wheel is made to revolve independently of the other by compensating gears placed in line with the motor shaft. The battery consists of forty-four polarisation cells, varying in size according to the power desired, the weight of the lightest being about 12lbs. for each cell. A starting lever, regulating the speed, &c., is placed at the extreme left side of the seat. By pressing a button in the top of the starting lever the carriage is reversed. Each vehicle has five speeds forward and three backward, varying from a minimum of three miles per hour to a maximum of ten to fourteen miles, according to the weight and type of vehicle. The steering, except on the larger types of vehicles, which have a steering wheel, is accomplished by a lever. A hand brake is applied to the periphery of the compensating gear drum, and is operated by a foot pedal. A safety locking switch is conveniently located, which renders the vehicle in-operative, so that it can be safely left alone anywhere without danger.

In the petrol-cars shown by the Loomis Automobile Company, of Westfield, Mass., all the mechanism is contained in a box hung on the rear of the frame under the body. The motor is of the petroleum-spirit type, of  $2\frac{1}{2}$  h.p., and in the No. 1 model is geared to run from one to fifteen miles per hour. The vehicle weighs less than 3cwt.

A new two-seated steam-car was shown by Messrs. Foster and Co., of Rochester, N.Y. The boiler is so designed that there is always sufficient water to obviate all danger of burning while doing heavy work, and when doing little or no work, as in the case of down grades, water cannot be forced into the boiler above a certain level. The boiler is petrol-fired, the burner being under perfect control, so that the flame can be increased or decreased as may be required. The car is propelled by a 6 h.p. vertical marine-type engine.

A number of cars were shown by the American Electric Vehicle Company. One charging of the batteries of the vehicles is, it is claimed, sufficient for a run of from thirty-five to fifty miles. The motors are single reduction, with hollow armature shaft. The maximum speeds of the vehicles vary according to

their purpose and can in each case be regulated to meet the demands of the road—from two to twelve or fifteen miles an hour.

The Canda Manufacturing Company, of Carteret, N.J., displayed a motor-quadricycle of their own construction. The motive power is a petrol-engine mounted behind the rear axle. It has a vertical cylinder, and when running at normal speed will develop  $1\frac{1}{2}$  h.p. The speed of the machine has a range of from  $2\frac{1}{2}$  to 25 miles an hour, while the weight complete is 350lb.

Several types of automobiles were exhibited by the Riker Electric Vehicle Company of Elizabethport, N.J. These are all electrically driven, the motors varying from  $\frac{3}{4}$  to 3 kw., from the "runabout" to the delivery waggon. The runabout weighs 1,300 lbs. and will carry one passenger in addition to the operator. It has three speeds ahead and two to the rear, the maximum being ten miles per hour. It has a mileage of 25 on the level on each charge of the battery. The delivery waggons are driven by two motors of 2 kw. each, the maximum speed being nine miles per hour. One charge carries the waggon from twenty to thirty miles on the level.

The Iven-Brandenburg Company had on view a Hertel two-seated car built by the Oakman Motor-Vehicle Company, of Greenfield, Mass. The petrol motor employed is of  $2\frac{1}{2}$  h.p., and is provided with a water jacket. The ignition on starting is by storage battery, but in running a small dynamo furnishes the current. The motor is mounted over the rear axle, and drives the carriage through friction pulleys acting on driving rims attached to the rear wheels. These wheels have a tread of  $46\frac{1}{2}$  in., the forward wheels of 35 in., and the wheel base is 47 in. The water and petrol tanks are placed under the seat, and will hold a supply sufficient for a run of fifty miles. The speed can be raised by one lever up to twenty miles an hour. The front steering wheels are carried between forks similar to those used in cycle construction, steering being controlled by a long lever at the right hand side. The weight of the car is 530lb.

The Automobile Forecarriage Company, recently organised in New York to purchase the United States patents under the Kuhlstein-Vollmer *avant-train* system, showed one of these fore-carriages fitted to an ordinary horse carriage, which attracted much attention, because of the novelty of the idea to the American public. The vehicle took the form of a four-wheel hansom cab; it has already been illustrated in these columns, and was shown at the Agricultural Hall Exhibition in July last.

Another interesting exhibit was that of the Elgin Automobile Company, Elgin, Ill., who manufacture petrol "runabouts" and delivery wagons. Single-cylinder Otto cycle engines of 5-h.p. are used, giving a maximum speed of fifteen miles an hour. There are two levers, one for steering, the other for change of speed. The weight of the "runabout" is 700 lbs. It is called the "Winner," and has wheels of 32 in. diameter, and wheel base of 54 in.

A MOTOR-BICYCLE built by the Steffey Manufacturing Company, of San Diego, Cal., is one of the novelties recently brought out in America. The motor which, with attachments, weighs 25lbs., can, it is stated, be attached to any bicycle.

THE Motor Car Company, Limited., of Shaftesbury Avenue, London, W.C., inform us that they have been appointed the sole representatives for the United Kingdom, of the firms La Société Decauville, Messrs. Renault Frères, and La Société Parisienne of Paris. The cars are respectively the Decauville voiturette, the Renault voiturette, and the Eureka combination car. Of the Decauville cars, there are three types; the first is the ordinary air-cooled,  $3\frac{1}{2}$ -h.p., three-speed car; another has a water-cooling system; and the other is now being manufactured to compete with the Panhard type of car. Messrs. Renault Frères have lately turned out a new water-cooled car very much after the style of a miniature Panhard, for which a brisk demand is anticipated. The other car for which the sole agency has been secured, is what is known in this country as the "Eureka," into which a little friction clutch actuated by a pedal is now being fitted.

## ACROSS CHANNEL TRANSPORT OF MOTOR-VEHICLES.



THE following information regarding the details of the cost and arrangements of motor-vehicles between England and the Continent, which will no doubt be useful to those automobilists who are contemplating a tour on the other side of the Channel this year, is taken from the *Automobile Club Notes*. It should be added that the information is published subject to revision and that further information on the subject will always be welcome:—

**PARIS TO LONDON.**—The Messageries Nationales Express undertakes to collect automobile vehicles packed in cases, within the ordinary limits of the Paris radius and to transport them by sea and to deliver them within the ordinary limits of the London radius (at the sender's risk), at the rate of £4 5s. 6d. (about 106 fr. 60 c.) a ton (about 1,015 kilogrammes), or if the vehicle weigh less than a ton at a proportionally reduced rate, with a minimum of half-a ton. Further particulars can be obtained on application to M. N. Express, 15, King Street, Cheapside, E.C., or to their Paris Agency, Messrs. Stockwell and Co., 31, Rue St. Augustin.

Messrs. Pitt and Scott, of 25, Cannon St., E.C., and 47, Rue Cambon, Paris, undertake to collect automobile carriages packed in cases, in Paris, and to transport them by sea (at the sender's risk), and to deliver them in London at the rate of £4 5s. (about 106 fr.) a ton. Or, by Express Railway, packed in cases, and weighing only one ton, £10 (250 fr.). Or, by ordinary railway service, packed in cases, £8 (200 fr.) a ton.

**OSTEND TO DOVER.**—Motor-cars not weighing more than one ton, at owner's risk, £4 11s. Vehicles must be on Ostend Quay at the time of high tide, preceding the departure of the boat. They can only be shipped by the following steamers: "La Flandre," "Ville de Douvres," and "Prince Albert."

**DOVER TO CALAIS** (£2 12s.). If the motor-cars are of convenient size and weight they may travel by any service, and they should be on the Admiralty Pier at least half an hour before the boat starts.

**DOVER TO LONDON.**—By train, £2 18s. 6d.

**NEWHAVEN AND DIEPPE.**—Motor-vehicle with four wheels £4 0s. 3d.; Motor-vehicle with three wheels, £3. Motor-carriages would probably be taken by cargo-boat which starts from Newhaven in the morning between ten and two, and from Dieppe in the afternoon. A day's notice should be given to the Superintendent at these ports. It is possible that vehicles might be taken by the night passenger service.

**FOLKESTONE AND BOULOGNE.**—Notice should be given to the Superintendent. Cars should be alongside by 10 a.m. for the 11.50 a.m. service. Boats leave according to tide.

**LONDON TO FOLKESTONE.**—Motor-cycles (unpacked) by passenger train between London and Folkestone, 4s. at owner's risk and as passenger's luggage, 8s. as parcels at owner's risk, 12s. as parcels at Company's risk. Motor-cars 36s. each.

The latest time for receiving at London stations by the Boulogne route is 5 p.m.

**BOULOGNE TO LONDON.**—The rate of transport of an automobile carriage, either in a closed case or open to view, from the Quay at Boulogne to London, by ordinary rail journey, is 45 fr. 20 c. per ton (1,015 kilos.), if the Company is to be held liable; if at the risk of the senders, 35 fr. 20 c. per ton. For motor-cycles, either in closed or open cases, the charge is 28 fr. 70 c. per ton, at the Company's risk, plus a fixed tariff of 2s. paid by the sender.

The rate for packed-up automobile vehicles from the Quay at Boulogne to London, by express service, is at the rate of 13 fr. 50 c., plus 1s. (1 fr. 20 c.) on each fraction of 20 lbs. (9 kilos.).

Cycles of all descriptions are subject to the same tariff, with an addition of 50 per cent.

Automobile vehicles, not packed, are transported at the owner's risk, and rated as four-wheeled carriages, as follows—(Boulogne to London), £4 15s. (118 fr.) provided that the tariff charge is not in excess of the weight.

**SOUTHAMPTON AND HAVRE.**—Cars have to be alongside the Quay at 2 p.m. The boat starts at 12 midnight. The Customs House at Havre is not open on Sunday. The journey should not be made therefore on Saturday night. There is no boat to or from Havre on Sundays.

| Charges            | s. | d. | s.           | d.   |
|--------------------|----|----|--------------|------|
| Motor bicycles ... | 5  | 0  | accompanied, | 10 0 |
| " tricycles ..     | 10 | 0  | "            | 20 0 |
| " cars ...         | 47 | 6  | "            | 47 6 |

**LONDON AND SOUTHAMPTON.**—Motor-cycles in guard's van, 3s. per cwt. based on actual weight, with a minimum charge of 4s. if accompanied, and 6s. if unaccompanied, by a passenger, at owner's risk.

Motor-cycles, if in special truck, 39s. each from station to station at owner's risk, and 48s. 9d. at Company's risk.

Motor-cars, 39s. each at owner's risk, and 48s. 9s. at Company's risk from station to station.

**LONDON TO BOULOGNE OR CALAIS (GRAND VITESSE).**—Motor-cars in crates with wheels detached are charged at ordinary parcels rates. If on their own wheels, they are charged as four-wheeled carriages. Rate £4 15s., unless the charge is more at weight rate. If not in crates, at Company's risk 50 per cent. extra to O.R. rates.

THE Daimler Manufacturing Company, Steinway, L.I., U.S.A., have just completed two additions to their factory, 50 by 125 ft., for machine work, and a testing house of smaller dimension. They have recently imported eight different styles of Daimler and Panhard-Levassor cars, etc.

THE *Universal Automobile Gazette* is the name of the new and first journal devoted to automobilism in Austro-Hungary. It is published in Vienna, under the guidance of M. Félix Stern, and should command a large circulation in view of the activity so manifest in all quarters of Austrian automobilism.

A DEED of arrangement with creditors has been made by Harry Mott, trading as the National Motor Car and Cycle Co., Park End Street, Oxford. The liabilities unsecured amount to £740, and the property, in addition to secured claims, is estimated to amount to £533. The trustee is Mr. P. Bates, 110, Edmund Street, Birmingham.

UNITED MOTOR INDUSTRIES (Paris), 64 and 65, Holborn Viaduct, London, E.C., inform us that they have secured the sole British and Colonial Agency for all the goods manufactured by Messrs. Sclaverand of Paris. The tanks, pumps, etc., manufactured by this firm have for long enjoyed a high reputation in this country as well as in France.

THE Phoenix Motor Vehicle Company, Cleveland, O., is bringing out a petrol delivery vehicle modelled after one just completed and successfully operated by Mr. R. M. Owen, the company's engineer. The vehicle has a carrying capacity of 1,000 or 1,200 lbs. of merchandise. The motor has two cylinders, 5 by 6 in., occupying a space of 11 by 32 in. The transmission of power is accomplished by four gears, giving two speeds forward—6 and 16 miles per hour—and one speed back. The backing mechanism is contained in a space of 2½ in. in width, and is so arranged that when not in use it revolves with the shaft, thereby causing no friction from that source.

## TO CORRESPONDENTS.



All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

VOL. I.]

LONDON, FRIDAY, FEBRUARY 16, 1900.

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## COMMENTS.



THE severe weather of the past week or so has done much to remove the impression still prevailing in many quarters that the automobile is only a fair weather vehicle, and that no enjoyment is to be found in motoring except when the sun is shining and the roads are dry. That the very opposite is the truth was well indicated by the large number of motor-cars to be seen in and around London last week-end—in fact, they appeared to be more numerous than usual.

Notwithstanding the cold, frosty weather, quite a number of automobilists took their cars out for a trip, and many were caught in the sudden and severe snowstorm of Saturday night last, thus adding a new experience to the many novel incidents which automobilism has afforded to its devotees. That snowstorms have no deterring effects on enthusiastic *chauffeurs* is plainly evidenced by the Hon. C. S. Rolls and party's Christmas tour, recently referred to in these columns, to say nothing of Mr. C. Johnson's adventures on snow-clad hills while going over the route of the forthcoming Automobile Club 1,000-mile trial, and of Mr. Campbell Muir's ride on Count Zborowski's 24-h.p. German Daimler car from Stuttgart to Havre. We have received some further particulars of this trip, from which we learn that the journey from Strasburg to Nancy, a distance of 155 kilomètres, was made in a blinding snowstorm, notwithstanding which it was accomplished in five hours.

### Motor-Cars in the Snow.

To return, however, to last week-end, although the elements on Sunday after the storm were anything but of an inviting character, yet as early as 9.30 a.m. we heard the toot-toot of a motor-car passing our residence, the return of the same car in the evening being heralded by the crackling of the frozen snow under its wheels. If this note catches the eye of this ardent *chauffeur* he may be induced to send us an account of his adventures—for adventures he must have had out motoring on such a day as last Sunday. There may, too, be other automobilists who have enjoyed trips during the recent wintry weather, from whom we should be only too pleased to receive short accounts of their experiences. For ourselves, we used our car every day last week, and finished up on Saturday with an enjoyable airing round Hyde Park. The frost, snow, and slush appear to have also had no effect on the many motor delivery vans and heavy automobiles now used in London, these continuing their useful work, irrespective of the state of the roads. Altogether, bad as the weather has been, we do not regret it, as it has gone a long way to demonstrate the all-round useful character of the motor-car, both in the summer and in the winter. Naturally, to thoroughly enjoy a ride at the present time, it is necessary to make adequate provision

against the cold in the way of appropriate raiment. There are now several firms, like Dunhill's, devoting attention to this department, who, while not going to the extent of the costume depicted in our issue of October 20th last, are now producing special clothing, etc., for winter touring in accordance with English tastes, so that a ride in the present sharp weather, with its exhilarating effects, can be safely indulged in.

### A New Electrical Vehicle.

ON Monday we had another automobile trip in the snow, on the new electric Tally-ho coach, lately constructed by the Electrical Undertakings, Limited, of Camden Town. This is probably the largest electrical vehicle at present being used in this country, it having accommodation for no fewer than thirteen persons, the seats being arranged in four rows, *char-à-banc* fashion. The car has a novel and attractive appearance, and is driven by two Lundell electrical motors. The latter drive the wheels direct through spur wheels meshing with internally-toothed rings bolted to the wheels. The electrical energy is stored in a battery of 80 Leitner cells, the capacity of which is stated to be sufficient to run the car from London to Brighton, and back as far as Redhill. We understand that a new battery is being constructed which, while being lighter, will have a capacity equal to a run from town to Brighton and back. The car is provided with six forward and two reverse speeds, the controller switch being connected up so as to vary the grouping of the cells and the windings of the armatures of the motor. The road wheels are of wood, of strong construction, and are shod with 4in. solid rubber tyres; the body is well sprung, while the steering is controlled by a horizontal hand wheel. Our trip on the vehicle was but a brief one, but it included a run over the hard snow in Regent's Park, followed by one amid the too plentiful slush in several busy thoroughfares in the West End. Notwithstanding these variations in road conditions, the car behaved splendidly, and we are looking forward to the result of the long-distance run it is intended to make, as soon as the new battery of accumulators above referred to is completed, with interest.

### An Experience.

MR. S. F. EDGE is another *chauffeur* who was not deterred by the weather from taking out his car for a trip on Sunday last, and during the day, we understand, he covered over 100 miles. On the return journey, near Crawley, his party came in for a most unpleasant experience, that of being snowballed by a group of young country fellows. Had the missiles been only of soft snow no harm would have been done, but seeing that they consisted of hard frozen snow, and that one landed in the eye of Mr. Edge, we are not surprised to hear that he stopped the car and gave chase. It was not until several fields were traversed that he caught one of the offenders, to whom he administered a well-deserved punishment, bringing away with him, too, some records of the struggle in the shape of a sprained wrist and of an overcoat and other articles of apparel!

### A Renault Car in the Snow.

OUR Midland correspondent writes:— On Monday I had a very enjoyable run with Mr. J. Scarborough, of the Automobile Supply Company, Birmingham, in their smart little Renault car, fitted with a 2½ h.p. De Dion motor. The Arctic conditions just suited the purpose Mr. Scarborough had in view. He was anxious to see how the car would behave on the snow-covered roads, and determined to travel some twenty miles or so in order that the test might be of the severest character possible. Accordingly we rode out to Mucklow Hill, at Halesowen, the scene of the recent hill-climbing tests in connection with the Midland Cycle and Motor Show. The distance from Birmingham is about nine miles. I have been in a good number of motor-vehicles, and have enjoyed to the full the delights attendant upon rapid progression with scarcely any apparent motion of the car. But I have seldom travelled so comfortably as I did on Mr. Scarborough's smart turn-out. Before reaching Mucklow Hill we overtook a four-horse 'bus travelling up a noticeable gradient. The snow on the roadway here was several inches deep, and the going was consequently of the heaviest character. Still, we had no difficulty in overhauling and passing the 'bus, to the surprise of the driver and passengers, who seemed disposed to look upon our small car as a weakling. In other parts of the journey there must have been half a dozen inches of snow on the ground, but our conveyance ploughed through it with surprising ease. Considering the stiff gradient of Mucklow Hill—one in ten, I believe—we did not expect to run up with a full load, our engine, as I have stated, only being of 2½ h.p. Taken as a whole the trial was a most satisfactory one. There was no hitch of any kind, and the car ran smoothly and easily throughout the journey. One could not help noticing the ease with which Mr. Scarborough controlled the car, and the simplicity of the steering arrangements. The air was crisp, but the sun shone out nicely during the ride, which was most exhilarating.

### Winter Motoring in the Midlands.

ONE hardly dare refer to the weather of the past week, continues our correspondent. Biting frosts and snow-covered roads probably render motoring unattractive except to the more experienced and weather-hardened. These, it would seem, however, are fairly numerous in the neighbourhood of Coventry. On Saturday quite a number of motor-cars were to be met, Stoneleigh, Kenilworth, and Leamington being visited. One young lady, who considers herself almost an invalid, rode in a motor-vehicle from Kenilworth to Leamington on one of the most wintry days of a decided Arctic week, and declared that she felt much better. I know of another individual, a gentleman this time, whose health is very trying at times, and he has a strong conviction that the motoring he has had during the winter months has been most beneficial.

### A Motor-Bus Service for Lincoln.

WE learned that a meeting was held last week at the offices of Messrs. W. S. White and Co., High Street, Lincoln, to consider the advisability of forming a motor-bus company for Lincoln. Mr. W. S. White presided, and, in explaining the work of the proposed company, said that it was suggested there should be three cars, and the route would be along Monk's Road, Butchery Street, Corporation Street, West Parade, Moor Street, Carholme Road, Newland, Mint Street, Silver Street, and back to the starting place. The route might be divided into four penny stages. Two cars could start simultaneously from opposite ends of the route, so that they might pass a given point every ten minutes. The estimated initial cost was £1,350, and it was suggested that the hours of running should be 8 a.m. to 10 p.m. The nominal capital would be £5,000, of which £2,000 might be called up at once. The Chairman pointed out that there was decidedly an opening for the service, and there was also great opportunity for the development

of a private hire business. In the course of time a parcel delivery for tradesmen would also be possible. We are informed that the proposed service was discussed with much interest, and that over £1,100 was subscribed in the room. A committee was appointed to further consider the matter, Mr. William White, jun., being appointed secretary pro tem.

### From Hong Kong to Paris by Motor-Car.

SOME time ago it was announced that Dr. Lehweß, of the Automobile Association, Limited, had determined to undertake a journey by motor-car early this year from Hong Kong to Paris. Such a bold hazardous enterprise naturally attracted much attention in automobile circles and further particulars of the undertaking have been awaited with interest. We now learn that Dr. Lehweß still intends to make the journey, but that he has been compelled to postpone the trip until the spring of 1901 owing to it having been found impossible to complete the necessary arrangements soon enough to permit of his undertaking it in the early part of this year as was at first contemplated.

### The Speed of Automobiles.

WE are glad to see that the Automobile Club is taking steps whereby its members at least shall not endanger the future of the automobile movement by transgressing the laws of the country as to the speed of motor-vehicles. At the extraordinary general meeting of the club, which is to be held on Monday, the 26th inst., several new club rules are to be brought forward, among which is the following:—"In the event of any member being, in the opinion of the Committee, guilty of reckless driving under circumstances involving conduct which the Committee may consider unsportsmanlike or ungentlemanly or prejudicial to the interests of Automobilmism, he shall be called before the Committee, and failing a satisfactory explanation he may be cautioned or suspended, or required to resign his membership." The following addition to the Club Regulations will also be submitted for adoption:—"Members taking part in club runs or tours by doing so shall undertake that within certain areas they will keep behind the leading motor-vehicle and will strictly avoid passing the motor-vehicle which may be in front of them, and running abreast within such areas. It is the duty of a member taking part in a club run or tour to see that he is fully informed as to the districts in which a speed of not exceeding eight miles an hour must be observed and the portions of the route in which the regulations above mentioned must be adhered to." As these proposals have only been brought forward as the result of mature deliberations on the part of the Committee, there is little doubt that they will meet with the approval of the members.

### The Insanitary Condition of London Streets—Motor-Cars the Panacea.

THE insanitary condition of London streets was the subject of a paper read on Wednesday evening before a meeting of the Sanitary Institute by Mr. W. Nisbet Blair, engineer and surveyor to the St. Pancras Vestry. In the course of his paper the author said that he was not likely to meet with contradiction in making the assertion that our streets were frequently in a very uncleanly condition; though whether that meant an insanitary condition was at any rate open to argument. He held that for a time it did not, for, until decomposition commenced, the multiplication of bacterial life did not make any progress. In conclusion, Mr. Blair expressed the opinion that so long as horse traction continued we should be unable to keep our streets in a condition which would escape complaint, for, besides the droppings distributed continually, there was also the ultimate gravelling and watering, the latter natural or artificial, necessary to prevent the slipperiness or to lay the dust. The grinding up of all those by passing wheels ensured plenty of work for the scavenger, and until motor traffic became general he feared that no material improvement in the cleansing of our streets, coming within a reasonable limit of cost, could be secured.



**Motor-Car Services  
in Ireland.**

A CORRESPONDENT signing himself "Motor-Car," in the course of a letter to the *Irish Times*, remarks that "it is strange that as yet no one has speculated on running motor-cars between Dublin and Enniskerry to carry passengers, etc.

This would be a great boon to the working class in particular, also to tourists returning to town after visiting the County Wicklow. Further, it would open up the country, which is looked upon by many as a health resort, and would encourage building. Also, if the cars were made suitable for the carrying of mails from the General Post Office, Dublin, to Enniskerry, it would greatly promote their speedy delivery and despatch, all the post-offices being on the main thoroughfare. Again it would be an annual saving to the Post Office department, in carrying the mails to and from the railway stations to their respective offices—*e.g.*, Bray, Carrickmines, or Stillorgan."

**The "Encyclopædia  
Britannica"  
and Automobiles.**

A FEATURE of the many annual books and references that have come under our notice during the past month or so has been the inclusion, for the first time, of a chapter or paragraph devoted to motor-cars. These are all signs of the times,

but a more significant one is to be found in the fact that in a new supplement to the "Encyclopædia Britannica" the chapter on the subject of engineering is to include a section dealing with automobiles. We understand that the contributors of this section are Professor Hele-Shaw, of Liverpool, and the Hon. C. S. Rolls, the former treating of heavy motor-vehicles and the latter of light cars.

**The Automobile  
Club of America's  
First Run.**

THE first run of the Automobile Club of America took place on Saturday, the 27th ult., under unfavourable weather conditions, a raw, cold wind blowing. A De Dion motor-cycle, five Winton cars, three Locomobile steam cars, and two electric vehicles started from the Waldorf-Astoria, New York. The *Horseless Age* states that the Winton cars made the journey in good style; only one Locomobile got through, the others being put out by the freezing of valves and other causes, and the two electric cars disappeared soon after the start. The destination of the party was the summer house of the club at Kingsland Point, where a generous lunch was served by Mr. John Brisben Walker, after which the return was made to New York without accident.

**Horse v.  
Motor-Car.**

FREQUENTLY have we pointed out that horse-owners have responsibilities with regard to the tempers of their animals, just as the proprietor of a motor-car must be regarded as responsible for the behaviour of his vehicle. One of the

most salutary lessons in that direction which has been administered recently occurred at the Newport Pagnell County Court, where the owner of a valuable mare claimed £20 from a local motor-car company in the following circumstances:—The mare had been exhibited at a horse show, where it secured a first prize. Subsequently it was being driven home in the dark, when it was overtaken by the defendant's motor-car. The animal became unmanageable, and galloped in front of the car, which ran into it and inflicted serious injuries. The car was forced into a ditch at the side of the road, and a counter claim of £3 was entered for the resultant damage which it sustained. After hearing evidence on both sides the jury found for defendants on the claim and for the plaintiff on the counter claim. The owner of the horse appears to have been under the impression that the mere frightening of the animal was in itself an illegal act. In future he will recognise the necessity of educating his horses to behave themselves in presence of motor-cars, and their instruction should not be long delayed.

**A  
Fifty-Mile  
Ride.**

A PLEASANT journey, proving the delights of winter motoring, was undertaken by the writer and two ladies on Wednesday week, when the temperature was well below zero. The roads were hard and frozen, the asphalt dry, and the macadam, as usual, somewhat bumpy. Our ride was from Bloomsbury along Piccadilly, over Putney Bridge, through Kingston Bottom, Kingston, Esher, and Cobham, to Ockham, Surrey, where lunch was partaken of. The surface of the Fairmile was like a sheet of ice, and as we travelled over it a noise like the smashing of glass accompanied us. The car "side-slipped" a great deal, and "first" and "second" speeds had to be used. Turning off the Ripley Road into a country lane, the road was full of the most villainous ruts, and the travelling was most uncomfortable, but all went well, and our destination was duly reached before two o'clock. Although the frost was so severe, neither the writer nor his companions felt the cold to any extent, although the former, taking advantage of some of the up-grades, got out and ran beside the car. On our return, the landlord of the "Hautboy" (where a capital hot luncheon had been provided) kindly showed us a more direct and better road back to Cobham. Excepting a short stoppage for a cup of tea at Kingston, town was reached without adventure. The ride was looked upon by all as one of the most enjoyable undertaken for a long time.

**On the Stage.**

ONE of the attractions of New York music halls is a performance by two sisters on the Orient "Autogo"—a motor-quadricycle made by the Waltham Company. "What the Beaumont sisters," writes an American critic, "lack in Melba-like ability as to verse and voice, and in Spanish dexterity as to terpsichorean curves, they make up by their audacity, dash and style in rushing the 'Autogo' about the stage. It is a glistening, moving, vital thing. The audience immediately set their hearts upon it." Probably the motor-vehicle may be put



to a similar use in this country some day, and then—well, we won't prophesy. Whether this is a class of entertainment likely to catch on in this country may, perhaps, be imagined from a contemplation of the ladies as they appear during the performance. Since the foregoing was written we notice that at one of the South London theatres a drama is just now on the boards entitled "The Power of Gold," in which the motor-car is utilised. We have not seen the play in question, but the posters used to advertise it depict a motor-car going at full speed, the driver

appearing to be eloping with a baby. The picture of the driver steering the vehicle with one hand and hugging the child with the other should draw crowds to see "The Power of Gold," to say nothing of the motor-car and the baby!

#### Automobile Progress in Spain.

It cannot be said that automobilism in Spain has marched apace up to the present, but there are signs of an awakening, and in the near future one will see a distinct advancement of the industry. It is more particularly in the direction of public automobile services that the possibilities of the self-propelled vehicles are now being realised, and in several provinces active steps are being taken to institute regular lines for the conveyance of passengers and merchandise. One of the most serious difficulties in the inauguration of these services is the condition of the roads, which in many districts is excessively bad. This is the trouble at Barcelona, where, but for the state of the road, a regular service of automobiles would probably be now in operation between that town and Tarragona. It is, indeed, very possible that the project of connecting the two towns by such a service will have to be abandoned on this account. Barcelona and Rabassade will probably be connected next month by a line of motor-vehicles, and steps are being taken to provide Valladolid and Murcia with similar services. It is said that there are about fifty automobiles in Madrid, but they are privately owned, and so far the tradespeople have not employed the motor-car to any extent for business purposes.

#### The Hiring Out of Automobiles.

THE evils of hap-hazard hiring out of motor-vehicles to unknown persons received striking confirmation last week at Nice, and the incident should have a salutary effect upon automobile firms, and render them less prone to entrust their machines to all and to any persons who may happen to come along with money in the hand. A few careful inquiries and a little observation as to the would-be hirer's management of the machine would be quite sufficient to enable an opinion to be formed as to the wisdom of intrusting a motor-vehicle to his care, but we fear that only too often are these precautions neglected. In the case recently reported from Nice the hirer of a motor-cycle was passing along the Route du Var at full speed, when he knocked down and very seriously injured a lady who was crossing the road with her little child, aged four years. After this feat the *chauffeur* charged violently into a tree at the side of the road, and then left the machine and took to flight. The subsequent police inquiries showed that the cycle had been hired by this individual, who had given his name as Pierre Richard to the owners, but all investigations at his alleged address failed to discover him. It seems almost incredible that any automobile firm should so far forget what is due to the general public as to place automobiles in the hands of strangers without being thoroughly assured of their entire competence to manage them. Hiring-out firms should take warning by this accident and amend their ways before something more serious occurs.

It is stated that no less than ten of the corporations which sent deputations to the recent heavy-vehicle trials of the Liverpool Self-Propelled Traffic Association are taking active steps to introduce motor-wagons for refuse removal.

THE New Era Cycle and Motor Company, Limited, has been registered with a capital of £1,000, to acquire the business carried on at 14, Holborn Viaduct, E.C., as J. Jones and Company, and to carry on the business of cycle and motor manufacturers, engineers, etc.

THE Automobile Club of Great Britain has been requested by the committee of the Glasgow International Exhibition of 1901 to act as the advisory body in connection with the automobile section of that exhibition. In connection with the matter the committee of the club has called a meeting of automobile manufacturers and agents, to be held at the club on Monday, the 26th inst., at 3.30 p.m.

## THE FORTHCOMING RACING SEASON.

THE discussion on this subject among the members of the Automobile Club, brought about by "Looker-On's" letter to the Editor which appeared in these columns some weeks ago, continues apace. Mr. S. F. Edge is the latest to take part in the discussion, a letter from that gentleman, which appears in the current number of *Club Notes*, being reproduced below:—

"I must say I entirely agree with Mr. Rolls' remarks in reference to the sensational statements regarding the large horse-powered cars that it is rumoured are going to be used. Personally, after making very careful inquiries, I do not believe we shall see these large horse-powered cars materialised for many reasons. Firstly, increasing the weight of the carriage is increasing risk of accident in that part of the carriage which in races seems to be most vulnerable, viz., the tires. Secondly, that it has been shown us conclusively that the transmission gear of the present carriages absorbs nearly half the available horse-power. There is evidently greater scope for improving the transmission mechanism than merely increasing the horse-power, which helps to accentuate the terrible loss of power at present existing in the transmission mechanism of the large motor-carriages. It is in improvements in this direction that we shall require extra developments, rather than in merely trying to put in larger engines."

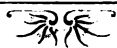
## THE AUTOMOBILE CLUB 1000-MILE TRIAL.

THE Standing Committee of the Automobile Club have recommended to the club committee the adoption of the following alterations in the rules affecting the amateur class, Section II., in connection with the above trial:—(a) That the entry list should remain open to March 1st at 12 noon without payment of an addition to the £10 entry fee. Before March 31st at noon £2 10s. per vehicle; before April 14th at noon (final hour for entries) £15. (b) That the club should award in respect of every vehicle in Section II. which may successfully accomplish the trial, i.e., make an average every day of not less than five miles per hour—(i.) £5 in cash, or if preferred a cup, value £5; (ii.) a bronze medal, or (iii.) if the owner of the vehicle accompanies the vehicle throughout, and drives and steers it for at least half the distance, a silver medal. (c) That the club should also award—(i.) A gold medal (only) in respect of the vehicle in Section II., which, in the opinion of the judges, may be the most meritorious in the whole section, irrespective of class. (ii.) An inscription on a clasp or on the medal awarded in respect of the vehicles, which, in the opinion of the judges, may be the first and second in order of merit in each class of Section II. (d) That the number of passengers or equivalent weight carried by vehicles in Section II. shall be at the discretion of their owners. The number of passengers, including drivers, shall be declared in writing by the owner not later than Saturday, April 14th, and not less than the number of passengers, or weight, so declared shall be carried; the certificates will state the number of persons or weight carried during the trial, and the number of persons or weight will be taken into account in judging as to awards.

Three additional cars have during the past week been entered in Section I. one by the International Motor Car Co., Ltd., and two by the London Motor Van and Waggon Co.; while in Section II. Mr. E. Pitman has entered a 6-h.p. Daimler car.

THE Collier Tyre Company, Limited, has been registered with a capital of £20,000 to acquire certain patents relating to twin pneumatic and other tires, to adopt an agreement with A. T. Collier, and to manufacture, repair, and deal in tires, and metal and other tubing for cycles, motors, cabs, and vehicles, and for other purposes.

# The General Aspects of British Automobile Manufacture.



A DINNER was held at the Automobile Club, on Wednesday, February 14th, in honour of Major R. E. Crompton, a member of the committee of the Club, who is about to leave for South Africa in command of a detachment of the Electrical Engineers Volunteer Corps. Amongst those present at the dinner were Mr. Roger W. Wallace, Q.C. (the chairman of the Club), Captain Lloyd, R.E., Captain H. M. Leaf, Lieutenant O'Shaughnessy, the Hon. John Scott Montagu, M.P., Captain the Hon. Cecil Duncombe, J.P., Mr. Hiram Maxim, Mr. Frederick R. Simms, Major R. E. Crompton, Mr. A. S. Bolton, Mr. R. Muirhead, Mr. D. J. Diplock, Mr. R. S. Erskine, Mr. Worby Beaumont, Mr. R. E. Phillips, Mr. E. J. Mears, Mr. W. H. Kitto, Mr. Staplee Firth, Dr. Ackworth, Mr. R. W. Buttemer, Mr. H. F. Julian, Mr. T. J. Perrett, Mr. C. Cordingley, Mr. E. Shrapnell Smith, Mr. G. H. Thrupp, Mr. C. Oppermann, Mr. F. Warne, Mr. H. Mulliner, Mr. S. F. Edge, Mr. Roger H. Fuller, Mr. Claud Crompton, Mr. W. J. Leonard, Mr. Jules de Meray, Mr. H. A. House, Mr. Julius Harvey, Mr. H. Edmunds, Mr. E. Pitman, Mr. H. J. Sturme, Mr. J. D. Liddleby, Dr. E. E. Lehweß, Mr. Thomas Clarkson, Mr. Frederick Strickland, Mr. Lyons Sampson, Mr. S. F. Beevor, Mr. Mark Mayhew, the Hon. C. S. Rolls, Mr. P. Northey, Mr. W. H. Fuller, Mr. Stanley Spooner, Mr. Gretton, and Mr. C. Johnson, the secretary. At the conclusion of the dinner, and before adjourning to the smoke room, the chairman proposed the health of and success to Major Crompton, Captain Lloyd, Captain Benn, Lieutenant Pott, and other members of the Electrical Engineers Corps going out to South Africa. The toast was received with the utmost enthusiasm, and was accorded musical honours. Major Crompton and Captain Lloyd briefly replied. Afterwards the Hon. J. Scott Montagu, M.P., read a paper on "The General Aspects of British Automobile Manufacture," an abstract of which is given below:—

In the early days of any industry there is a difficulty which arises, namely, how to induce the private capitalist, or the British public, to support schemes to manufacture articles of which they know very little, and in the success of which they do not believe. If you look back to the early days of railways, you will find that this was essentially the case, and the same thing has happened in the process of automobile manufacture. Necessarily much experimental work has to be carried out which, though it may mean an expenditure of thousands of pounds, may, in the end, be absolutely unproductive of commercial results. In the motor industry this is particularly the case, and any one who has had experience of experimental work in connection with motors knows that experiments and deviation of any kind from the accepted and proved models which have run and performed successfully on the road mean great loss of money, and results, in most cases, insignificant to the work performed. There is also a tendency to attach exaggerated value to patents, which in the motor world are very often not patents at all. One of the most cruel drawbacks under which a young industry can suffer is that of over-capitalisation, and this, I am sorry to say, has been rampant in automobile manufacture. This is all the more regrettable because the British public showed a distinct sign some four years ago of giving support to British motor companies. To-day the position is that the British public as a rule are unwilling to place any further funds in the motor industry, and the private capitalist is not yet convinced that the movement has come to stay.

Mr. Montagu then dealt with the financial doings in the automobile industry, declaring that he had decided not to buy motors from any companies with which Mr. Lawson is connected. He described the flotation of companies from 1896, in ten months of which year concerns with capitals amounting to £2,300,000 were promoted. The unsound character of some of these companies was illustrated from the report of the shareholders' committee of investigation in connection with the Daimler Company, and from a contemporary's criticism of the promotion of the British Motor Syndicate and the Great Horseless Carriage Company. Passing to the formation of the Motor Trades Association, Mr. Montagu denied that it represented British Automobilmism, and suggested that the Motor-Car Club was not a club. Criticism of the Pennington car led to a review of the present aspect and future prospect of the movement as follows:—

In considering British automobilism one's thoughts naturally turn

first to motors of British design, and having got thus far they naturally run to the work done in vehicles for heavy traffic, such as the vehicles of Thornycroft, Bayleys, Leyland, Coulthards, and others. I was going to add "Lifus" when I recollected that the "Lifus" owe their conception not to British brains but to the brains of American cousins. There is, however, a prospect of Lifus being further improved and manufactured by an English company. However, from what one reads and from what one sees it may, I think, be said that the United Kingdom—taking into consideration that the revival of the lighter steam locomotion is only a little over three years old, and the limits which are still imposed on it by law—is, if not actually ahead, not far behind France or any other nation in the excellence of vehicles weighing over 1½ tons and not more than 3 tons unladen. I am inclined to go further and to say that if the same advance is made, and if the same energy is displayed in the next three years as have been shown in the last three, the United Kingdom is likely to be at the top of the tree as regards vehicles for heavy traffic.

I am convinced that steam will play a more and more prominent part in the future of the motor movement both for light and heavy work. A steam racing carriage of great power is already in course of preparation for a friend of mine.

Turning to the "petrol" vehicles weighing 30cwt. and under, one feels bound to review, first of all, the work of the Daimler Motor Company. The company has suffered from many drawbacks. For instance, at a meeting of the company held in March, 1897, the chairman of the meeting pointed out that "the directors were handicapped from the fact that they had to learn the business themselves, and their first study had been to gain full information about the industry." They went to Paris, where they inspected the Daimler works of Panhard and Levassor, and they went to the German Daimler works. Such a course was distinctly wise. Now, it is very easy to criticise after the event, but one cannot help wondering what would have been the present position of the Daimler Company if the directors had, when they were in Paris, made up their minds to profit by the experience and brains of the Panhard firm, and had secured then and every year one of the latest Panhard cars, and had set themselves down to copy them lavishly until they had turned out a carriage as good as the Panhard, and not until then had allowed any attempts at improvement. Instead of the majority of the cars in this country being cars which, though in many respects admirable in workmanship, are antiquated—I had almost said antediluvian—in details and arrangement, all our Daimler cars of to-day would have been as up-to-date as the Panhard cars of last Spring. The reversible tiller steering would be buried and forgotten, the 6-h.p. cars of a ton in weight would be by the side of the "Rocket" in the South Kensington Museum, a car without a radiator would be condemned as a public nuisance, while cars that track with hind and front wheels, and fitted with pneumatic tyres, or their latest substitute, would be in general use, and the pitiable spectacle of a "four-wheeler" passing a panting motor-car on Savoy Hill would be impossible.

But it is as useless to cry over the past as it is easy to criticise the past from the standpoint of the present.

The Daimler Company is to be congratulated on having recently turned out the most up-to-date motor-carriage made in this country. My own 12 h.p., though now nearly a year old and not a racer, is a car of which I feel I have no reason to be ashamed, and the new 6 h.p. carriage, with aluminium introduced wherever possible, will, I am confident, be brought down to a lighter weight shortly, and when the refinements in detail which have been recently adopted by the French have been fitted, this car, though not original, will fulfil much more important requirements by giving a fair speed on up gradients and consequently a decent average, and by having an elegant appearance.

One hears a good deal of talk about the unreliability of British as compared with French cars. Sufficient tests of the cars of the two nations under similar conditions have not been held to enable me to speak authoritatively on the matter, but in the only test in which I have taken part, viz., the Paris to Ostend race of 200 miles save for a fractured water joint before the start (owing to a bad fitting by a French firm) and a punctured tire, I had not to stop once on the two stages of the journey, and though I started two hours and eighteen minutes late, I managed to come in third in the tourist class at Ostend. And from the many consecutive long runs I have made on my twin Daimler I cannot say I have come to the conclusion that my car is unreliable. English workmanship is, in my opinion, still as good as foreign, and in many points, such as castings and steel-work, we are distinctly ahead of other competitors.

The Daimler Company is building four 23 h.p. racing cars, one to the order of Mr. Alfred Harnsworth, one, I think, for Count Zborowski, one to my order, and one for the company itself. I think it is improbable that any British company will make a complete success in

the construction of a racing carriage at the first attempt, since the car will have to compete against cars built by firms who have constructed cars for racing since 1894. But I am convinced that the future cars of the Daimler Company will derive great benefit from the fact that the Daimler Company is now building these cars to compete in the classical races of the Continent, as undoubtedly racing improves the "breed," so to speak, of motors, and a company which has once commenced building racing cars will probably continue to do so, and in order to succeed must advance in general design and construction, and thus go far ahead of its non-racing contemporaries in the trade. I look upon this step—the participation in races—as one of the most hopeful aspects of British automobilism. If we had participated in French races instead of having the much advocated runs to Brighton, we should never have seen offered, as is now offered, as the beau-ideal of a gentleman's luxurious carriage, a car fitted with so diabolical and dangerous a device as a reversible tiller steering arrangement, which on contact with a brickbat or a deep rut is apt to break the driver's wrist or in some cases his neck.

Next to the Daimler Company probably the most important British manufacturing company is the Motor Manufacturing Company. The present directors of the company appear to have been indefatigable in their efforts, and their fine works now contain a quantity of valuable machinery controlled by a man who, as a works manager, has earned a very high reputation.

The company has turned out a number of tricycles on the De Dion system, of which there are good reports, and it has made a speciality of carriages for public service the motors of which were supplied until quite recently by the Daimler Motor Company. Great things are hoped of the 4½ and 12 h.p. motor vehicles designed and fitted with motors of the George Iden system, and I hope they may be very successful. It is evident that the directors have faith in them, since four are entered for the 1,000-mile trial, but it is a question in my mind if the money which must have been spent on the design and construction of these carriages could not have been better spent in making accurate copies of the Panhard carriages, and if experimental work, which as I have said before is the most ruinous work of all for a poor company, had been deferred until the company had placed on the market a carriage as good as the Panhard, which are now being bought not only by foreigners but by Englishmen at premia of from 33 per cent. to 100 per cent.

Great interest will be centred in the 1,000-mile trial in respect of certain cars and motor-cycles which are at present more or less dark horses—that is to say, little is known as to their capabilities. I refer, for instance, to the Simms Wheel, Century, Endurance, New Orleans, and Wolseley Voiturettes.

The Marshall car, an improved type of Benz carriage, which is manufactured at Manchester, and which obtained a bronze medal at the Richmond Show, showed good hill-climbing qualities at the June trials, but was not fortunate in the 50-mile trial. It is to be hoped it will prove its worth during the 1,000-Mile Trial.

The Ariel Cycle Company sell tricycles of the De Dion type, of which one hears well and hopes to hear better. But one would like to know if these tricycles are made by the Components Company or the Ariel Company.

The Napier motor has at present only been seen as fitted to a Panhard carriage and gear, but being of British manufacture, and seeing that the programme of its manufacturers appears to be intelligent, and that the business is directed by one of the best practical drivers, automobilists generally hope to see these cars highly successful. I am glad to say that Mr. Edge intends to race a 16 h.p. Napier in France this year, and doubtless he and Napier and Co. will gain much by the experience. In point of workmanship and practical details Messrs. Napier's cars are undoubtedly in the front rank.

The Lanchester car—two of which are entered for the 1,000-Mile Trial—is of British design and manufacture. It obtained a gold medal at the Richmond show and won high praise in the judges' report. It has no water system, and it will therefore be of considerable interest to note how the car performs during long runs. The originality displayed in its design is a hopeful sign for British automobilism. I hope we shall hear more of this energetic and enterprising firm.

Messrs. Roots and Venables deserve the highest praise for the persistency with which they have endeavoured to overcome the difficulties attending the use of heavy oil for the explosive engine of a motor-car.

The Koch heavy oil system is also being tried by English automobilists, and I am told that a company is about to be formed to build cars similar to those now working in France.

It is to be hoped that all our motor manufacturers will make a special study of the construction of explosive engines of high power in which heavy oil can be used, as there must be before long a considerable opening for the use of such vehicles in connection with military transport. It will be seen from a letter from Major Crompton, which recently appeared in the Club "Notes and Notices," that he is at the present moment on the look-out for such an engine for use in South Africa.

A most interesting letter from Mr. Bennet Burleigh, the *Daily Telegraph* correspondent in South Africa, stated last week that the "puffing bilities" in Natal had been invaluable, and had negotiated the drifts of the Tugela river with very heavy loads. In the warfare of the future, mobility of transport will be absolutely essential, and an army with only horse transport is doomed to be inferior to one using motor locomotion.

Amongst other British automobile inventions of which I believe we have reason to be proud are the Clarkson burners, automatic feed and coolers. Manufacturers of wheels, axles, and springs have not, unfortunately, yet turned sufficient attention to the making of those parts

suitable for motor carriages. It is very much to be hoped that a special study will be made of these parts, and that by next season motor manufacturers who may be constructing a car for competition for the Gordon Bennett Cup may be able to obtain suitable wheels, axles, and springs. The Motor Manufacturing Company have, I believe, got wheel-making machinery, but I do not think they claim to turn out wheels of design and construction similar to those used on the powerful continental racing cars.

The Dunlop Company have made pneumatic tires suitable for use with motor tricycles, but have not, I believe, as yet turned out a satisfactory 120 or even a 90 millimetre tire. I am glad to hear that this company is about to set up a special wheel-making manufactory for automobile wheels, and will eventually sell us big tires also.

The new Grappler Tire Company make a pneumatic tire, but I have been unable to obtain independent testimony of the results obtained from the use of these tires on a motor vehicle weighing from 18cwt. to 1 ton or more.

The Clipper Tyre Co. are selling a pneumatic tire which has hitherto been made in Germany. The Company, I am pleased to say, is entering a set of these tires for the 1,000-Mile Trial, and they announce their intention of manufacturing similar tires in Great Britain.

From all accounts we shall shortly hear a great deal of the compound tire made by Falconet, Perrideaux et Cie. This compound tire consists of vulcanite outside with a soft rubber core, and it is claimed for it that whilst it is practically indestructible it has as much resiliency as a pneumatic tire when the latter is blown sufficiently hard to support the weight of a motor-vehicle weighing a ton or more. I am inclined to doubt this statement, but for all that I believe there is no doubt that the tire is being used extensively in France, and has lately been fitted to a number of Panhard carriages.

I next have to tell you about electrically propelled carriages, and I must at once confess that I know very little of them. This, however, I do know, that there are being made in England electrically propelled vehicles which travel excellently and are extremely well adapted for town use. Perhaps amongst the best are those manufactured by Mr. Oppermann, the Electric Motive Power Co., and Headlands, but it would be a presumption on my part to state that any one of the electric carriages being built in this country is better than another, as my experience is very limited.

The Electrical Undertakings Co. have undoubtedly run a carriage from London to Brighton on one charge, but in order to do so it has been necessary to so nurse the accumulators as to bring down the rate of travel to a speed which has no practical utility, and in fact renders the journey a hardship rather than a pleasure.

I can, however, imagine no pleasanter form of road locomotion than a successful electric carriage. I believe that if electric carriages were manufactured to take boxes of storage batteries of a standard size, and if charging stations were instituted at every thirty miles on the big roads running out of London, at which the partly discharged batteries could, by a short operation, be changed for fully charged batteries, and if the batteries were such as to admit of the carriage covering, if required, a thirty-mile stretch in an hour, electric locomotion on the high road would become a favourite and most fascinating method of getting about the country.

I cannot conclude this paper without referring to the great advantage which has been enjoyed by French manufacturers, from the ready support which has been given to the automobile movement by the French Press. Even now, in this country, there are papers which scarcely deign to recognise automobilism, except to record accidents which, had they taken place in connection with the horse-drawn vehicle, would have been allowed to remain unnoticed.

Two articles which have recently appeared in the *Spectator*, upon the revolution of the roads which is to be brought about by motor-vehicles, have had marked influence on the press of the country, and the 1,000-Mile Trial of the club has been most favourably received by the Provincial Press. A recent issue of the *Field*, the principal sporting paper in the United Kingdom, has given a favourable notice concerning the club trial and motor-cars in general, but I know as a fact that automobile manufacturers in this country have to a very great extent to thank malign influences in the early days of the movement for the cold attitude of the Press towards automobilism.

To sum up, then, the great drawbacks hitherto to automobile manufacture in this country have been:—(1.) Unsound finance. (2.) Want of practical automobilists on the boards of the companies concerned in manufacture.

These two defects will no doubt be greatly remedied, but it will be several years before the industry can free itself from the influences which have prejudiced it from its birth.

The object of this paper has been to state truthfully and clearly the difficulties concerning the manufacture of automobiles in this country. I have also endeavoured, without fear or favour, to point out what I consider to be the weak points, and to designate, in some cases, where I think improvement might be made. I know, both as an automobilist and as a Member of Parliament, that criticism is much easier than construction, and that there is hardly any industry in the country with which one could not find fault if one set one's self out to look for it. But to an audience such as this, where there are many who know far more about automobile manufacture than I do, I am sure that these remarks will do good inasmuch as I think they crystallise the ideas of those whom I believe are the leaders of this movement, and will tend to give a clearer outlook for the future. There is plenty of room to-day for new, honest, English manufacturing companies, and existing engineers all over the country need not be afraid, if they will only



profit by the experience already gained, of making a loss on this class of work.

In conclusion I would wish to sound a note of warning, and at the same time of encouragement. I feel sure that the people of this country are slowly but surely being converted to the advantages of self-propelled vehicles, but their conversion is being delayed by the intolerant action of many automobilists, on the one side, and on the other, by the badness of much of British motor manufacture. An accident by which anybody is injured has an exaggerated effect upon people's minds, and injures the movement; while it is not less prejudicial to have cars possessing miserably inadequate horse-power struggling at two miles an hour to overcome even a moderate gradient. We must learn to build strong, even though they may be cheap cars, and we must be careful about irritating the susceptibilities of the public while on the road. I am sure that the House of Commons is decidedly more favourable to the movement than it was a year ago, and if we are not in too great a hurry, I think, from a legislative point of view, we need fear no rebuff.

All automobilists should stand together in defence of their favourite pursuit, and in no way can they strengthen our cause better than by joining the Automobile Club, which has the best interests of the movement under its care.

### THE DISCUSSION.

Mr. Hiram S. Maxim having opened the discussion with some reminiscences,

Mr. J. H. Gretton expressed astonishment that so much of the early part of the paper was concerned with personal attacks on individuals. He was addressing a number of gentlemen who were not shareholders in the companies referred to, and he did not see the value of any attack upon the promotion which had taken place. Personally he was not interested in any question of promotion. He (the speaker) was elected two years ago by the shareholders of the Motor Manufacturing Company to be the chairman. After inquiring into the objects and examining the question as to whether it had the basis of possible honest business, he accepted that position. From that new departure no attack ought to be made upon the shareholders who desired to take their affairs in their own hands. The Motor Manufacturing Company started to do the best it could under the circumstances. They had many difficulties to contend with. It was a question to consider whether, when they dealt with the question of the manufacture of automobiles in this country, the club should allow an attitude to be taken which seemed to set itself as a separate institution against some other institution. ("No, no!")

The Chairman explained that nothing had been said as to the view of the club on the matter. Any expression of opinion that had been given was the view of an individual, and Mr. Gretton had a perfect right to express any views of his own.

Mr. Gretton, continuing: He was endeavouring to establish this point, that the attitude taken by Mr. Scott Montagu was to mention different institutions and contrast them with others. He did not think that was advisable. It was necessary that he should refer to the Motor Trades Association, because he was connected with that association, and he should like to explain the attitude he took with regard to it. Some time ago it was mentioned at the club that it might be advisable that the automobile trade should form themselves into a group for trade purposes—to consider questions concerning trading alone. There was a distinct difference between the basis of a club which had certain social advantages and a trade one which had a commercial basis. There was a dividing line, and it was thought advisable there should be an organisation of the men having commercial interests, apart from the question which concerned the club at large. He thought it was a good idea, and took a prominent attitude with regard to it. All of a sudden Mr. Lawson thought it was right that he should take the initiative in the matter, and he proposed to form this Motor Trades Association. He (the speaker) felt that having laid down the point that there was a reason for such an institution, it was not right for him to entirely ignore it. Therefore he thought that if only for the sake of giving some opinion that it should be arranged upon an honest basis, it would not be right that he should not have some say in the matter. When the invitation was sent to him, he considered it right to go to the meeting. He attended, and subsequently the question arose as to who should be the treasurer. He saw no reason why he should not accept that position. He did

not think it would be wise that Mr. Lawson should be president, and he (the speaker) urged everyone present not to elect him; but the meeting thought otherwise, and the majority prevailed. In his opinion there was a reason why such an institution should exist. He did not say that the association would succeed; that was nothing to do with the question. With regard to who was chairman or president for the time being, he pointed out that under no circumstances could the president exist for more than a year. As representing a portion of the industry of automobiles in this country, he thought it was right he should give his opinions, and have some say in the way this association should be carried on. Nothing very great had happened, and with regard to the Motor Trades Association, no man was able to cast a slur upon the proceedings, which had been conducted in an honest and straightforward manner. He did not defend it; and he did not say whether it ought or ought not to exist. With regard to automobilism in this country, he had heard it stated by Mr. Scott Montagu that English cars were not equal to those constructed abroad. There were enthusiastic gentlemen in this country who were pioneers in assisting to bring motor carriages here. Had they assisted in any way to help in increasing the knowledge of how British manufacturers ought to construct motor carriages? Had they even put themselves into communication with those who were desirous of perfecting motor carriages in this country? According to his experience, extending over the last two years, they had done absolutely nothing. On no occasion, so far as he could say, had they done a single thing to help the British maker, and not only that, but his friend Mr. Scott Montagu, who had addressed them that night, had not done anything in perfecting the motor-carriage in this country but had actually associated himself with an institution which was formed to introduce foreign-made carriages into Great Britain. It was the misfortune of manufacturers in this country that instead of being assisted, and instead of automobilists doing everything they could for the benefit of those who were honestly desirous of doing their very utmost to produce automobiles here on the best possible basis, they had formed a company in this country for the purpose of producing a rivalry and competition against motor-vehicles made in Great Britain. Was that the way to promote the progress of the manufacture of automobiles in this country? He had no personal interest in the matter. He had no desire to criticise Mr. Scott Montagu, or to introduce any feeling of criticism into the club, but he was desirous of pointing out what he thought was the true state of affairs. British automobile manufacturers were labouring under the greatest possible difficulties. They had not a clear road like those on the Continent. They had not, as they had in France and Germany, one company making a particular kind of vehicle; but they had keen competition in this country, and when vehicles were made it was very difficult for British manufacturers to obtain a proper price for them. When Mr. Scott Montagu criticised Mr. Lawson it was extraordinary that he was associated with the very company that had its root and branch absolutely derived from Mr. Lawson. That company could not exist had it not been for having made an arrangement with Mr. Lawson, and when they made an arrangement what was its object? To create an opposition against the very vehicles that his (the speaker's) company had for some time past been making patterns and putting down the machinery to construct. Was that the way to promote British manufacture? If so it was a very funny way. Only that day he had had an adverse decision against him in the High Court of Justice, where one of the judges of the court himself laid down the plaintiff's case and gave a verdict. In face of such difficulties they needed every encouragement. Before British manufacturers could make good motor-carriages they must put up the most improved automatic labour-saving machinery and wait a long time for the result—probably two or three years. Notwithstanding all this, the gentlemen who were foremost in using automobiles in this country—gentlemen of whom they were proud—conscientiously, but he believed erroneously, set themselves to encourage the foreign manufacturer, and did nothing to assist the British manufacturer. He hoped if there was nothing else gained by the discussion it would result in redressing



that error, and in persuading those gentlemen to give up assistance to foreign manufacturers and to assist the British manufacturer. With regard to Mr. Lawson, he might say he knew nothing about him personally, except that he had met him on several occasions and recognised that he was a very clever man. But he asked automobilists when they found a company the administration of which was working to produce good machines, and doing their best in the interests of their shareholders, to turn their attention to assisting them instead of criticising. He meant assistance in the direction of telling British manufacturers how to improve their vehicles. If they tried to get into the workshops of Messrs. Panhard and Levassor they would not get there. ("Question!") It was not a question so far as motor manufacturing companies were concerned. Some gentlemen who went there to pay their money and order a machine might get there, but they would not let in the British manufacturer. The foreigner wanted to sell his wares, but would take good care that our manufacturers did not get into the factory. He asked that the club should exercise its influence in the direction of keeping out the foreign-made carriage, and give every assistance to any honest British organisation desirous of doing its utmost to produce the best automobile carriage. If any gentleman could get into the works of Continental makers and get the drawings, let him bring them to English manufacturers, and it would not take long for them to produce a better vehicle at half the money. They would present to any purchaser a carriage ten times better than a French one at less money, but if they had to experiment for two or three years they would have to spend their shareholders' money in that work. If Britons were Britons they would assist. (Cheers.)

Mr. Shrapnell Smith said he would confine himself to principles and not go into details. He congratulated Mr. Montagu on making such a fearless statement against something which had been of detriment to British automobile manufacturers and to the progress of the movement. It was an attack against a pernicious principle which was not limited to the automobile industry, viz., over-capitalisation. Mr. Montagu never attempted to say anything against company promotion. There was company promotion and company promotion, and the man who promoted a company on the lines of the companies named deserved all the opprobrium he got. It was all very well to attempt to whitewash Mr. Lawson, but he (the speaker) did not hesitate to say, as an impartial observer, that what he had done had had an adverse influence, and had militated to an enormous extent against the efforts which had been put forward by the Automobile Club and the Self Propelled Traffic Association which was organised before it. One single accident vitiated the care and the trouble exercised by one hundred persons. The people got hold of that fact, and it cropped up against them everywhere. In regard to the Motor Trades Association, he felt that those who were associated with Mr. Lawson had conducted that association according to the best of their lights, but Mr. Lawson had made those gentlemen subservient to his own ends. He had gone to America posing as the head of the organised British Motor Trades Association in a way which none of those present knew. Anyone who was associated with Mr. Lawson ran the very great risk of causing opinions to be formed that must react against the good and healthy progress of automobilism. He believed that foreign competition was a very good thing. They had taken steps at Liverpool to encourage competition, and had offered to pay the freight of any French vehicle. They were exceedingly sorry that no foreign competition had come. He read the motor press specifically, and as a prospective user of heavy motor-vehicles, absolutely unconnected with the motor-companies, he asserted that Mr. Montagu had used his efforts to encourage English-built vehicles. He took a Coventry-built machine to France and raced it in a French race. When Mr. Montagu referred to the progress in vehicles for heavy traffic he (Mr. Smith) was at one with him. His friends in Liverpool who were interested in the question of haulage between Liverpool and Manchester had decided to inaugurate within the next twelve months self-propelled haulage over the Lancashire roads to the extent of many thousands of tons. That was testimony to

the progress made with regard to heavy traffic. The fact that England had devoted attention to heavy traffic was a good sign. They would recollect that the number of vehicles in the French heavy traffic competitions had not increased, whereas at Liverpool they started with four vehicles, then they had six, and next time he believed they would have twelve. It was his belief that the heavy traffic movement was not flourishing so well across the water. It might be possible that, after all, the three-ton limit might be a benefit, and in favour of English constructors. The discussion should not go on personal grounds, but upon the principle of indiscreet and excessive capitalisation which was foredoomed to failure before the schemes were brought before the public. (Cheers.)

Mr. S. F. Edge believed that Mr. Scott Montagu had made a very unfortunate statement in saying that orders should be withheld because manufacturers joined the Motor Trades Association, which was the only automobile trade association in the country managed by an independent committee. He could not see why that should make any difference to business—simply because men belonged to a motor trades association, and he did not think that Mr. Montagu had seriously thought over it. He could not understand why they heard so much about Mr. Lawson. The first time he attended a dinner of the club he heard much about him, and the very people who were talking about him were members of the Motor-Car Club. Some £2,000 had been spent at the Imperial Institute, and so far as present members of the Automobile Club were concerned, the money must have been well spent. He could not see why, because they belonged to the Motor-Car Club, they spent money badly, and yet in the Automobile Club spent money honestly. Perhaps some of them would tell the members all about it. Mr. Gretton had mentioned the Panhard and Levassor works. His experience had been different. Mr. Napier and himself, at the invitation of the chairman of the company, had spent two days at the works, and had been shown everything. Not only had they seen the works, but they were taken to where the springs and axles were manufactured—an important point, seeing that the axle boxes on the Panhard cars wore a long time. At such a works there were 500 carriages in course of construction, and the proprietors did not object to showing them; it was when there was no business doing that they got jealous. They had nothing to fear, for they knew the cars of next year would have improvements, and so those who copied would always be a year behind. He did not think there was the slightest feeling. In reference to the Ariel tricycle, he was a director of the company, and they manufactured, under licence, the De Dion motor at the Cycle Components Company's works throughout—except the induction coil, which they got from the only people who seemed able to make it. Mr. Gretton had referred to a motor-vehicle in which Mr. Montagu was interested, the De Dion voiturette. But he had been informed that that could not be made in England at the price it was now sold. It looked as if the De Dion Company had gone about it regardless of expense and in a little time he found they could not be produced at the price. People were thirsting for good voiturettes, and none were to be bought in England. Mr. Montagu had made a mistake about Mr. Lawson which was rather detrimental to the original directors of the Daimler Company, that they had paid some £40,000 for some patents. Even supposing that sum was paid only for the carburettor, as it was the only successful one, it was bought rather cheaply, especially when it was said that Messrs. Panhard had made £120,000 net profit. It was probably a good bargain although they may not have been aware of it.

Mr. Montagu explained that the payment did not secure the sole right; it was only one among others.

Mr. Edge referred to Mr. Montagu's request for information about English made wheels and tires. So far as his own racing-car was concerned he was getting the wheels made in England, on the splitting principle. The tires, too, could be got over here in large sizes. He wished the personal question had been left outside. They had had a paper, the title of which was most interesting, and ought to have led to a very good discussion. But it had been rather a wasted evening instead of leading to some benefit in the discussion of such problems as why

it was that all the carriages of the Panhard and Daimler type had the mainshaft a bit shaken, resulting in the gears making a noise. He believed past experience had been, in a sense, beneficial, for the very good reason that it had prevented the introduction of the money of people who knew nothing about the business. For the next five years at least the people who put money into the automobile business would work their own money. The first step those who went into the industry would have to take would have to be to learn to use the automobile. (Cheers.)

Mr. Carl Oppermann thought English manufacturers ought to be able to make cars without suggestions. All they should want was that people should use their cars when made. If they would do that they would be able to make them. He had been in foreign workshops, and the Count De Dion had personally shown him everything in his works and answered every question which he, as an expert, put to him. Company promoters who used and wasted money deserved all the criticism they got, and English shareholders and the investing public had been hit very hard indeed. Some years ago they could not get anybody to put money into the electrical industries of this country, but now they were responsible for more capital than any others. Once show the British public that they could make cars which would run well and save money and the future of the trade was assured. For then the Englishmen would go in for it. Application and perseverance would have to be continued.

The Hon. J. Scott Montagu then replied. He disclaimed all intent of personal attacks. No man went into disagreeable questions but for conscientious reasons. He recognised what Mr. Gretton had done for the Motor Manufacturing Company, but he did not agree that he (the speaker) had done nothing to help British automobilism. He was the first Englishman to take a car to a French race, and had very recently been to Paris, and from contact with automobilists in France might be able to suggest some improvements. He would be delighted to give ideas, and place them at the disposal of Mr. Gretton's or any other company. He was glad to hear Mr. Edge's remark about tires, and would have English tires on his car to try what English makers could do. What he said regarding the Motor Trades Association had been his own personal view.

Mr. Gretton explained that his company, the Motor Manufacturing Company, had not joined that association.

Mr. Montagu said the carburettor which the Daimler Company had employed was probably the most practical form, but there were other carburettors which had worked well, and he thought it was rather a weak bargain. The difficulty at present was to get cars delivered. The Daimler Company could not deliver in less than eight or nine months, and the Motor Manufacturing Company was full of work. As regards the Napier Company it was also doing good work, and it was helpful when men of such experience as Mr. Edge became associated with such firms. It would be a wise thing if motor companies were to elect practical automobilists on their boards of directors, and if gentlemen in the club would offer their assistance they could render immense service. With regard to the De Dion Bouton syndicate it was not a manufacturing syndicate, and its capital did not run into five figures. Manufacturers in this country had sat still and gone to sleep too long, and they ought to see what the foreigner did, and how he did it. Competition should be a great incentive to English engineers. It was a very valuable thing to have the competition of the Continent, and he was confident England would, in the end, come out on top. (Cheers.)

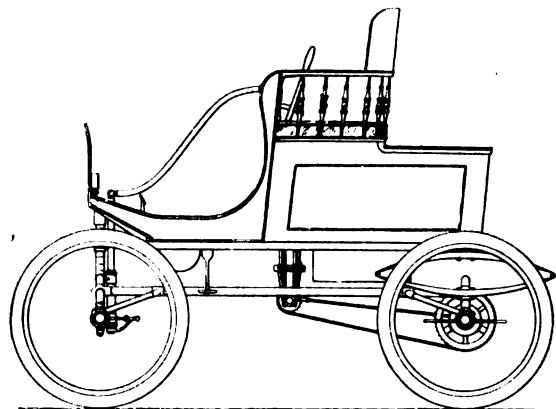
As several gentlemen had intimated their intention of speaking, for whose remarks there was not time, it was decided to hold a further discussion on the paper on Wednesday, the 28th inst.

A cordial vote of thanks to the Hon. J. Scott Montagu having been adopted, on the motion of the Hon. Cecil Duncombe, seconded by the Hon. C. S. Rolls, a similar compliment to the chairman concluded the proceedings.

At a recent meeting of the Automobile Club of America it was definitely decided to hold an automobile exhibition next October under the Club's auspices, probably at Madison Square Garden, New York.

## THE "MILWAUKEE" STEAM CARRIAGE

**A**UTOMOBILES with steam as the motive power are now being built in Milwaukee, Wis., by the Milwaukee Automobile Company. The first car produced is a light, well-built Stanhope, illustrated herewith. The frame is of steel tubing, the "body" and all machinery being carried on springs. The boiler is of the steel shell type, with 360  $\frac{1}{2}$ -inch copper tubes, giving 50 square feet of actual heating surface. It is 18 inches high and 16 inches in diameter, outside measurements, and is tested to 500lbs. hydraulic pressure. The boiler is fired by an automatic petrol burner, which shuts off at a steam pressure of 165lbs. per square inch; 150lbs. is estimated to be the best working pressure. The engines are of the vertical marine type, rated at 5 h.p., and the cylinders measure 2 $\frac{1}{2}$  inches diameter by 3 $\frac{1}{2}$  inches stroke. A strong chain transmits the power from the engine to the differential gear on the rear axle. Twenty-eight inch wire-spoked wheels are used, fitted with 2 $\frac{1}{2}$  inch pneumatic tires. The carriage can, it is claimed, attain any speed up to twenty



miles per hour, and carries sufficient fuel and water for a forty mile run—one gallon of petrol will take it ten miles. The car fully loaded for service weighs 700lbs. The operator sits on the right side, steering the vehicle with his left hand, and controlling the steam valve and brake with his right hand and foot respectively. The reversing lever and pump valve are within easy reach, while the water glass and steam gauge are conveniently located for occasional inspection.

A MOTOR-CAR was put up for sale by auction in Glasgow yesterday as part of the estate of Mr. J. G. Peat (in bankruptcy), of Brandon Street, Hamilton.

THE Steam Motor Syndicate, Limited, has been registered with a capital of £2,000, to adopt an agreement with the Motor Omnibus Syndicate, Limited, and E. J. H. Cecil, and to carry on the business of motor and other vehicle manufacturers, electricians, engineers, etc. Registered without articles of association.

THE Motor-Vehicle Co., of 14, Regent Street, London, S.W., ask us to point out that they are the agents in this country for the Gladiator voiturette, illustrated in our last issue. They state that they have had one of these cars tested for some hundreds of miles under very heavy conditions, and that the results have been very pleasing.

MR. ALFRED L. JONES, J.P., has accepted the office of chairman of council of the Liverpool Self-Propelled Traffic Association. A meeting of the manufacturers of motor-vehicles for heavy traffic is to be called about the end of March or early in April, in order to discuss the conditions for the 1901 trials, and to permit of twelve months clear notice being given.

At the last meeting of the standing committee of the Automobile Club a letter was read from Mr. Bryan Donkin, the well-known engineer, making suggestions concerning the trials of the brake-horse-power of motor vehicles, and the brake-horse-power on the road wheels of motor vehicles, which are to be organised by the club. It was decided that Mr. Donkin should be informed that this matter could not be proceeded with until after the 1,000-mile trial.

## MOTOR-CARS ON THE CONTINENT.



(From Our Own Correspondent.)

### A New Club at Nantes.

It is reported from Nantes that the leading local cycle club has recently addressed a circular to all owners of motor-vehicles resident in the neighbourhood requesting them to join the society, and form a special automobile section. As there are a number of automobilists living in the district this appeal of *Le Vélo Touriste Nantais*, as the club is called, should receive a hearty response, and before many months have passed Nantes, in common with numbers of other French towns, will possess its automobile club. When organised on thoroughly sound lines these clubs do good work in building up the industry, for their tours and meets are the means of directing the attention of many people to the possibilities of the self-propelled vehicle who otherwise would pay no heed to the matter.

### The Winton Challenge.

ARE we going to have after all a Charron-Winton race? That M. Charron is as anxious as ever to meet the American challenger is shown by the letter which he recently addressed to the editor of the *New York Herald*, and of which the following is a translation:—"I just learn that Mr. Winton, the American engineer, who threw out his famous challenge only to immediately back out of it as soon as I took it up, is coming to France with a carriage especially constructed for French roads. I should be very pleased to know if Mr. Winton is always in the same mind towards me, or whether he will lose such a propitious opportunity of proving that he was serious when he issued his startling *défi*." Such a race would attract an enormous amount of interest, and unquestionably Mr. Winton would have all his work cut out to be returned the winner. His own description of the machine which he is bringing to France is delightfully vague. "A single machine, devoid of every unnecessary feature; it is low, long, and rather heavy, but not bulky" is a description which does not throw much light on the type of car to be employed. But a little patience and we shall see the challenger from the other side.

### The Paris Exhibition.

FROM a recent statement made in the *Figaro* it would appear as though applicants for space in class No. 30 of the Paris Exhibition will be disappointed in the matter of allotments. The available space at the Champs de Mars for this section is 400 mètres, and not less than 25,000 mètres have been applied for. The applicants are more than 300 in number, and comprise coachbuilders, constructors of motors, motor vehicles and motor-cycles, wheelwrights, and cycle manufacturers. Probably all these firms are also booking space in the Vincennes section of the Exhibition, where also all the available room will be required. There the principal building will be close to the lake Daumesnil, and will be sufficiently large to contain 300 cars.

### The Coupe Provinciale.

M. MEYAN presided at a recent meeting of the presidents of the automobile clubs of the South-East of France, which took place at Avignon, and at which the clubs of Béziers, Lyons, Avignon, Marseilles, Grenoble, and Nice were represented. The object of the meeting was to make arrangements for the race for the "Coupe Provinciale," and after some discussion the following route of 189 kilomètres (112½ miles) was selected:—Salon, Aix, Lambese, Orgon, Avignon, Tarascon, Arles, and Salon. Upon the conclusion of this business the meeting resolved to found a "Fédération des Chauffeurs du Sud-Est," and elected the following gentlemen to serve as officers of the new society:—President: M. de Farconnet, president of the Automobile Club of Marseilles. Vice-presidents: M. Collin, president of the Auto-

mobile Club of Lyons; M. Gondoin, president of the Automobile Club of Nice. Treasurer: M. Pernod, president of the Automobile Club of Avignon. Secretary: M. Bertin, president of the Automobile Club of Salon. It was also decided to hold a race of 100 kilomètres over the Salon-Arles road on the same day as the course for the "Coupe Provinciale," this race to be open to all Paris automobilists.

### The A.C.F.'s Touring Committee.

THE Automobile Club of France has possessed for a very long time a number of committees specially appointed to deal with a variety of subjects, but strangely enough there did not exist until last week any "commission," whose duty it was to watch over and promote the interests of that most interesting branch of automobilism, viz., touring. But now a Touring Committee has been constituted, and under its guidance great developments in this direction may be looked for during the coming summer. And there is plenty of room for development, as in consequence of the all-absorbing attention given to racing by French automobilists, the fascinations of touring have been rather overlooked. The participation in one or two well organised tours such as those promoted by the Automobile Club of Great Britain would, I am sure, open the eyes of many members of the "A.C.F." to the pleasures to be derived from an excursion of this description. Given fine weather, pleasant companions, and last but not least, a good car, no more enjoyable way of spending a week or so can be imagined. The members of the new committee are:—Comte de la Vaulx, MM. Bourreau, Caldas, G. Huillier, Eugène Maas, Georges Prévost, Pierre Laffitte, Balaceano, E. Giraud, Alfred Riguelle, Sarazin, Gaétan de Méaulne, Emile Mors, Doctors Cadie and Deutsch. The results of their deliberations will be awaited with impatience by numbers of club members.

### The Turin Meet.

I HAVE already made mention in these columns of the great automobile meet which will be held at Turin during the month of April next, and I am now able to send you the programme as prepared by the Automobile Club of Turin, under whose patronage the fêtes are being organised. The opening day of the meet will be April 21st, and for which the arrangements are:—8 a.m., hill-climbing competition. For this contest the start will be effected from Madonna del Pilone, and a route of about four and a-half miles out to Pino Torinese will be followed. At this point the competitors will commence the homeward journey by way of Chieri, Cambiano, and Moncalieri. 2 p.m., formal opening of exhibition of automobiles, photographic apparatus, and photographs. During the following day, April 22nd, the exhibition will be open, and at 2 o'clock in the afternoon, a series of conferences will be commenced. At 5 o'clock attention will be directed to the racing track, where several *chauffeurs* will endeavour to set up fresh records for various distances. There will also be held an automobile tourney and a driving competition. The third and last day of the meeting will witness, at 8 a.m., the start for the great automobile race of 125 miles over a circular route *via* Pignerol, Saluzzo, Busca, Cuneo, and Racconigi. At 2 p.m., exhibition and various attractions. At 4 p.m., distribution of prizes and formal closing of the meet. With such an attractive programme little doubt can be felt as to the success of the meet, and it is generally anticipated that a very large gathering of automobilists, both Italian and foreign, will be witnessed.

### Paris-Brest Race.

It is now announced that it has been decided to convert the race, which *Le Matin* proposed to organise under the name of the "Course de Trèfle," during the first week in July, into a course from Paris to Brest and back, a total distance of 1,200 kilomètres, or 750 miles. Starting from Versailles on Thursday, July 5th, at 3 a.m., the competitors will spend the following day at Brest, and will set out on the return journey

early on the Saturday morning. The itinerary will be from Versailles by way of Dampierre, Rambouillet, Saint-Léger-les-Yvelines, Houdan, Dreux, Verneuil, Alençon, Laval, Rennes, Saint-Brieuc to Brest, returning by the same route. During the stay at Brest competitors will not be permitted to touch their cars, even for the purpose of refilling tanks, etc., thus making the race practically a one stage *course*. The entries to date for this event are MM. Girardot, René de Knyff, A. Lemaitre, E. Giraud, Hourgières, Degrais, Levegh, Klotz, Gui des Aunaies, Piet de Latandrie, Comte Boson de Périgord, Charron, Baron de Turckheim, and Jenatzy. Intending competitors should send in their names, together with a fee of £8, to the office of *Le Matin*, 6, Boulevard Poissonnière, Paris, on or before June 15th. From a spectator's point of view the "Trefoil" arrangement would have been infinitely more attractive; but automobile races must of necessity be largely organised to suit the competitors' convenience, and not merely to meet the public taste, and on that account the change has been effected, as the reduction of time from five to three days is better suited to racing *chauffeurs*, who this year will be full of engagements.

#### French Motor Imports and Exports.

THE French Commission des Douanes has issued a return giving the value of imports and exports of motor-cars and cycles during the past year, from which I take the following figures:—

##### MOTOR-CARS.

|           | Importation. | Exportation. |
|-----------|--------------|--------------|
| 1897..... | 199,850fr.   | 623,690fr.   |
| 1898..... | 395,070      | 1,749,350    |
| 1899..... | 458,000      | 4,260,000    |

##### CYCLES AND MOTOR-CYCLES.

|           | Importation. | Exportation.  |
|-----------|--------------|---------------|
| 1897..... | 8,400,140fr. | 10,076,980fr. |
| 1898..... | 8,925,320    | 10,654,000    |
| 1899..... | 8,822,000    | 11,280,000    |

In the first table the most striking fact is the enormous growth in the exports of motor-cars, from about £69,974 in 1898 to no less than £170,400 last year. The imports of "cycles and motor-cycles" relate, it is to be presumed, mostly to cycles. The exports are, on the other hand, made up almost entirely of motor-cycles. Commencing with the present year the imports and exports of motor-cycles and ordinary cycles are to be given a separate heading.

#### The International Automobile Congress.

THERE is every reason to believe that the International Automobile Congress, which will be held in Paris during the second week of July, under the auspices of the French Ministry of Commerce, will throw a considerable amount of light

upon the whole question of automobilism, and already the programme of the congress gives ample proof of the thoroughness with which the organising committee are doing their work. The programme is divided into four main headings:—(1) Historical questions—automobile locomotion in different countries; (2) technical questions; (3) economic questions; (4) international questions. These headings are again sub-divided into a very great number of classifications dealing with every conceivable subject pertaining to automobilism, and it is the intention of the organising committee to select no less than one hundred recognised authorities on the principal subjects mentioned for the purpose of obtaining a specially prepared report on each of those subjects. These reports will be printed and issued to the participants in the congress previous to the first meeting. At the present moment the following selections have been made by the committee, and the remainder will follow in due course:—M. Gaston de Chasseloup-Laubat (history of automobile locomotion in the different countries), M. René Varennes (steam motors), M. G. Forestier (explosion motors), M. Hospitalier (electric motors), M. Barbet (divers motors), M. Gaillardet (transmissions)

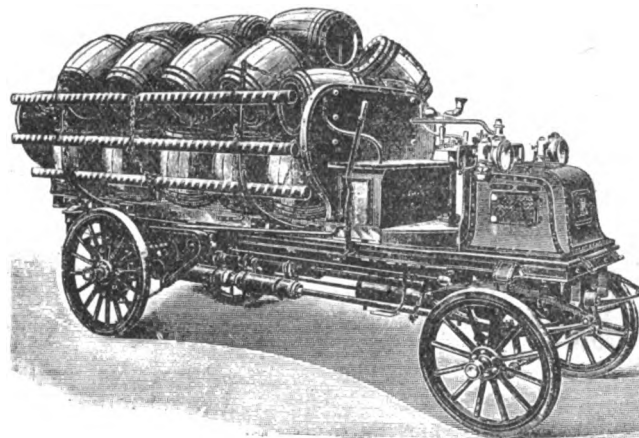
M. Jeantaud (frames and their parts), MM. Ferrus and Michelin (wheels, axles, tires), M. Bochet (brakes), M. Carlo Bourlet (steering), M. Bollée, sen. (steering and driving wheels, details of construction), M. Jeantaud (carriage work), M. Forestier (traction effort), M. Hirsch (power to give to automobile vehicles), M. de Périssé (economic questions), Mr. Pierre Giffard (account of the work of the Automobile Club of France; divers competitions, races), M. A. Baillif (unification of customs' formalities), M. Sauvage (unification of gauges, nuts, bolts, etc.). These reports will be valuable additions to every automobile library, for they are being written by men thoroughly conversant with the subject in hand. It is to be hoped that they will be procurable, not only by the actual participants in the congress, but by all who take interest in the movement, for the more an automobilist, even when not engaged in the industry, knows about cars in general and his own in particular the better for him.

#### A Brewer's Motor-Wagon.

THE illustration given below shows a motor-wagon lately supplied by the Motorfahrzeug und Motorenfabrik, Berlin, Gesellschaft, of Marienfelde, near Berlin, for a German firm of brewers. The car, as will be seen, is of the standard Daimler type, the builders holding a licence in respect of these vehicles from the Daimler Motoren Gesellschaft.

#### Attempts on Records.

"IL Y A UN DIEU POUR LES CHAUFFEURS" is a well-known saying in France, and its truth received startling testimony last week, when Béconnais escaped practically uninjured from a terrible cropper sustained during one of his record-breaking attempts at the Parc des Princes. It had



been Béconnais' intention to set up fresh figures for the hundred kilomètres, and previous to actually starting on his task he indulged in a few trial laps for the purpose of putting his machine "au point." It was during this preliminary canter, and while travelling at nearly eighty kilomètres, or fifty miles per hour, that his cycle slipped and he was thrown heavily to the ground, the machine performing a species of exaggerated somersaults on its own account. To the astonishment of the spectators, who thought him killed or at least badly injured, Béconnais rose unaided to his feet, and beyond a few bruises showed no trace of his terrible fall. But with the machine it was otherwise. The back wheels were all that still remained intact, saddle, carburettor, handle bars, etc., having been smashed almost out of recognition. Undeterred by this unpleasant adventure, Béconnais made another attempt on the 8th inst., and in spite of the wind and the piercing cold succeeded in covering 69 kilomètres 369 mètres within the sixty minutes, beating his own previous best by 1 kilometre 468 mètres. Continuing, the *chauffeur* maintained his speed until the eighty-ninth kilometre, when a punctured tyre caused him a loss of 2½ min. in dismounting it.

From that point to the finish he rode minus a tire, and yet under these conditions he averaged more than fifty kilometres per hour for the last eleven kilometres. Reconnaissance time for the hundred kilometres was 1 h. 30 min. 55.25 sec., against the previous record of 1 h. 34 min. 26 sec., a veritable advance.

### Belgian Notes.

FROM all accounts this year's automobile and cycle exhibition at Liège will be exceptionally interesting, especially from an automobile point of view. Opening on March 10th, it will close on March 20th, and practically all the most important firms engaged in the industry in Belgium, as well as many leading foreign houses, will be exhibiting their productions. The cost of space is the same as last year, viz., five francs per square metre, and the secretary of the exhibition, M. A. Stembert, 149, Rue Saint-Gilles, Liège, will receive applications up to Monday next. No country has made greater progress in automobilism during the last twelve months than Belgium, and it may be safely asserted that the forthcoming show in the Salle Royale de la Renommée will be an immense advance upon anything yet seen in the country. Apart from the bustle and preparations for the exhibition, manufacturers, in common with all Belgian *chauffeurs*, are regarding with an anxious eye the attitude of the various local authorities in framing the bye-laws for the regulation of automobile traffic in their respective neighbourhoods. At Hasselt the decrees of the council have already been issued, and among other conditions they stipulate that the motor-vehicle shall not travel at a greater speed than 9½ miles per hour, and shall not be driven by any person who is not at least eighteen years of age. Thanks to the energy of the Comte Van den Straeten Ponthoz, the president of the Belgian Automobile Club, the Brussels authorities have consented to postpone the discussion on the proposed regulations for that town until the automobilists have been able to prepare a list of their requirements. Mention of the club reminds me that the grand fête of the "A. C. B." will be held on Sunday, April 22nd, in the hall of the Parc du Cinquantenaire, at Brussels, when a great gathering of automobilists from all countries is expected.

THE Rheinischen Nadelfabriken Gesellschaft of Aix-la-Chapelle is increasing its capital with the view of taking up the construction of motor-vehicles.

THE *Horseless Age* of New York has just got out what it terms its "Explosive Motor Number"—a special number devoted to a consideration of the petrol motor from almost every point of view. It should be of assistance to all engaged on the construction of such engines.

SOMEHOW or other the motor-tricycle does not appear to be catching on in America. Not a solitary example was to be seen at the recent cycle show in New York, although one firm exhibited a motor-quadricycle.

FROM the Librairie Polytechnique (Ch. Beranger), Paris, we have received a copy of a new work by M. George Moreau, entitled *Les Moteurs à Explosion: Etude à l'Usage des Constructeurs et Conducteurs d'Automobiles*. The work is a highly technical one, and as its title indicates is intended for the use of builders of petroleum-spirit motor-vehicles and those owners of the same who wish to study the principles of the impulse motor from the theoretical standpoint. The book is divided into eight chapters—(1) General Considerations; (2) Theoretical Study of Motors; (3) Imperfection in the Cycles; (4) The Transmission of the Power; (5) Passive Resistances; (6) The Organs of the Motor; (7) Different Types of Impulse Motors; and (8) Tests of Motors and Automobiles. Each chapter is divided into a number of sub-heads, with the result that there is hardly any point in connection with explosion motors that is not dealt with. The testing of motors and of motor-vehicles is treated in the final chapter, and while the latter will probably be of most interest to automobilists, the whole work is well worthy of close study by those who are engaged in the construction of impulse motors and automobiles propelled by means of such engines.

## CORRESPONDENCE.



### A MOTOR-CAR ON FIRE.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—I am greatly surprised, and wonder how you get to find out things such as my recent case with Mr. Short at the Bow County Court. I have also seen other articles in your paper which I know have been kept as a secret, but how you find out things, even in the quietest country places, I don't know.

The identical car I purchased from Mr. Short has been completely destroyed by fire. I was out with it (a Benz victoria) about a month ago, and fourteen miles from home when going up a steep hill the motor began to make a strange noise; I stopped the engine and got down to enquire into the cause. On opening the back out rushed a volume of flame, causing me to beat a hasty retreat, and in less than a quarter of an hour the car was a heap of iron. This happened about three miles from anywhere, so you may tell what a plight I was in. It was only after great difficulty that I got a trap to drive me home. I was rather frightened at the time, but for all I like motoring, and do not mean to give it up. I may mention that I never wished for a stronger and better car for travelling than the above; it never gave the least bit of trouble after I thoroughly overhauled and put it right.

Chelmsford,

February 13th, 1900.

[It would be interesting to know the cause of the destruction by fire of the car—if Mr. Taylor was able to ascertain it.—*Ed. M.-C.J.*]

Yours truly,

G. TAYLOR.

### A NEW VARIABLE-SPEED GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I ask your readers' opinion of the following? Is a gear that will give sixteen speeds forward and the same backward an advantage to motor-cars? I notice that two, three, and four speeds and one reverse seem to be the usual arrangement at present adopted. The new gear I refer to can be operated with one handle—forward, reverse, and stop at any time. The usual clutch would be an extra part. The construction is most simple, and the range of speed available may be 16, 25, 36, 49, and so on, all controlled by the lever.

Yours truly,

44, Wellington-road, Stoke Newington, J. BROWNLOW.

February 12th, 1900.

### THE BREISGAUER AUTOMOBILE CLUB.

TO THE EDITOR OF *The Motor-Car Journal*.

DEAR SIR,—I notice in your paper that you mention the new automobile clubs which come into existence. A club was formed in Baden, Germany, in October, 1899, under the name of "Breisgauer Automobile Club," with myself as president, and Freiburg-Baden, in the Black Forest, as its centre. I shall be delighted to be of service to anyone travelling in that part of the country.

Yours truly,

WILFRED BANNER.

109, King's Road, Brighton.

February 13th, 1900.

MR. HENRY EDMUNDS, a member of the Automobile Club, has been carrying out a series of tests to ascertain the best mixture of glycerine and water for use in the water system of motor-cars during frosty weather. He finds that water with 30 per cent. of glycerine is the best mixture. His experiments showed that with 18 degrees of frost this mixture did not freeze at all.

AT the meeting of the Races Committee of the Automobile Club last week it was decided that the first meet for motor-cycle races should be held shortly after the 1,000-mile trial; and the club is to correspond with the Automobile Club de France with reference to arrangements for a race of British motor-vehicles in France. It is not proposed to make any arrangements for this race which are not approved by the Automobile Club de France.



## THE CARRIAGE OF MOTOR-CAR SPIRIT ON RAILWAYS.

THE Committee of the Automobile Club have arranged to hold a conference with the representatives of the Anglo-American Oil Co. and Messrs. Carless, Capel, and Leonard with reference to the decision of the railway companies as to the risk in the transport of motor-car spirit by rail. At the next meeting of the Committee of the Motor Trades Association, on the 19th inst., the position of affairs brought about by the insertion of the obnoxious Clause 2 in the new consignment note for motor-car spirit and other inflammable liquids just now being enforced by the railway companies will also be considered. Any of our readers who have any suggestions to make as to how to meet this difficulty, or have had any experience of loss of trade through this clause, are invited to communicate with the Automobile Club or the Association.

In connection with the matter the Anglo-American Oil Company, Limited, advise us that they have sent a protest to the Secretary of the Railway Clearing House, a copy of which is reproduced below. They consider, however, that there is more likelihood of their protest being heeded if it be supported by similar protests from all users of petroleum spirit. They ask, therefore, the co-operation of all users in the endeavour to induce the Railway Companies to revert to their old form of Consignment Note, and suggest that a letter of protest should be sent to the local goods agent of the railway company over whose line the motor-car spirit has hitherto been delivered.

Copy of Letter from the Anglo-American Oil Company, Limited, to the Secretary of the Railway Clearing House.

"Having reference to the Railway Companies' amended Consignment Note for Petroleum Spirit (*i.e.*, Benzine, Benzoline, Carburine, Gasoline, Motor-Car Spirit, Naphtha, Petrol, etc.), and which, we are informed, came into force on the 1st. instant we desire respectfully to protest against (a) the wording of the Regulations in the General Classification of Goods by Merchandise Trains for 1900, as to the packing of Petroleum Spirit, wherein it is provided that the same be packed 'in casks, iron drums, or iron cans, strongly made and securely closed, so as to prevent all possibility of leakage'; (b) that part of the Consignment Note which requires the sender to 'indemnify the Company against all claims for injury to person or property arising directly or indirectly from the inflammable qualities of the said goods from non-compliance with the before-mentioned regulations as to packing such goods, and to pay full compensation for all injury to the Company's servants and damage to their property so arising, unless it can be proved that the injury or damage is due to the wilful neglect of the Company's servants.'

"In regard to our first objection, we desire to say that we have always been willing, and we shall be prepared, to pack petroleum spirit in any practicable manner that may be required by the railway companies; but it is an obvious impossibility for us or for anyone else to guarantee that such a package could not or would not leak under any circumstances. It is unreasonable therefore for the railway companies to require such a guarantee from the sender. In our own interest it would be our endeavour to make the packages as tight and as secure as practicable, but we would not be willing to guarantee any kind of package against all possibility of leakage.

"With reference to our second objection, this is not owing to a belief

on our part that petroleum spirit is an article of an extra hazardous nature, but is due to our unwillingness to accept responsibility of any kind in connection with goods after these have once passed out of our control.

"Inasmuch as the railway companies have been carrying petroleum spirit for upwards of twenty-five years, and, so far as our memory can recall, without their having sustained in consequence any loss or damage that would warrant their imposing the conditions against which we now protest, we have been unable to understand the considerations which have led the railway companies to take up their present attitude against this article. We believe, however, that their action has been due to a misconception of the real nature and character of the article. We, therefore, respectfully ask that the whole question be reconsidered by the railway companies, and that the wording in the railway classification as regards the packing of the spirit be amended by the substitution of the word 'likelihood' for the words 'all possibility'; and that Clause 2 of the Consignment Note, requiring the sender to indemnify the railway company in case of loss, be omitted.

"In conclusion, we would respectfully point out that the insistence of the railway companies upon the present wording of the classification of petroleum spirit and of their consignment note, must inevitably paralyse, if not wholly destroy, an important and growing business in an article upon which many branches of industry are, in a large measure, dependent. Important, however, as the trade in petroleum spirit is, we will abandon

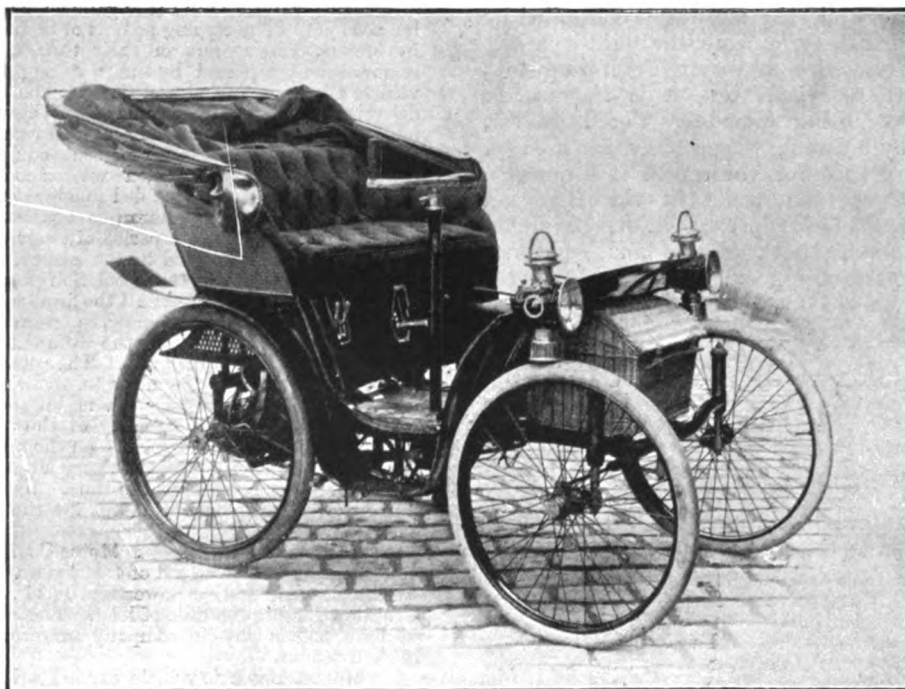
it altogether rather than submit to conditions which are unreasonable and unjust. As an evidence of our earnestness in this matter, we may be permitted to state that we have notified our numerous customers throughout the country that we will not forward any more petroleum spirit by railway under the existing regulations and conditions required by the railway companies.

"We feel confident, too, that our example will be followed by other importers of and dealers in petroleum spirit directly they realise that, by this consignment note, the responsibility and liability which properly should be assumed by the railway companies during the time that the goods are under their control are transferred to the sender."

UNITED MOTOR INDUSTRIES (Paris), 64 and 65, Holborn Viaduct, London,

E.C., inform us that they are now in a position to supply a very heavily insulated wire for use in connection with the electric ignition of motor-tricycles and light cars. The insulation of this wire will, it is claimed, stand any amount of wear and bending. In addition to the ordinary "Reclus" sparking plug this company is also supplying a special "Reclus" plug designed for racing purposes. The feature is the introduction of a small metal ring round the extremity, this being intended to retain the heat, in order that a motor running at a speed of 1,800 or 2,000 revolutions per minute should not miss firing.

THE Riker Motor-Vehicle Company, of Elizabethport, N.J., U.S.A., has lately built an electrical delivery wagon for Mr. Carl H. Schultz, a mineral and carbonated water manufacturer of New York City. Two 4-h.p. electric motors are used, affording sufficient power to carry a load of 2,500lbs. up any grade in that city. It is capable of making eight miles an hour. The frame is of steel, and the wheels of wood with three-inch solid rubber tires. The forward wheels are thirty-eight inches in diameter, and the rear wheels forty-four inches. The total weight, including batteries, is 6,000lbs. A single charge of the battery gives a radius of twenty-five miles.



THE "MIGNONNETTE-LUAP" VOITURETTE. (For description see page 796.)

## THE "MIGNONNETTE - LUAP" VOITURETTE.



FROM all parts of France particulars are reaching us of new light motor-voiturettes, which are becoming so popular on the other side of the Channel. The illustration given on the preceding page depicts the "Mignonnette-Luap" car, which has lately been put on the market by M. Jiel-Laval, of 12, Allées de Tourny, Bordeaux. The motive power is supplied by a 2½ h.p. De Dion motor, geared to the rear axle through the medium of a two-speed gear, by means of which it is claimed any ordinary hill may easily be mounted. The motor is arranged to be started by a detachable handle, while a novel feature is the provision underneath the footboard—which can be readily removed—of a pair of pedals connected by chain gearing to the rear axle. This is not intended to be used except in case of emergency, such as a breakdown or in running short of motor-car spirit, etc. In an instance of this kind the footboard can be removed and the car pedalled to the nearest station or motor-car spirit store! The wheels are of the cycle type, fitted with pneumatic tires; while the steering is controlled by a bar. Provision is made for carrying motor-car spirit sufficient for a run of 150 kilometres. Speeds varying from 5 up to a maximum of 30 kilometres per hour can, it is claimed, be attained, ample brake power being provided. The little car, which measures 5ft. 7in. by 3ft. 6in., weighs only 2cwt. 84lbs. In the Bordeaux-Périgueux race for voiturettes it attained a speed of 25·8 kilometres per hour, while in the Bordeaux *concours d'élégance* it carried off the first prize. M. Jiel-Laval has also sent us an illustration showing a car of this kind, when not required for transport purposes, being employed in actuating a small water-lifting pump.

## MOTOR-VEHICLES FOR MUNICIPAL PURPOSES.



THE following is a copy of a report on the result of investigations as to the working of motor-vehicles, drawn up by Mr. T. W. E. Higgins, Assoc. M. Inst. C.E., surveyor to the vestry of Chelsea, and just presented to that body:—

"I have to report that, in accordance with the vestry's instructions, I have seen various motor-vans, and in some cases have been able to inspect the works of makers of motor-vans.

"At Messrs. Coulthard's works, at Preston, I was enabled to see the latest type of van being built for a firm of brewers; the vehicle was under steam, and was run over the somewhat roughly paved streets for me to test its capabilities. It was an oil-fired machine, and worked very well, without emitting any visible vapour; the only fault I found with it was a tendency to roar which the oil fuel burner exhibited. But I think this might be overcome.

"At Liverpool I had an interview with Mr. Brodie, the Borough engineer, and also saw at work the motor-van which the Corporation obtained from the Lancashire Steam Motor Company. Mr. Brodie informed me that although the motor-van was originally obtained to cart refuse, he had found it so useful and economical for ordinary cartage that he had never used it for refuse carting. He is very satisfied with its results, and he states that when he publishes the details of the cost they will show that a very great saving in expense has resulted from its use. I subsequently saw the van at work. It was loaded with a very heavy load of brick and other rubbish, which it carried with ease, and backed and tipped the load satisfactorily. The Liverpool Corporation are at present laying some 60 miles of tramway in various parts of the City, and the motor-van is mostly used in connection with this work, carrying heavy loads of tram rails, or other materials, to the engineer's entire satisfaction.

"I have also had an interview with the representative of the Lancashire Steam Motor Co., who explained to me that his firm, who have made some seventeen motor-vehicles, in addition to the one in use at Liverpool, have very recently taken out certain patents for improvements in motor-carriages, and that they are now prepared to construct an improved type of vehicle to be fired with coke, to have more efficient tipping arrangements, and compound instead of triple-expansion engines, and also to be fitted with their latest patents, the machinery being made to run in an oil bath. They are prepared to supply these vehicles at a somewhat less cost than their estimate, as owing to certain improvements the machinery will be simpler in construction. (The price quoted is £1,425 for three vehicles.) This firm state, that having already three vehicles in constant work in London, they would be able to arrange to give any attention to the machinery here if it should be

required at any time. They state that for the last two years they have had a motor-van at work for a firm of brewers at Wellington, Somerset, in a very hilly district, which, though a type of vehicle upon which they have greatly improved, has had practically no repairs, and has been working very satisfactorily.

"Messrs. E. H. Bayley and Co. inform me that the vehicle which they exhibited at Richmond and Liverpool has since been purchased for use in America, but that they are now engaged in building more, which are not yet sufficiently advanced to be inspected.

"I have also inspected Messrs. Thornycroft's new works at Basingstoke, where they are building three vans for cotton manufacturers in Lancashire. All the working parts of these vehicles are being made to standard patterns and will be of the best workmanship. By arrangement with Mr. Thornycroft I was enabled to see a new motor-van which his firm have just built for the Strand District Board of Works. The engines and machinery are of their standard type, but the van has a galvanised steel tipping body. When I saw it tested it manoeuvred in and out of a steep and narrow entrance at the West Brompton Electricity Works with much more ease than a horse vehicle, and generally showed itself to be a very efficient machine, as did the vehicle which the same firm sent to us on trial some months ago.

"Messrs. Thornycroft also submit the following offer, dated January 30th, concerning this latter vehicle, which has been thoroughly overhauled since it worked for us in the early part of last year:—'We shall be happy to give you early delivery of a steam tip waggon of 6 cubic yards capacity of the design as indicated in the accompanying print, with alternative watering tank (700 gallons), as shown in lower view, the whole for £550 net. The tipping body is of high grade galvanised steel, as used by Messrs. Thornycroft in their torpedo boats. This body is readily removed and replaced by the watering tank, thus giving the motor vehicle a more extended usefulness. The tip waggon, complete, could be delivered in one month from date. We will make every endeavour to have the watering tank ready at the same time. In its transmission gear this waggon does not represent our very latest practice, although the arrangement adopted is one we can confidently recommend. It is for this reason that we are enabled to offer it to you at a reduced price. Our offer includes a general guarantee against defects due to faulty workmanship or material for a period of twelve months following delivery.'

"Since I last reported to the vestry, the official report of the trials held in August by the Liverpool Self-propelled Traffic Association has been issued, and I note that all the firms who tendered to the vestry had vehicles at this trial, and it may be interesting to the vestry to know the behaviour of the vehicles by the different makers. Messrs. Coulthard and Co. were very unfortunate. They had an inexperienced driver who was not accustomed to the machine, and who in the manoeuvring trials was unable to control the vehicle. The judges state that this trial cannot be taken as a test of the quality of the vehicle, but of the skill of the drivers. This same vehicle was on the next day unable to proceed with the trial, owing to the unsatisfactory adjustment of the friction clutches, which could not be remedied in time. But though it did not compete, it was awarded a diploma of merit for the excellence of its engines and general design.

"The Lancashire Steam Motor Company's vehicle was an oil-fired machine. It carried a load of 4·44 tons, at a speed of 5·02 miles per hour, and the cost for motive power was 0·62d., and for attendants 0·38d., or a total of 1d. per ton mile of load. The oil fuel is very expensive, and no doubt this is why the company are recommending a coke-fired vehicle in their tender.

"Messrs. Bayley's vehicle carried a load of 3·67 tons at a speed of 4·93 miles per hour, and the cost for motive power was 0·13d. and for attendants 0·65d., or a total of 0·78d. per ton mile of load.

"There were two of Thornycroft's motor-vans; one carried a load of 3·73 tons at a speed of 5·31 miles per hour, and the cost for motive power was 0·27d., and for attendants 0·44d., or a total of 0·71d. per ton mile of load. The other vehicle, which had a trailer, carried a load of 6·65 tons at a speed of 5·67 miles per hour, and the cost for motive power was 0·22d., and for attendants 0·36d., or a total of 0·58d. per ton mile of load.

"These results summarise as follows:—

| Vehicle.                   | COSTS<br>Per ton mile of load. |                    |                  |                  |         |
|----------------------------|--------------------------------|--------------------|------------------|------------------|---------|
|                            | Load<br>carried.               | Miles<br>per hour. | Motive<br>power. | Atten-<br>dants. | Totals. |
|                            | Tons.                          |                    | d.               | d.               | d.      |
| *Coulthards'               | 2·32                           | 4·78               | —                | —                | —       |
| *Lancashire Motor Co. .... | 4·44                           | 5·02               | 0·62             | 0·38             | 1·00    |
| †Bayley's.....             | 3·67                           | 4·93               | 0·13             | 0·65             | 0·78    |
| †Thornycroft's I. ....     | 3·73                           | 5·31               | 0·27             | 0·44             | 0·71    |
| † Do. II. ....             | 6·65                           | 5·67               | 0·22             | 0·36             | 0·58    |

\* Oil fired.

† Coke fired.

"The only other vehicle in the trials was an oil-fired one and its costs were 1·09d. for motive power and 0·52 for attendants, or a total of 1·61d.; which seems to show that oil firing is much more costly than coke.

"As regards the Liverpool trials, I think it should be generally known that the persons who are responsible for them are not manufac-

turers of motor-vehicles, but merchants and shippers who require motor-vehicles for commercial purposes, and consequently it is of some interest to know that in the opinion of the judges, motor-vehicles 'can be regarded as having arrived at such degrees of mechanical excellency and efficiency that their use in practical trade operations will be attended with success and economy as compared with horse traction.' And, also 'The general control, starting, steering, and stopping of the vehicles when working on the road and amongst traffic, was superior to the best types of horse-drawn vehicles.'

"In conclusion, I must remind the vestry that the estimates they had submitted to them were as follows:—

|  | Each Van. | For 3 Vans. |
|--|-----------|-------------|
|  | £         | £           |
| 1. Messrs. Coulthard and Co., of Preston..                               | 475       | 1,425       |
| 2. The Lancashire Steam Motor Company, of Leyland:—                      |           |             |
| For coke-fired Motor.....  | 490       | 1,470       |
| For oil-fired Motor.....   | 510       | 1,530       |
| 3. Messrs. E. H. Bayley and Company, of London, S.E. ....                | 650       | 1,950       |
| 4. The Steam Carriage and Wagon Company, of Chiswick (Thornycroft's) ... | 700       | 2,100       |

"As regards the annual cost of such vehicles, I have summarised the estimates of cost submitted by each firm, taken the depreciation at 15 per cent. and the wages of the driver at £90 per annum. This will afford a comparative statement as far as possible on the makers' own figures.

## ANNUAL COST.

| Makor of van.....   | Coulthard. | Lancashire Motor Co. | Bayley.   | Thornycroft. |
|---------------------|------------|----------------------|-----------|--------------|
| Prime cost .....    | £475       | £490                 | £650      | £700         |
| Depreciation 15%... | £ 71 5 0   | £ 73 10 0            | £ 97 10 0 | £ 105 0 0    |
| Repairs .....       | 75 0 0     | 55 0 0               | 52 0 0    | 52 0 0       |
| Fuel, oil, etc..... | 82 0 0     | 75 8 0               | 36 2 4    | 44 8 0†      |
| Driver .....        | 90 0 0     | 90 0 0               | 116 0 0*  | 90 0 0       |
| Total.....£         | 318 5 0    | 293 18 0             | 301 12 4  | 291 8 0      |

\* This includes a boy to assist the driver.

† The difference between this amount and Messrs. Thornycroft's estimate of £37 is owing to that estimate being for five days' work per week instead of six days as the other estimates are.

"Messrs. Thornycroft have offered to sell a vehicle now in use for them for £550, this price to cover a watering body as well as the ordinary tipping one.

"The vestry, however, should bear in mind that this latter offer is not part of the tenders for which they advertised, and while I am strongly of opinion that the use of such a vehicle adapted for both cartage and watering is greatly to be recommended, I hope that even if closing with such an offer, they will not fail to accept one of the tenders before them.

"It is for the vestry to decide which tender should be accepted. They directed me to see some of the motor-vehicles at work; I have done so, and my investigations have confirmed me in my opinion previously expressed, that sanitary authorities in large towns should do their utmost to encourage the use of mechanically-propelled vehicles, which can now be efficiently manufactured by reliable firms such as those four who have lately submitted estimates to the vestry."

## CHARGE AGAINST A DIRECTOR.

AT the West London Police-court on Tuesday, Mr. Sydney Atkins, who resided in Blomfield Terrace, Harrow Road, W., appeared to answer an adjourned summons, alleging that while a director of the Automobile Association, Limited, he unlawfully applied to his own use certain sums the property of the company. Mr. J. P. Grain appeared for the prosecution and Mr. Osborn for the defendant. The case had been under the consideration of the Court for some time. In the first instance the defendant and another of the three directors named Zacharias applied to Mr. Plowden, who happened to be sitting in the Court for process against Dr. Edward Lehwess, of Clanricarde Gardens, Notting Hill, for the removal of a number of cars, but he declined to grant summonses. However, other proceedings were taken, but were subsequently arranged, and Lehwess, with Zacharias, the two directors, became the prosecutors against the defendant. It appeared from the evidence that the defendant was the active director, but his interest in the company was confined to the holding of 500 shares, which were given to him by the prosecutors. The allegations against the defendant was that he had drawn three cheques for commission on the sale of cars for larger amounts than were paid. Mr. Osborn, at the conclusion of the evidence, said it was a vindictive prosecution for the purpose of ousting the defendant so that Lehwess might obtain possession of the property.

He submitted that there was nothing like the case which was opened by Mr. Grain. The defendant used his own money and drew cheques for sums he required.—Mr. Lane said it was not a case he could withhold from a jury. He should bind the defendant over in his own recognisances in £200 for his appearance at the Central Criminal Court.

## HANBURY AND WIFE v. GRETTON.

IN the Queen's Bench Division this week, before Mr. Justice Grantham and a special jury, Mr. Antony Astley Hanbury, a paper manufacturer, and Mrs. Amy Georgina Hanbury, his wife, sought to recover damages from Mr. John Humphreys Gretton, a barrister and chairman of the Motor Manufacturing Company, for personal injuries sustained by the female plaintiff and damage done to a pony and cart owing to the alleged negligent driving of a motor-car by the defendant. The defendant denied that there was any negligence on his part, and pleaded contributory negligence on the part of the plaintiff, Mrs. Hanbury.

Mrs. Hanbury stated that her husband had a house last summer at Farnham Royal, in Buckinghamshire, and on the afternoon of June 17th she was driving a pony and governess cart along the Bath road in the direction of Slough. Two children and a nurse were in the cart with her. She was proceeding along on the proper side of the road when she saw a motor-car, driven by the defendant, approaching her at a great pace. Mrs. Hanbury immediately told her nurse to signal to the motor-car to stop, and she thereupon stood up and waved both her hands, but the defendant, who appeared to be talking to two ladies seated behind him, took no notice. Mrs. Hanbury then stood up herself and waved her whip, but the car continued to approach, and the pony became frightened and turned round and backed right across the road. The motor-car came on, and struck the pony, knocking it over, and damaged the cart. Mrs. Hanbury was much shaken, and became unconscious, but the nurse and children were not hurt. Neither defendant nor the other occupants of the motor-car made any inquiries as to whether the witness was injured, but they moved off as soon as they could get away. The result of the accident was that witness had completely lost her nerve, and could not drive at all now.

Cross-examined by Mr. Jelf, Mrs. Hanbury said that she had had the pony for four months, and had frequently driven it, but had not passed a motor-car before. The motor-car was on its near side at the time of the collision, but as she fainted she did not know exactly what occurred.

Isabel Cameron, Mrs. Hanbury's nurse, said that, when the car was approaching, at Mrs. Hanbury's request she stood up and waved both her hands to stop the defendant. The defendant was talking to the ladies behind him and took no notice, and the car struck the pony-cart. Witness asked defendant why he did not put on the brake, and he replied, "You were on the wrong side of the road." Witness answered that the pony was on its right side until the motor-car had frightened it, and made it back across the road.

Cross-examined, the witness said that neither of the children was thrown out of the cart; the elder one jumped out, and the younger one was lifted out by a bystander just at the time the accident happened.

Counsel having opened the case for the defendant, Mr. Gretton was called, and he said he had great experience in driving motor-cars. On the occasion in question he was driving a car of the latest design and with all the newest improvements, known as an "Iveagh Phaeton." His engineer, Passmore, was sitting beside him, and two ladies were seated behind him. When he first saw the plaintiffs' pony-cart, it was about 150 yards away. He at once blew his horn, and, though he was going at about eight miles an hour, and the pony was not restive, he threw the wheels out of gear and reduced his speed to four miles. He saw no signal made to him by the occupants of the pony-cart. Just as he came up to the pony-cart the pony suddenly backed right across the road, and, though he turned his motor-car aside quite into the fence, it struck the hub of the wheel of the pony-cart. The pony slipped and fell, but immediately scrambled to its feet again. The defendant said that up to the time that the pony backed across the road the way was quite clear, but he stopped his motor-car almost at the same moment that he struck the cart. The defendant also said that he did not see Mrs. Hanbury at all, and was quite unaware that she had fainted. A number of persons collected together at the place, and he supposed that Miss Cameron, the nurse, who spoke to him very irascibly, was the owner of the cart. He did not get down from his motor-car because under the provisions of the Locomotives on Highways Act a competent person must remain in charge. He was informed that no one had been injured.

In cross-examination, the defendant said that he had started in the morning in a procession of motor-cars from the Automobile Club, in Whitehall, to go to an automobile exhibition at Richmond, and on the way there, owing to a sudden stoppage of the traffic, the car he was driving ran into the tailboard of the one in front. In consequence of this accident he obtained a second car at the exhibition, and when the collision with Mrs. Hanbury's cart occurred was on his way to Henley-on-Thames. He was of opinion that, under the Act of Parliament, the only person who had a right to signal to him to stop was the person in charge of a restive horse. In this case the pony was not restive, and the person in charge did not signal, nor did he see the nurse put out her hand.

Harry Passmore, who was acting as the defendant's engineer on the day in question, was also called in support of the defendant's case.

In cross-examination, this witness said he had of his own accord been to see the plaintiffs' solicitors, and had answered questions put to him, though he denied he had volunteered a statement that the defendant could easily have avoided the accident if he had been careful.

The two ladies who accompanied the defendant on the motor-car gave evidence, and said that Mr. Gretton had not turned round; they did not think he was talking to them at the time of the accident. No signal to stop was made till the two vehicles were close together.

Mr. McCall, in addressing the jury, said that he withdrew the charge of intentional discourtesy against Mr. Gretton. He accepted that gentleman's statement that he did not see Mrs. Hanbury after the accident, and, therefore, though he had been guilty of apparent discourtesy, he did not think it had been intentional.

Mr. Justice Grantham, in summing up, said that, although this was not a case in which large damages were asked, it was a matter of public interest as affecting the duties of drivers of motor-cars. So far as he knew at present, few actions had been brought arising out of motor cars colliding with other vehicles. After dealing with the facts of the case, his Lordship defined the word "restive" as "unwilling to go; obstinate in refusing to move forward; stubborn," and told the jury they must consider whether the pony was restive in that sense; whether a signal to stop had been given to the defendant; and whether he had complied with it.

The jury found a verdict for the plaintiffs for £50, and judgment was given accordingly, his Lordship refusing a stay of execution.—*The Times*.

#### A FATAL MOTOR-CAR ACCIDENT AT BINGLEY.

AN inquest was held on Monday, by Mr. J. E. Hill, deputy coroner, at the Bingley Town Hall, into the circumstances of the death of James Hart, about sixty years of age, fellmonger, of Nottingham, which resulted from injuries sustained by being knocked down and run over by a motor-car on the 3rd inst. Superintendent Grayson and Inspector Birkhead represented the local police, and Mr. W. Firth, of Bradford, appeared in the interests of Mr. A. Farnell, cycle manufacturer, Bradford, who was driving the vehicle which caused the deceased's injuries.

The evidence showed that Hart—who was in the habit of travelling about the country to work—commenced to work for Mr. H. Backhouse, fellmonger, Dowley Gap, Bingley, on February 2nd, the day before the accident, and worked until five o'clock on the following day. Hart seems to have been crossing Bradford Road, from Healey Lane, when the motor-car approached. James Birtle, overlooker, York Street, Bingley, said that the motor-car passed him in Bradford Road, going in the direction of Bradford. Immediately afterwards he heard a crash, and, going back, found Hart lying in the road, bleeding from the head. He estimated that the car was going at the rate of ten miles an hour when it passed him. Witness added that the deceased had got half way across the road when the motor-car came along; the driver seemed to be getting out of the way of the man, and the man getting out of the way of the car, when the collision actually occurred.

Mr. George Newton, manager of the co-operative shoe department, Bingley, described watching the motor-car ascend the hill out of Bingley and run down the incline to the spot where the accident occurred. Its speed at the time was about seven miles an hour. He did not think the driver was to be blamed at all.

Mr. Albert Farnell gave evidence, after being warned by the coroner. He said that the vehicle was running at the rate of seven to eight miles an hour when the man was knocked down. He saw him begin to cross the road when some 12 yds. or 15 yds. away. Witness was on the proper side of the road, and he blew the horn to warn the man, who moved across to the centre of the road, and remained there, as if it was his intention to wait for the car to pass. Witness crossed over to the right to pass in front of him, and whilst he was running on the man rushed diagonally across the road, trying to get to the causeway. He fell or was struck down right in front of the vehicle, which passed over him. Witness stopped the car as quickly as possible and went to the man's help.

The Deputy-Coroner said that the speed of the motor-car did not appear to have been excessive, and the accident seemed to have been caused through confusion between the driver and the deceased. It might have been an injudicious action for the driver to have crossed to the right side of the road—he thought, perhaps, it was. If he had kept on the left side it would have been clear enough; he could hardly have been blamed. The jury returned a verdict of "Accidental death." We understand that the funeral expenses of the deceased will be borne by Mr. Backhouse and Mr. Farnell.

#### A FURIOUS DRIVING CASE.

AT the Gravesend Police Court last week Mr. Joseph Baxter, carrying on business as the Aerolite Cycle and Motor Company, was summoned for furiously driving a motor-car in Milton Road, on January 23rd, at 7.5 p.m. Police-constable Thompson said that he was on duty in Milton Road on January 23rd, at 7.5 p.m., when, by the Clock Tower, he saw the defendant in his motor-car, driving at a rate sufficient to cover a mile in four minutes. There were a number of pedestrians in the road, and the defendant was blowing his horn for them to get out of the way. Dr. Firth and someone else were with defendant in the car.

Defendant: How far was I from you when you first heard me "pip-pip-ing?"

Witness: You were just abreast of me.

Defendant: You say I was travelling at fifteen miles an hour; what cause had you to come to that conclusion?

Witness: Common sense.

Defendant: Why did you go to my shop after you saw me?

Witness: I went to say that I should report you.

Defendant: Do you know anything about motor-cars?

Witness: No.

Joseph Baxter, defendant, sworn, said that on January 23rd he brought a new car from London. He got into Gravesend at 6.30 p.m. He went to his shop, and from there to Dr. Firth's house, where the doctor and his son got on the car. He had bought the car for Dr. Firth. It was impossible to drive at the rate sworn to by the previous witnesses, as under the most favourable conditions fifteen miles was the highest possible rate, and the greasy state of the roads would bring the speed down to ten miles per hour. It was also a new car, and only after considerable use could the top speed be got out of the car. Fifteen miles an hour was only possible with one person in the car, and three would greatly impede the pace. On the night mentioned the car was only travelling at the rate of ten miles an hour.

Dr. Firth, called by defendant, said at seven o'clock on Tuesday Mr. Baxter brought the new car round to his house, and witness and his son at once stepped in and went for a ride. In Milton Road there was remarkably little vehicular traffic, and there were only a few pedestrians. The speed of the car was only ten miles an hour. The roads were very heavy indeed. There was not the least semblance of furious driving, and butchers habitually drove faster.

Defendant, recalled, said that the brake power of the machine was sufficient to stop the car in two lengths. He had driven through the streets of London on Sundays at the rate he drove on the 23rd ult. He had covered three thousand miles in motor-car driving, and had never had the least accident.

The Magistrates retired for a time, and on their return the Chairman said that they considered Mr. Baxter had been driving too fast, and he would be fined 10s. 6d., and 18s. 6d. costs.

Mr. Baxter: What is the alternative?

The Chairman: We did not intend to insult you by naming an alternative, but that would be seven days.

Mr. Baxter: Then I will go to gaol.

Defendant, however, eventually paid the amount.

In connection with the above case, Mr. Baxter, of the Aerolite Company, writes as follows:—"The facts of the case are these: On the 23rd January last I brought a 3 h.p. 'Benz Ideal' car through the town, and had two gentlemen on the car beside myself. I was going about ten miles per hour, not more, as the belts were slipping and the roads were heavy. As you know, it would be impossible to get fifteen miles per hour out of the car with three persons in it. I had to go up a rise in King-street where the cabman swore I was going fifteen miles per hour. A 'Benz' car will not go more than eight or nine miles per hour up the rise. I have been told to-day by a sergeant of the police that there is not a man in the Gravesend police force who knows we are allowed to go faster than a horse. He stated that if I was going above eight miles per hour I was furiously driving. Will you kindly let me know what is the limit we are allowed? As I had two respectable witnesses against one policeman's word, you can see how a motor-car is welcomed in the borough of Gravesend."

#### THE DUNLOP TYRE COMPANY v. THE MOTOR-CAR COMPANY.

In the action, Dunlop Pneumatic Tyre Company, Limited v. Motor-Car Company, Limited, in the Chancery Division on the 9th inst., Mr. Justice Cozens-Hardy had before him a motion by which the plaintiffs sought an injunction to restrain an infringement of the Welch patent for pneumatic tires.—Mr. A. J. Walter, for the plaintiffs, said that the defendants had consented to treat the motion as the trial of the action, that judgment should be given for the plaintiffs for an injunction in the terms of the notice of motion.—Mr. Justice Cozens-Hardy made an order in the terms agreed upon.

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# THE Motor-Car Journal.

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## COMMENTS.



**F**ITFUL as have been the experiments with regard to the employment of automobiles in the despatch of mails in this country, they have been sufficient to demonstrate the practicability of the idea. Other countries which have indulged in experiments on a systematic and thorough plan have been able to utilise the motor-vehicle for ordinary services, and we wonder why such interesting proofs of capacity as were recently given in Lincolnshire have not been followed up. On another page we publish a useful review of the present Post Office attitude with regard to automobiles in the United

States, Germany, and France, which should convince St. Martin's-le-Grand that they will ultimately have to dispense with horses in a good deal of their despatch work.

### Motoring in the Snow.

It is not only English *chauffeurs* who have been enjoying the delights of motor-ing in the snow, for this week particulars have reached us of a trip made last month from Berlin to Stettin by Herr Julius Beutler, manager of the Motorwagen Gesellschaft, of Berlin. The vehicle was a ten-seated brake, and notwithstanding the fact that the roads between the two cities were deep in snow, and that on the way a heavy fog was unfortunately encountered, Herr Beutler succeeded in making the journey in seven hours.

### Snow Experiences in America.

IN connection with the question of motor-car traffic in the snow the following extract from the last issue of the *Horseless Age* is not without interest:—Boston automobilists were watched with a good deal of interest during the heavy snow ten days ago to see how their vehicles would stand up. The Locomobile Company's carriages were running in Newton, though the vehicle in use by the city of Boston was not taken out because there was no call for it in a business way. The electric cab company ran its broughams, but did not send out the open front hansoms. The drivers of the public cabs reported that the biggest difficulty was after the snow began to melt, for drifts near the curb made trouble in getting near to and away from the pavements.

### A Horseless London.

WE are glad to welcome the *Public Health Engineer* as an addition to the many papers which are beginning to show a more rational feeling towards automobiles. In their last issue our contemporary remarks:—There are not wanting signs in our streets to indicate that a horseless London—at present an almost unattainable ideal—may at some future period not too distant become an accomplished fact. When we consider the enormous changes which the last fifty years have

witnessed, it does not appear illogical to assume that in the future we may see greater changes still. With regard to auto mobilism, there is at least one hopeful sign. If the progress in-pleasure and passenger traffic has been slow, in this country, at any rate, there has, we must admit, been a very healthy growth in heavy traffic propulsion. From a sanitary point of view the introduction of motor-vans, especially for heavy street traffic, must be welcomed as a very great boon and gain. The condition of our streets is a standing disgrace to the civilisation and enter-prise of this great country. The inconvenience of dirty streets is sufficiently apparent, and sufficiently palpably brought home to most of us to require any more insistence; but the sanitary dangers of dirty streets are scarcely realised, even by sanitary reformers who have made sanitation and bacteriology their special study. To have putrid matter lying decomposing in the streets under the mouths and nostrils of crowds of people, must be dangerous to the public health, especially in muggy, murky weather, when the atmosphere is heavy and damp.

### The Rochet Motor-Car.

THE other day we had an opportunity of inspecting, at Messrs. Friswell's depôt, the first Rochet motor-car which has been imported from France into this country. As the motor and mechanism of this vehicle were fully illustrated and described in our issue of 11th August last, a lengthy account is unnecessary at the present time. We may add, however, that the vehicle inspected this week takes the form of a four-seated dog-cart mounted on a well-sprung tubular frame and pneumatic-tired-cycle-type wheels. The motor is of the vertical two-cylinder type of 8h.p. with water jacket and electric ignition. The engine is located in the rear of the car and transmits its power by a longitudinal shaft terminating in a bevel gear enclosed in a case, which also contains the variable gear, located under the foot board. The power is transmitted by bevel gear to a differential countershaft and from the latter to the rear wheels by the usual sprocket wheels and chains. Three speeds forward and a reverse are provided, the change speed-gear being controlled by a hand lever at the side. Steering is controlled by a bar, while there are three brakes, one operated by a foot pedal acting on a drum on the counter-shaft and two band brakes, actuated by a hand lever, on drums on the rear axle. A pedal-operated clutch is provided, as usual, by means of which the engine can be instantly cut out from the transmission gear. The motor is readily accessible, and altogether the car has a substantially built appearance.

### Automobiles at the Paris Exhibition.

NOT only is the space in section No. 30 of the Paris Exhibition at the Champs de Mars greatly over-applied for, but it now appears that applications amounting in the aggregate to 3,200 mètres have been made for the 2,200 mètres of available space in the hall at Vincennes, so here again exhibitors will need to be satisfied with smaller stands than they had hoped and applied for. Although the difference between the space available and applied for at Vincennes does not compare in the slightest



degree with the discrepancy at the Champs de Mars, still it is large enough to cause the commissioners of the section some trouble in giving satisfaction to all exhibitors, and it will require all the tact possessed by MM. Jeantaud and Delaunay-Belleville to appease everybody. The list of applications was closed on the 15th instant.

#### Good for the Watchmakers.

MANY are the iniquities which have been credited to the motor-car, and to the running down of sheep, the frightening of stray pigs on the roadside, and the destruction of human nerves, a member of a Norfolk hockey club has added another enormity which we chronicle for the edification of our readers. The secretary—a charming young lady—of a hockey club recently called on the principal of a motor-car establishment in the royal county (his name will readily occur to all acquainted with the development of the motor-car in the eastern shires). She wanted to know the terms for hiring automobiles to convey the members of the club to the hockey ground, it having been suggested to the club adherents that they could cheaply and comfortably patronise that form of conveyance. The only objection came from two ladies, one of whom was afraid of being blown up, and the other asserting as a positive fact that the motor-car spoiled the watches of those who travelled that way! We shall next hear of an Association of Watchmakers for the Popularisation of the Automobile, organised by some enterprising traders in our busy towns; unless they learn that the automobile is one of the best means of keeping time, as those who live in the country and delight in punctuality in appointments can testify.

#### An English-built Light Steam Car.

WE have received some particulars of the steam car which has been entered for the forthcoming 1,000-mile Trial by Mr. Cyril Gooch, of Sedburgh, Yorkshire. The vehicle, which we hope to illustrate in a subsequent issue, is being built by the Times Motor and Engineering Works, of Upper St. James-street, Brighton, and has seating accommodation for four persons. Steam is supplied by a tubular boiler—the tubes being of copper—capable of evaporating 380 lbs. per hour. The working steam pressure is 200 lbs. per square inch, the boiler being tested to double this pressure. Ordinary paraffin oil is employed as fuel, the atmospheric burner used being of a special type. The engines comprise two high-pressure cylinders 4 in. by 6 in. stroke, with surface condensers, and are capable of working up to 12 h.p. The power is transmitted direct from the engine shaft to the rear axle by chain gearing. Three brakes are provided, while the working parts throughout are fitted with ball bearings. The wheels are of the cycle type, 33 in. diameter, and are shod with 2½ in. solid rubber tyres. The Times Company tell us that they have already secured several orders for their new vehicle.

#### Hindrances to Progress.

AMONG the hindrances which have beset the development of motor-car services few are so potent as the imperfections of some of the roads in provincial towns. The language of cabmen, the hostility of local authorities, and the prejudice of insular Englishmen can be got over—but the roads! We see from a Newcastle journal that the abominably paved streets in that city are proving very serious drawbacks to automobilism, owing to the fact that large sums of money have to be spent in repairing the injuries which motor-cars in the public service suffer from the rough paving. Such indictments as these could be presented in many other places besides Tyneside. Motorists will have to educate local authorities as well as horses. Since the foregoing was in type we hear that the Town Improvement Committee of the Newcastle-on-Tyne Corporation have decided to pave the principal streets in the city with wood. The estimated cost is £18,000, and a start is to be made with the work as soon as possible. It is as likely that the adoption of the motor car may lead to as great improvements in the

streets of our great towns as it undoubtedly will in our country roads.

#### On the Stage.

It would seem that the automobile is to play a not unimportant part in stage-land. Only last week we referred to the "Autogo" used by two music-hall artistes in America, and to a drama at a South London theatre, in which a motor-car figures somewhat prominently. To these a further instance can now be added, for in the course of the eccentric comedy, "The Bishop's Eye," produced at the Vaudeville Theatre in London, last evening, the bishop trundles blandly across the stage on a motor tricycle. This little incident adds greatly to the effectiveness of the scene, and the now familiar "toot-toot" of the motor-horn is a dominant sound throughout the piece. The programme informs us that the machine was supplied by the Motor-Car Company, Limited.

#### The Progress of Electrical Vehicles.

ONE of our readers who has just returned from New York, comments on the rapid strides which are being made in the United States with electric vehicles of all kinds, in the development of which Riker's Electric Vehicle Company is taking a prominent part. The Riker Company has recently removed to extensive works at Port Elizabeth, which have been fitted with modern American machinery, and are at present employing some 1,200 hands. Electric vehicles have apparently caught on in the United States amongst the Upper Ten, for we notice in the recent automobile number of the *New York Journal* various descriptions of electromobiles as built for the Astors, Vanderbilts, Mr. Potter Palmer, Mr. Albert C. Bostwick, and other well-known American millionaires whose favourite type of vehicle is apparently the "Dos-à-dos," similar in description to the cars which have been introduced into this country by Messrs. Shippey Brothers, Limited, the London agents of the Riker Company. We also learn that this company are constructing a special electric demi-coach for England, one of a number which it is contemplated to run daily in the summer season between London and Brighton, Hampton Court, and other pleasure resorts around the Metropolis, on the lines adopted by the four-in-hand coaches at present catering for this class of pleasure trip service.

#### Electrical Charging Stations in France.

THE Touring Club de France, although an organisation primarily concerned with cycling interests, has never failed to use its best endeavours towards the promotion of the automobile cause, and it is now engaged upon a work which should do much to further the interests of electromobilists, and ultimately render possible extended tours in this type of self-propelled vehicle. The Touring Club proposes to circularise all persons who may have electric power at their disposal, urging upon them the desirability of installing electric charging stations and offering them assistance in carrying out the work. A special map is being prepared indicating the whereabouts of electric stations, and this will probably be issued at a comparatively early date, when it will command a ready sale among drivers of electric cars. In the annual of the Société d'Encouragement pour le Développement de l'Industrie Automobile en France a special mark is set against those hotels, "garages," etc., which possess facilities for re-charging accumulators, but this list is not complete, and the publication of an up-to-date and elaborated list and map will be a perfect boon to those interested in the electric branch of automobilism. Charging stations are very scarce in the French provinces, but still they are more plentiful than is generally supposed, and the Touring Club's circular should have the effect of bringing to light the existence of several hitherto unknown by electromobilists. It is this unison of clubs, societies, journals, etc., all doing their best to promote the welfare of the new industry and sport, that constitutes the strength of automobilism in France and has brought it to its present proud position.

### A Country Club House.

THE *Automobile* of New York, in its last issue to hand, gives an illustration of the residence at Kingsland Point, the use of which has been given until March 31, 1901, to the Automobile Club of America for a club house by Mr. John Brishen Walker. The house, which is about twenty-six miles from New York, belonged for nearly a century to the Kingsland family, and but recently came into the possession of Mr. Walker. The house is furnished, and the grounds are especially attractive by reason of the heavy grove in which the house stands and the many nooks and interesting historical spots with which the place abounds. The ride from the city is a pleasant one. The location is cool in summer, and the cheerful fireside in winter will make it a desirable objective point for a run on the shorter days of the year. As regards the distance and location with reference to the city, it would seem, remarks our contemporary, as if no more desirable place could have been chosen, and the Club has been especially fortunate in thus receiving a house outside the city.

### Accidents in France.

THE current issue of the statistical table of accidents caused by animal and mechanical traction in France, which is compiled monthly by our contemporary *Le Vélo*, is noteworthy as recording for the first time the mishaps occasioned by the use of the cycle, and thus rendering possible a direct comparison between the horse, the automobile, and the cycle, the three great means of locomotion to-day. Month by month the number of accidents brought about by the noble steed in France is truly appalling, and the average of fatalities among them is invariably high. Granted that the number of horses in use enormously surpasses the number of automobiles and cycles combined, still the difference does not account for the huge discrepancy in the list of accidents, and the increase of safety obtained by the employment of the automobile and the cycle in lieu of the horse cannot be seriously questioned. An examination of the list of fatalities only brought about by the horse, reveals the great variety of accidents bringing death in their train, which he may cause. We read of men kicked to death, of men so seriously bitten that death has ensued, of men thrown from the saddle and killed, of deaths caused by runaway steeds, of drivers jerked from their vehicles and killed through a swerve or a fall of their horses, and so on *ad infinitum*. There is the January summary—819 accidents, causing 68 deaths, and injuries to 751 persons—terrible figures truly and hardly realisable, so accustomed are we to pass by accidents of this description with hardly a thought. And automobiles, what is their record for the corresponding period? Twenty-eight mishaps only, and two of them occasioning fatalities, both these latter being caused by automobiles employed in public service, one having been brought about by a motor-omnibus and the other by an electric tancar. As for the cycles, well, their figures show that during January forty-seven accidents must be laid to their charge, two of these resulting fatally, in one case the rider himself and in the other a pedestrian meeting their deaths. The subsequent issues of these statistics will be looked for with interest, and will command the attention of everybody who takes interest in the question of mechanical *versus* animal traction.

### Automobilism in America.

"OUR sense of moral responsibility to the community," finely says the editor of the *Automobile Magazine*, of New York, "impels us to set forth a few facts that might be overlooked by the casual reader who admires the numerous pictures of motor-vehicles, many of which have been thought of, some of which have been built, and a few of which have been sold, and are supposed to be in use." After declaring that automobile vehicles are still curiosities in the streets of New York, Chicago, Philadelphia, and Washington, our contemporary goes on: "In the smaller cities it is safe to say that the reading of eloquent predictions for the future of the automobile and the still more glowing prospectuses

of companies organising for the production of twenty or more vehicles per day, is the only evidence of the new industry which is destined to work such beneficent changes. In fact the literature of the automobile is at present more voluminous and picturesque by far than the manufacture. There are more publications on this subject, some appearing regularly and others 'every little while,' than there are factories in actual operation prepared to furnish automobile vehicles with reasonable promptitude and at a fair price. Meanwhile even the reputable persons who are at the head of millionaire companies, and whose pictures adorn the pages of the trade papers, are singularly slow in perfecting their organisation and turning out work. We hear that they are 'rushed with orders' and that it is impossible for them to supply the demand, but is it not time that we should see some tangible results of this enormous production? It must be confessed that the present status of the automobile industry would be more correctly defined as the present hiatus. It cannot be denied that the majority of the manufacturing enterprises in this line are still enveloped in darkness and slowly groping towards the light. Instead of being 'rushed with orders' and producing hundreds of vehicles weekly, they are, in reality, either looking for capital or new patents or improvements in their present methods which shall insure greater economy and practicability in their product." The article concludes with a confession that automobilism is in the "educational period" in the United States and that much better material and vehicles are to be found in Europe. Evidently the Americans are becoming modest.

### Automobile Construction in Austria.

QUITE a number of new automobile concerns have lately sprung into existence in Austria, and it would seem that the motor-vehicle is coming into more prominence and use in that country. In addition to the Nesseltdorfer Waggenfabriks Gesellschaft, of Nesseltdorf, and Messrs. Lohner and Co., of Vienna, whose vehicles have already been referred to in these columns, the Austrian Daimler Motor Company (Bierenz, Fischer, and Co.), recently formed with a capital of 650,000kr., are establishing works at Neustadt, Vienna, with a view of turning out 100 cars a year. The works are under the direction of Herr Paul Daimler, a son of the well-known inventor, and the



MR. NEVILL COPLAND ON HIS CRITCHLEY CAR.

This vehicle is entered in Section II. of the Automobile Club's 1000-Mile Trial.

first cars are expected to be ready within the next month or so. Messrs. Goebel, Knoller and Co. is another Vienna firm which promises to have ready for the market shortly a light steam car of its own construction. Herr Josef Kainz, of Vienna, has just completed a two-seated car fitted with a 3½ h.p. petrol motor, while the Leesdorfer Automobilwerke Gesellschaft, which has acquired the Austrian patents in the Amedée Bollée cars, is equipping works at Baden-Leesdorf to turn out 150 cars per year.

## MIDLAND MOTOR NOTES.

By "HERCULES."



## A Collision in Coventry.

THE first collision between a motor-car and any other vehicle which has come under my notice occurred the other day at Coventry. Readers of these Notes will remember that I have often referred to the narrow thoroughfares of the ancient city, and matters are not improved by the fact that there is a tram-line down some of the streets, and a frequent service of trams. The tram-lines are a source of danger to the cyclist and motorist, the wheels skidding on the smooth surface and flying off at a tangent. It would seem that this was the cause of the accident to which I am alluding. A motor-car was travelling down the Burgess, and in crossing the tram-lines to avoid other traffic the wheels skidded, and the front of the car dashed into a dray belonging to a railway company. The dray was standing still at the time of the collision. The force of the impact smashed the front of the car, and broke off the splash board, one of the tires also bursting.

## The Coventry Corporation's Omnibus Bill.

THERE is one clause in the Coventry Omnibus Bill, which will come before Parliament early in March, which has caused considerable feeling amongst the motor manufacturers and motorists generally in the city. The clause is as follows:—"Every person who shall ride or drive so as to endanger the life or limb of any person, or to the common danger of the passengers in any thoroughfare, shall be liable to a penalty of not more than 40s., and may be arrested without warrant by any constable who witnesses the offence." The motor manufacturers of Coventry and the Automobile Club view this clause with much suspicion, believing it to be aimed particularly at motor-vehicles. The Automobile Club has taken the question up energetically, and as a result a petition against the clause will most probably be strongly urged. The provision of the clause which is most objected to is "may be arrested without warrant by any constable who witnesses the offence." This is regarded as most arbitrary, and as giving to the police power which would prove injurious to the motor industry.

## Not Aimed at Automobilists.

I HAVE made inquiries in official quarters in Coventry, and am informed that the clause in question is not aimed at drivers of motor-cars in any way, but that it covers all classes of vehicles. Motorists are mistaken in the view they have taken of the clause, and their suspicion is quite groundless. As a matter of fact this clause gives no new power to the police, for, under the Towns Police Clauses Act, a constable who sees a driver endangering the life or limb of a pedestrian has the power of arresting the offender without warrant. The Towns Police Clauses Act runs: "Every person in any street" (i.e. road, square, thoroughfare, etc.) "who, to the obstruction, annoyance, or danger of the residents or passengers commits any of the following offences, shall be liable to a penalty not exceeding 40s. for each offence, or in the discretion of the justices before whom he is convicted, may be committed to prison for not exceeding 14 days, and any constable or any other officer . . . shall take into custody without warrant, and forthwith convey before a justice any person who, *within his view*, commits any such offence." One of the offences is "rides or drives furiously any horse or carriage." This Act is in force throughout the country, consequently the clause in the Coventry Omnibus Bill does not effect any change in the powers of the city police in regard to vehicles generally. There is another view of the question taken in some quarters. Motors are termed light locomotives, and any offence committed by persons in charge of or driving a motor cycle or car would have to be dealt with according to the provisions of that Act, and not under the bye-laws or Towns Police Clauses Act. If this view is correct the suspicion entertained by the motor manufac-

turers and others is quite groundless. I don't think it is a correct view. If the clause of the new Bill is passed the police will be able to take proceedings against all types of vehicles, including light motor-cars, cycles, etc. But motor-cars are not singled out any more than are cycles, cabs, etc.

## Coventry Corporation in favour of Automobiles.

IT may be taken for granted, I am assured, that there has been no change in the attitude of the Coventry Corporation towards the motor industry. Only a short time ago the Mayor spoke in favour of everything being done in the city to encourage the industry, and other members have spoken in similar terms. In fact several of the members are personally interested in the trade, and would protest most vigorously against any step being taken which would injure it in any shape or form. Very few complaints have, I am told, been made to the police against drivers of motor-vehicles, and the police, like the Corporation and the citizens generally, are most favourably disposed towards motoring, and there is no reason to fear that it is intended to jeopardise a trade which it is hoped will considerably benefit the city.

## A WALK DURING A CLUB RUN.



'Twas the voice of the motor, I heard it declare,  
As it hummed along merrily, cutting the air,  
"On to the footpath, out of my way,  
Or hand-brakes and back-lash will cause me to sway."

But thought I "What is this—is't a Panhard or Benz?"  
When all of a sudden a belt-squeak it sends;  
"Panhard it is not. Benz? Yes, it may,  
Yes, Benz it must be," the exhaust makes me say.

"Now look there at that beautiful racer, quick, here!  
It's a Panhard this time, yes it is, that I'll swear;  
Body of nothing, horse-power of twelve,  
A racer of note, Charlie Rolls, 'tis himself."

"Dear me, what is this wonder? Shall we give a shove?"  
As it crawled along just like a half-dying dove.  
"Thanks for your kindness, no use," they say,  
"Alas we are 'air-cooled,' some time must we stay."

"Ah! then there is a Daimler, of faultless design,  
"Though axles and wheels have—but there don't malign.  
"Planished steel bonnet, who is the rogue?  
"Lor' he's a Scotchman, who are *Muir* in vogue."

"Now this must be a demon, with such a sharp *Edge*,  
"With Napier engine which all will acknowledge  
"A jolly good thing, well push it along,  
"Your H.P. is sixteen, and nothing goes wrong."

So now here 'palpetateth' the last of the Run,  
Little "Staplee" and "Secretary" out for some fun.  
"Keep to the law, sir, twelve miles an hour,  
"Or five pounds and costs you will find very sour."

E. HUTTON.

St. Moritz, Engadine,  
18th February, 1900.

WE are informed by Mr. G. B. Helmore, secretary and treasurer of the Motor Vehicle Users' Defence Association, that since the announcement that the association was formed, the number of gentlemen who have subscribed and become members has been most gratifying, and it bids fair to become one of the most important organisations in the kingdom. A meeting of members of the new association is to be held at the Automobile Club at five o'clock on Tuesday, the 6th prox., to appoint five members to act on the committee of management.

## TWO NEW ENGLISH MOTOR-VOITURETTES.



IT has already been stated in these columns that, just as in France, there is a distinct movement in this country in favour of the voiturette class of automobile, and this week we are able to give illustrations of two new cars of this type of English construction.

Fig. 1 gives a general view of the Billings voiturette, which is being introduced by Mr. J. Burns, of Berners-street, London, W., and on one of which we had the pleasure of a short run on Tuesday in company with Mr. Billings, the designer of the car. As will be seen, the vehicle is propelled by means of a 2½-h.p. air-cooled De Dion motor, located in the front part of the frame. The latter is of special tubular construction, there being practically two frames suitably braced together, suspended by steel springs on the axles. Two speeds are provided—six and twelve miles per hour, on the car we tried—the power being transmitted by belts working on fast and loose pulleys to a small differential countershaft at the rear, and from the latter to the back axle by enclosed pinions centrally located. Not only is the car so arranged that the motor can, if desired, be started from the seat, but the oil from the crank case can be emptied and a fresh supply injected without the driver dismounting. Steering is effected by a tiller, the standard of which is located in front of the dash board; the road wheels are of the cycle type, with pneumatic tires, while as to brakes there is one on the countershaft and one each on the hubs of the rear wheels. The petrol tank has a capacity sufficient for a run of 100 miles. The car, which only weighs 400 lbs. has already been driven several hundred miles, and is stated to have mounted a gradient of 1 in 10 with two passengers aboard. As a result of his tests with the car, however, Mr. Billings informs us that he has resolved to fit future cars with a 3-h.p. water-cooled De Dion motor, in order to have a greater reserve of power at command than is possible with the air-cooled engine. Although the illustration shows the motor not to be provided with a bonnet, this will of course be fitted to all cars turned out, a number being, we understand, already in process of construction.



FIG. 1.—THE BILLINGS VOITURETTE.

In Fig. 2 we give an illustration of the two-seated motor-voiturette lately constructed by Messrs. Monk and Lonsdale, of the Marlborough Motor Works, North Road, Brighton. The car is propelled by a 2½-h.p. vertical air-cooled motor, placed in the front of the frame; it is belt-driven, two speeds of five and twelve miles an hour and a reverse motion being provided. The speeds are changed by a single lever. The frame throughout is made of spring steel riveted together. Steering is controlled by a sloping hand-wheel, in the standard of which a universal joint is introduced, so that it can be moved to allow for getting in and out of the car. Oil-retaining bearings, and a new type of silencer, are fitted, while provision is made for the engine to be started from the seat or in the ordinary way. Messrs. Monk and Lonsdale in sending us the particulars

state that the photo, although not showing the car in its perfectly finished state, is quite enough to indicate the general arrangement. The body will, of course, be better finished than in the illustration, and C springs will be fitted, while the front will have

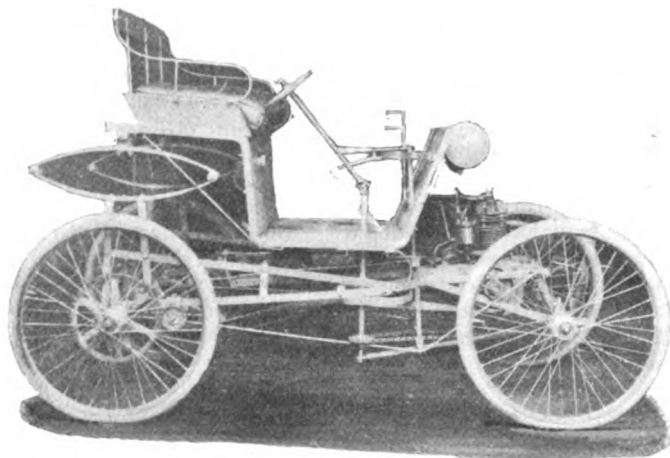


FIG. 2.—THE MONK AND LONSDALE VOITURETTE.

a detachable cover to go over the engine. They further state that everything, except the raw material, is manufactured on their own premises.



"FAHR-HEIL," is now a popular form of greeting in German automobile circles.

THE Daimler Motor Company, Limited, has decided to fit a water-cooler to all its cars in future.

WE hear that Mr. A. P. Cunliffe, of Druid's Lodge, Salisbury, has ordered a 12 h.p. twin Daimler car.

MOTOR-CAR services are about to be inaugurated in several French departments by the Compagnie de Traction Automobile du Plateau Central.

ACCORDING to a recent return there are at present thirty-three automobiles at present in use in West Flanders—twelve motor-tricycles and twenty-one cars.

MR. H. WATERSON, of Aston, Birmingham, writes us from Paris, stating that he has acquired an interest in the patents in the Raymond carburettor for petrol motors illustrated in our issue of February 9th last, as also the sole agency for the apparatus in England. The Raymond carburettor is being made in two sizes—one for motors up to 3 h.p., and one for larger engines working up to 5 h.p.

A NEW variable speed-gear has lately been introduced by Mr. Colcord Upton, of Beverly, Mass., U.S.A. While neat and compact in form, the device is said to give a strong and efficient gearing. Three band brakes and a friction clutch perform the different functions. By compressing the middle brake the slow speed ahead is obtained. Throwing in the clutch gives the fast speed. A brake applied to the disc containing the clutch furnishes an emergency brake should the ordinary brake fail to operate, while a brake applied to the disc farthest from the clutch gives a reverse movement to the sprocket.

A MEETING of the Bristol local committee in connection with the 1,000-mile trial was held last week. Mr. W. M. Appleton (local hon. secretary) reported that the right hon. the Lord Mayor of Bristol had consented to be one of the patrons, that the Drill Hall had been secured for the exhibition of the cars for Tuesday, the 24th April, and that there would probably be a parade of the cars on the Downs on the morning of that day. It was decided to form a guarantee fund to meet the local expenditure, and it was determined that the profit resulting from the exhibition should be divided between the Lord Mayor's War Fund and the Motor Vehicle Defence Association, and those present agreed to become guarantors.

## MOTOR-CARS ON THE CONTINENT.

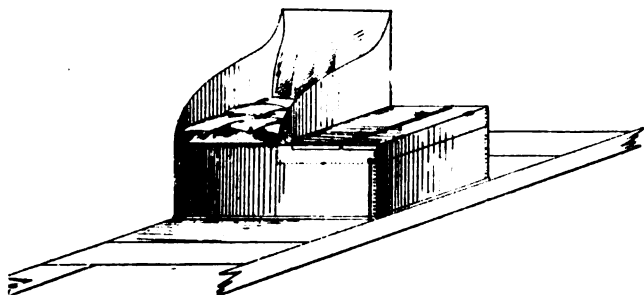
(From Our Own Correspondent.)

### At Spa.

It will be from Sunday, August 26th, to Saturday, September 1st, that the automobile races and fêtes will take place at Spa, and after last year's brilliant success the meet will be looked forward to with more than ordinary interest. The Automobile Club of Belgium will organise this meet, and certainly there is no society better qualified to carry out the work. The prizes will amount to at least £800, so successful *chauffeurs* will have something to show for their visit to Spa. This automobile week is the last of a series of fêtes organised in the town, and which commence with a cycle meet in May, and includes a balloon race, a lawn tennis tournament and a children's athletic meeting. There is plenty of life and amusement to be found in Spa.

### Charron's New Racing "Body."

MESSRS. CHARRON, GIRARDOT, AND VOIGT, of Paris, have, according to the *New York Herald*, patented a new automobile body which diminishes the weight of a racing machine to a very appreciable extent. In an interview with M. Charron he is reported to have said, "I shall use this new body in my race for the International Cup. The idea is simply to do away



with the 'body,' properly so called, and substitute a new style of tank to contain the petrol. Over this tank sit the driver and his mechanic. Room is also provided for the tool-chest and the box for the duplicate parts. The tank will contain 85 litres, and will weigh, with everything included, from 25 to 30 kilos., or from 3 to 4 kilos. over and above the tank now ordinarily in use. On the other hand, it does away completely with the weight of an ordinary automobile body."

### On the Riviera.

YET another automobile race will be held during the Riviera season, as the "Cote d'Azur Sportive" has recently announced its intention to organise a *course* on the hill of Esterel, under the patronage of the Automobile Club of Nice and the Fêtes Committee. This event will take place on Sunday, April 1st, that is a couple of days after the Nice-La Turbie race, the closing *course* of the Nice week. Already the Prince of Monaco, the town of Cannes, and the Automobile Clubs of France and of Nice have given handsome prizes for this event, and it is anticipated that many others will be forthcoming. Of course, the race will be decided under the rules of the "A.C.F.," whose official categories will also be followed. It will be on Monday, March 5th, that the Automobile Club of Nice will formally open its new and beautiful club house, and special efforts will be made to render the function an exceptionally brilliant one. A circular has been issued to all members asking their assistance at this new phase of the club's life. The "A.C.N." has recently received a communication from the president of the Automobile Club of Austria appointing them official representatives of the Vienna Club, and adding that it is the intention of many Austrian *chauffeurs* to assist at the Nice week.

This good feeling and kindly sympathy so manifest between the various international societies is certainly one of the most delightful phases of automobile club life, and long may it continue.

### The German Automobile Club.

UNDER the presidency of the Duke of Ratibor the German Automobile Club held its first general meeting on Monday last at the Hotel Bristol, Berlin. A very fair number of members put in an appearance and listened with interest to the chairman's address, setting forth the present position and future prospects of the club. Although but of quite recent inauguration the society already rejoices in a roll of 225 gentlemen and lady members, including many members of the aristocracy. The Secretary of State for Posts and Telegraphs, Herr von Podbielsky, is numbered among the club's honorary members. As all English club members are aware, the German society is affiliated to the "A.C.G.B.," and it also holds the same position with regard to the Automobile Clubs of France, Switzerland, Austria, Belgium, and Italy.

### The Automobile Club of Florence.

IN a recent issue I made mention of the formation of an automobile club at Florence, and I am now able to supplement that news by a list of officials recently elected by the members of the new club for the current year. It is evident from this list that automobilism in Italy numbers among its adherents very many members of the aristocracy, and with such influential guidance the new society should have no fears as to its future success. The officials are:—President, Prince Piero Strozzi; vice-president, the Marquis Lorenzo Ginosi; secretary, Count Eduardo Saint-Giorgio; treasurer, the Marquis Ernesto Corsini; committee, the Marquis Carlo Ginosi, Duke Leone Strozzi, the Marquis Antonio della Stuya, the Marquis Ridolfi Rodolfo, and Alfredo Cappellini.

### The Mors Voiturette.

WHAT a jolly little car the Mors voiturette is! On the occasion of a recent visit to the big Grenelle factory I was given an opportunity of putting the "Petit Duc" to a pretty severe test over the very heavy roads resulting from the almost continuous rain experienced in Paris during the last fortnight, and the car more than realised my expectations, especially from a hill-climbing point of view. The carburation was adjusted in a couple of minutes at the start, and was not touched again during a continuous drive of about three hours, the engine running with great regularity all the time. The price may be somewhat high, but after all a well made car is the cheapest in the long run.

### The Pau Meet.

YES-TERDAY morning, the 22nd inst., will have witnessed the first of the Pau races, a *course* reserved for tourists, and contested over a route from Pau to Peyrehorade and back, a distance of 140 kilomètres, or about 88 miles. The categories in this event were as follows:—(1) Two-seated cars weighing more than 100 kilos.; (2) two-seated cars weighing less than 400 kilos.; (3) four-seated cars weighing more than 400 kilos.; (4) cars of six or more seats; (5) voiturettes of one or two seats weighing less than 100 kilos.; (6) motor-cycles. The list of entries, which had been closed simultaneously at Paris and at Pau last Sunday night, contained the following names:—Class 1: René de Knyff, 16 h.p.; Loraine Barrow, 12 h.p.; Pascault, 15 h.p.; Secrestat, 12 h.p.; Bozon de Périgord, 12 h.p. Class 2: J. Guillemain, H. Meyer, Duluc. Class 3: Rigby Knowles, 7 h.p.; A. Clément, 12 h.p.; Comte Louis de Lasbases. Class 4: Bergeon. Class 5: De Segeer, Albert Chain, Cornilleau, Tart, Labadie, Schmidt. Class 6: E. Barrow, Pratt d'Oloron, Barrès, H. Meyer, Robert Dupré, Prat-Dumas, Counier, Rendu. To-day



the automobilists will be participating at a fox-hunt, and will follow the hounds as far as circumstances permit. This is by invitation of the Société-le-Pau Fox-Hunt, and after the run the *chauffeurs* will be entertained at lunch by Mr. W. K. Thorn, the president of the Béarnais Automobile Club. To-morrow the automobile exhibition will open its doors, and doubtless all Pau will gather together to see the collection of racing and touring vehicles. On Sunday the event of the meet is set down for decision, viz., the race known as the "Circuit du Sud-Ouest," and which will be decided over a route of 335 kilomètres, or 209 miles. The itinerary is Pau, Tarbes, Aire, Dax, Bayonne, and Pau, and prizes to the value of £320 will be offered. The competitors for this race are: - Cars: Etienne Giraud, 16 h.p.; René de Knyff, 16 h.p.; Gilles Hourgières, 12 h.p.; Bozon de Périgord, 12 h.p.; Loraine Barrow, 12 h.p.; F. Charron, 12 h.p.; L. Girardot, 12 h.p.; Pascault, 15 h.p.; Secrestat, 12 h.p. Motor-cycles: Marcellin, 5-6 h.p.; Gasté, 4½ h.p.; Becomais, 5-6 h.p.; V. Rigal, 5-6 h.p.; Baras; Osmont, 4 h.p.; Bertin, 4 h.p.; Magendie; George, 3 h.p.; A. Martin, 4 h.p.; Villemain, Delisle, Labadie and Poujardieu. By special permission of the Sportive Commission of the Automobile Club of France an amateur category will be run off in this event, under which classification Guillemin, Meyer, Cornier, and other well-known *chauffeurs* will compete. It will be noted that the cars employed are similarly powered to those used in last year's events—indeed, many of them are the identical vehicles which were racing last season. The new racing cars will probably not be seen for three months to come. On the other hand, several of the new high-powered cycles are set down as competitors, and we may look for some startling performances at the very outset of the season. During the concluding days of the meet festivities of all kinds will be indulged in, and the good people of Pau and the visitors to the town will be regaled with automobile gymkanas, races, and floral fêtes galore.

#### The Catalogue Race.

FAVoured with the first day of fine weather that Paris has enjoyed for some time past, the opening automobile race of the many which will take place this year in the neighbourhood of the capital was decided on Sunday last. To celebrate the event, and attracted by the brightness of the day after a couple of weeks' intermittent rain, a goodly gathering of automobile men put in an appearance, and I noticed among the crowd MM. Mors, Vinet, René de Knyff, Koch, Gleizes, Levegh, Charron, Doriod, Huillier, Longuemare, de Talleyrand-Périgord, Baron Henri de Rothschild, not to mention other well-known *chauffeurs*. The course which we had assembled to see decided was called by its organiser, Monsieur Meyan, "La Course du Catalogue," by reason of the system of classification, which has for its object the bringing together of similarly priced motor-vehicles. A glance at the categories into which the competitors were divided at once reveals the nature of the plan and origin of the title of the race. It is, and always has been, a matter of difficulty to place competitors on an equal footing, as witnessed by the various classifications adopted by race promoters. Sometimes the question is made a matter of horse-power, sometimes one of weight, occasionally it is based on the number of seats possessed by the competing vehicles, while some organisers of races have made a *mélange* of all three systems. Monsieur Meyan's scheme, in common with the classification by horse-power, depends upon the honesty of the firm entering a vehicle for its success. The number of seats possessed by a car can be seen at a glance, the weight of a vehicle can be readily verified, but when the questions of horse-power and price are raised, verification becomes infinitely more difficult, if not almost impossible. Lengthy tests would be necessary in the first case, an expensive process for the race promoters to carry out, and one to which the competitor would strongly object, and the solution of the second difficulty could only be attained by insisting upon the manufacturer selling the competing car to any would-be purchaser at the listed price, a stipulation manifestly unfair to the constructor. On the other hand, without some such ruling as the latter, nothing can prevent a manufacturer from building a specially well-constructed car

for racing purposes and entering it as his ordinary catalogued vehicle. The question for the moment therefore resolves itself into one of the constructor's honesty, and in the event decided on Sunday last there is no reason to doubt that the organiser's trust was misplaced. But to get to the race itself. The route was a circular one, starting and finishing at Melun, the towns passed on the journey being Nangis and Valence. The smallest cars, that is those priced at less than £120, covered the route once, a distance of 72 kilomètres (45 miles), but all the other vehicles were required to make a couple of rounds, or 90 miles in all. Upon ranging up for the start it was found that twenty-five competitors answered to their names, and exactly at 9.45 a.m. the first batch of racers was despatched by Monsieur René de Knyff. The other categories were sent off at about one minute intervals, so that by 9.52 a.m. the last section was speeding down the road. The first competitors, as a class, to finish their task were the smallest, or rather the cheapest *voiturettes*, for they had to cover but half the distance made by the more costly vehicles. They acquitted themselves nobly over the heavy and muddy roads, and every one of the six starters finished the course in excellent time. They were placed in the following order: Category 1 (cars priced at less than £120)—1, Mercier in 2h. 34min. 49sec.; 2, Mourier in 2h. 38min. 41sec.; 3, Demester in 2h. 42min. 11sec.; 4, Biguet in 3h. 3min. 27sec.; 5, Hix in 3h. 20min. 26sec.; 6, Thierry in 3h. 46min. 47sec. The first three *chauffeurs* were driving Gladiator *voiturettes* fitted with Aster motors. The second category, comprising cars priced from £120 to £240, brought out six competitors, of which four passed the judge at the finish. These four and their respective times were: 1, De la Roëre in 4h. 31min. 45sec.; 2, George Richard in 5h. 1min. 30sec.; 3, Chaix in 5h. 4min. 37sec.; 4, De Roberval in 5h. 5min. 5sec. Of the seven starters in the third category, cars catalogued at from £240 to £360 each, four accomplished the journey, these being: 1, Creux in 4h. 17min. 22sec.; 2, Baras in 5h. 28min. 43sec.; 3, M. Richard in 5h. 35min. 19sec.; 4, G. Richard in 5h. 40min. Only MM. Cuénod, Ply and Michon drove cars costing from £360 to £480 each, and of these M. Michon's mount was the sole representative at the finish, accomplishing the distance in 4h. 49min. 7sec. The class for vehicles priced at from £480 to £600 brought out M. Léon Lefebvre only, who, in covering the 144 kilomètres in 3h. 19min. 37sec., made the second fastest time of the race. The last category, cars costing more than £600, was represented by MM. Girardot and Degrais, who both finished, their respective times being 2h. 52min. 2sec. and 4h. 6min. 38sec. It will be seen that M. Girardot on a 12-h.p. Panhard made the fastest time recorded in the race, and had he been at all pressed he could doubtless have done considerably better. As it was he averaged about 31 miles per hour. The first race of the year has therefore been brought to a happy conclusion, and it augurs well for the success of the future courses.

THE Plass Motor-Wagon Company has been incorporated at Pierre, S.D., U.S.A., with a capital of £1,000,000.

EFFORTS are being made in Germany to form a Brunswick Automobile Club for the benefit of automobilists in the Duchy.

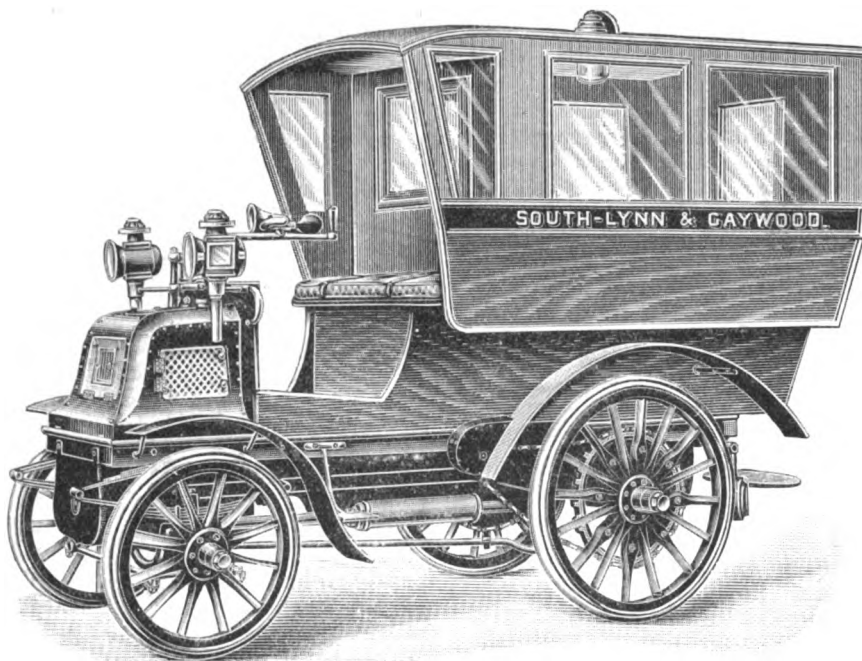
WE learn that the Motor Manufacturing Company, Limited, have decided to take up the manufacture of the De Dion water-cooled 3 h.p. motor, and are now busily engaged on the construction of the same.

MESSRS. A. SCHUBERT, Limited, Central Palace, Stockholm, Sweden, write us that they desire to get into touch with manufacturers of small steam engines and flash and tubular boilers, kerosene burners, etc., suitable for motor-vehicles and launches.

THE following gentlemen have been elected to membership of the Automobile Club:—Colonel Challoner Knox, and Messrs. W. J. Peall, Harry Lupton, C. H. Gilbert, G. P. Dawson, Walter S. Armitage, F.R.C.S., C. W. Mitchell, C. E. Curtis, M.R.C.S., Percy S. Cradock, J. J. Robertson, Francis de Courcy Beamish, W. H. Mayo, John H. Pease, Arthur Firth, Lionel A. T. Johnson, Frederick Brown, Paul Brodtmann, F. A. Rodewald, Hugo Hirst, M.Inst.E.E., H. F. Englehardt, John Ware, Oliver L. Atkins, Herbert Austin, and John R. Davies.

## THE MORRISS MOTOR-OMNIBUS.

ONE of the most enterprising firms in the Eastern counties is undoubtedly that of Mr. Frank Morriss of the Motor and Cycle Works, London Road, King's Lynn. As mentioned in a recent issue of this journal, the latest venture of this gentleman is the establishment of a regular motor-omnibus service in the town—from South Gates to Gaywood. We are this week able to give an illustration of the vehicle which has been built by Mr. Morriss in his own works for this service, from which it will be seen that the 'bus has quite an attractive appearance. One noticeable feature of it is the protection afforded to the driver, the roof having been continued beyond the body of the vehicle to cover the "box," the sides of which are also enclosed. The propelling power is a  $5\frac{1}{2}$  h.p. Daimler motor mounted on a Daimler standard frame. The car is geared to a maximum of twelve miles per hour, and the body is mounted on hanging springs, and rides very easily. The vehicle is licensed to carry ten passengers—eight inside and two on the box; and their comfort has been well studied, the inside being nicely upholstered; there is also the novelty of a roof oil-lamp (of the type of those found in railway carriages) and a lever clock, while an electric bell affords communication between the conductor and the driver. The 'bus is timed to leave the South Gates every hour, commencing at 9 a.m., allowing twenty-seven minutes to arrive at Gaywood. There is a three-minute stoppage, and each hour, commencing at 9.30 a.m., the 'bus will travel from Gaywood to the South Gates. The fares are a penny from one stopping-place to the other, or twopence from the South Gates to Gaywood, or *vice versa*. Mr. Morriss informs us that he can supply these 'buses either complete with motor and frame or the bodies separately for fitting to customers' own frames.



THE MORRISS MOTOR-OMNIBUS.

At a meeting of the Bournemouth Town Council last week, the Town Clerk was instructed to write to the secretaries of the omnibus companies and the proprietors of the motor-omnibuses suggesting a meeting to prepare and submit a joint time table.

MESSRS. CLAYTON AND SHUTTLEWORTH, of Lincoln, have lately turned out a new road locomotive to undertake long journeys. The water carried is sufficient for a run of about ten miles with full load. There is a footboard running the full length of the boiler barrel, which allows the driver to have access to all moving parts without dismounting. There are two speeds, the "fast" being four to five miles an hour, and the "slow" two to three miles an hour. The driving wheels are 6ft. 6in. in diameter, and have a width of 1 ft. 6in. The working steam pressure is 150lbs., the cylinder is 9in. in diameter and 12in. stroke, and the flywheel is 4ft. 6in. in diameter. The fire-box is of the ordinary locomotive type adapted for burning coal. This engine has undergone a somewhat severe road test. This was the hauling of a load of thirty tons, made up of a 25-horse portable engine filled with water and a trolley loaded with pig-iron, up Canwick Hill, near Lincoln. This hill is long, and for some distance the gradient is as much as 1 in 9. The test was in every way successful, as also have been the brake trials and fast-gear runs with the engine over uneven ground.

## CORRESPONDENCE.

## A NEW VARIABLE SPEED-GEAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—May I call Mr. Brownlow's attention to my article on "Oil Engines and Motor-Cars" in *The Engineer* of January 12 last; he will there find a full reply to his query.

It would be interesting if Mr. Brownlow would furnish full particulars of the gear to which he refers.

Yours faithfully,

February 20, 1900.

ANTHONY G. NEW.

## THE POPULARISATION OF THE MOTOR-CAR.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—In view of the great increase of motor-cars of all descriptions and prices, and also the great success they have undoubtedly won for themselves, it seems strange to me, who really know very little about it, that they are not more generally adopted. The materials of which the majority of cars are constructed are excellent. The ease with which they are steered and managed leave nothing to be desired. The one great obstacle to their general success, so far as numbers are concerned, is the great price which one has to pay for a really reliable car. Once one is able to purchase a really decent car for, say, £50, then their general success will be an accomplished fact. Until this is done they will continue to be used by the wealthy, or for public services, and by all those who can afford to lay down a good lump sum for their purchase. I firmly believe that the success of the motor-car movement depends upon the price laid upon these vehicles. Doubtless time and experience will enable the makers to turn out a respectable car for the above-mentioned price. This will give the keynote

to their universal adoption in the traffic of the future.

Yours truly,

GOODWIN D. JENKINS.

Edwyn Ralph Rectory, Bromyard, Herefordshire.

February 19th, 1900.

[We quite agree with our correspondent that the reduction of the price of motor-cars to £50 would be regarded as a boon; but cannot hold out any hope of such a cheapening during the coming century. Before manufacturers make any developments towards the reduction of price their efforts must be in the direction of higher efficiency. This they are doing, and until they reach a point as near perfection as possible they will be well advised not to excite public hope by putting cheaper cars upon the market.—ED. M.-C. J.]

THE Road Records Association decided, at its meeting last week, that claims to cycle records "made wholly or in part with the aid of automobiles" shall in future not be considered. The step is one which will be hailed with satisfaction by automobilists especially by those in Lincolnshire, Huntingdonshire, and Bedfordshire, who have not yet recovered from the effects of Goodwin's motor-paced ride last year.

## AUTOMOBILES AND THE POSTAL SERVICE.



BY PERRY S. HEATH (U.S. First Assistant Postmaster-General).

AS the main object of the U.S. Post-office Department is to provide for the safe and prompt transmission and delivery of mail matter, and as the officials who are entrusted with the administration of this important branch of the public service, as well as the legislators who provide for its maintenance, desire that it shall be conducted on strictly business principles, the different bureaus of the Department are constantly considering new inventions and devices which may prove of value, either by increasing the efficiency or diminishing the cost of the service.

The appearance on the streets of our cities of motor-driven vehicles, and their employment by business establishments as delivery wagons, has suggested their use for the collection of mail from street letter boxes. The subject has been brought to the attention of the Department, not only by manufacturers and

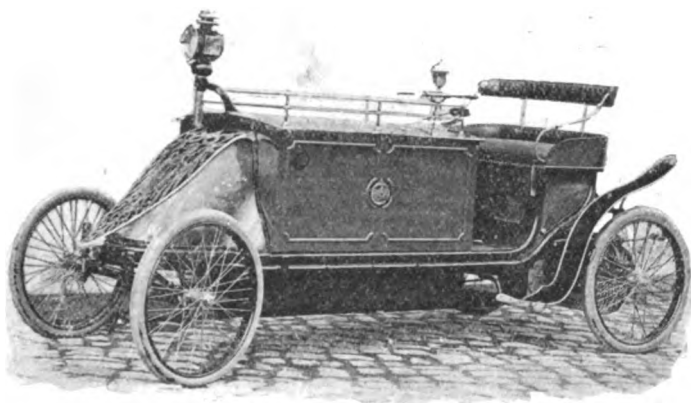


FIG. 1.—GENERAL VIEW OF LOUTZKY PARCELS POST CAR.

agents, who desire to further their own interests, but also by postmasters, who believe that this new departure in locomotion will aid them in solving one of the most difficult problems which the free delivery service in large cities presents—that is, the improvement of the collection service by providing for more frequent collections of mails from street letter boxes, and for more prompt and rapid transmission to post-offices and stations. This service is now performed by letter-carriers, and is costing the U.S. Government over four hundred thousand dollars (£80,000) annually for horse hire and contract wagon service, in addition to the salaries of the carriers.

Practical tests made in some of the larger free delivery cities have proved the adaptability of the automobiles for this work, but these tests were made in Buffalo, Washington, Detroit, and other cities where the streets are smooth, the boxes well placed, and all the conditions most favourable. The substitution of the automobile for the horse and wagon, and the introduction of a new collection system, would necessarily involve many radical changes in a service which is now thoroughly organised and giving general satisfaction, and the Department, while aiming to keep abreast of the most progressive business interests, would not be justified in making such changes until experience has proven the utility of the new style of vehicle under all existing conditions. Several manufacturers are now working on plans for automobiles, to be used exclusively in the postal service. Every facility will be afforded them for testing these vehicles when completed, and it is believed that it will not be long before the inventive genius which has given us the horseless carriage will have overcome all difficulties. The Post Office Department will then be able to employ vehicles built to travel over all kinds of roads, in all kinds of weather, and vastly superior, as regards safety and speed, to the wagons and carts drawn by horses now used in the free-delivery service.

The employment of the automobile in the collection and

distribution of mail matter was one of the first uses which suggested itself, when the possibilities of the motor-vehicle for public service began to be considered. Certainly in no other single field does it hold out greater probabilities of benefit to the whole people. Travelling at a considerably greater speed than the street cars, and enabled to reach points by far more direct routes and without numerous delays, the advantages which the vehicles possess for city postal service are readily apparent. On the other hand, with rural free delivery likely to ere long become an established fact in all the more densely populated sections of America, it may be seen also that by the utilisation of the new motive facilities the residents of our farms will in many cases be enabled to enjoy almost as many opportunities for quick communication as their city cousins.

The use of the automobile for postal service in Germany and France has long since passed the experimental stage. The Post Office authorities of Berlin some time ago put into practical use six of the Loutzky automobiles (Fig. 1), and so successful was the experiment that a large additional number of the vehicles were soon after ordered from the manufacturers. The experiment in Berlin so completely demonstrated the efficiency of the motor-vehicle for the work that a number of the other large cities in Germany and all its possessions immediately began preparations to introduce the system. The French Government is not only regularly making use of automobiles for the transportation of the mails in Paris and other large cities, but has recently ordered fifty heavy wagons, each equipped with 9-h.p. petrol engines, for the purpose of carrying mails in the Soudan.

The initial introduction of the automobile in postal service in America was made some months ago in Buffalo, N.Y. The vehicle used was an electric phaeton of about one ton weight, manufactured by the Pope Manufacturing Company. As a speed trial a four mile run from the main office to a sub-station was made in nineteen minutes, and the return trip occupied but eighteen minutes. During the collection trial the route covered was the same, and mail was collected from twenty-two regulation boxes and eight package boxes—a total of 150 pounds—in thirty-three minutes.

This practical test of the adaptability of the automobile for the work of collecting mails from street letter-boxes was made at Buffalo, under the auspices of the Department, and the result, so far as related to that city and its superb streets, was entirely



FIG. 2.—A WINTON MOTOR-VAN USED BY THE POSTAL AUTHORITIES AT CLEVELAND.

satisfactory. The experiment leads to the conclusion that valuable improvements for the collection branch of this service are in store through this departure in locomotion, limited at present by requisite conditions, which seems to demand asphalt or other smooth pavements.

The first automobile to be manufactured especially for mail collection service was one constructed by the Winton Motor

Vehicle Company, of Cleveland, and is herewith illustrated (Fig. 2). The test of this vehicle recently made in Cleveland was entirely successful, and was all the more remarkable from the fact that it took place during a severe snow-storm and under about the most unfavourable conditions imaginable. The test was made over a twenty-two mile route, and mail was collected from 120 boxes. Under ordinary conditions a collector with horse and wagon can cover this route in exactly six hours, but even under the unfavourable conditions noted the automobile performed the work in two hours and twenty-seven minutes.

In speaking of the trial Postmaster Dewston, of Cleveland, said: "The test was a very severe one, on account of the snow-storm, but the result was most satisfactory. Comparing the time taken in covering the route with the time required by horse and wagon the test speaks highly in favour of the use of automobiles in the collection of mail in Cleveland now, and the test shows that the work could be done with five automobiles. The Post Office Department is much interested in the automobile, and I think that it is only a question of time when it will be adopted."

In a recent letter to Waldon Fawcett, of Cleveland, Postmaster Dickerson of Detroit, who is one of the most progressive officials in the service of the country, says: "About sixty days ago a three-wheeled affair appeared in front of our office, and out of curiosity we tested it. We have one carrier's route that takes two hours and thirteen minutes to cover. We put the carrier on this three-wheeled vehicle, and all the boxes within that route were emptied, the entire route covered, and all mail collected in one hour and eight minutes, and to my mind this article came the nearest to what postmasters want for collection of mail from boxes of anything I have yet seen."

A similar vehicle for postal purposes is the Plass automobile, the designs for which have been favourably considered by Postmaster Wilson, of Brooklyn, who was authorized to test postal automobiles. Another vehicle which was thoroughly tested by Postmaster Wilson, of Brooklyn, was the Locomobile Company's steam "runabout" pictured in Fig 3.

After subjecting this vehicle to a series of searching tests, Postmaster Wilson declared himself amply satisfied with its practical qualities.

While still engaged in these tests Postmaster Wilson expressed himself as follows: "The more I go into this matter the more convinced I become that the use of automobiles is practicable. We now pay sixpence per mile for all mail carried. Our service in Brooklyn costs about £12 a day. I understand that the automobiles can be operated at about three-eighths of a penny per mile. But figuring it out at the highest figures yet received, I can see a clear gain of about £5 a day, from which the interest on the investment can be paid and furnish a fund for repairs and leave a large surplus. It now costs the Brooklyn office £14,400 a year to handle the mails. We pay £3,200 a year for the electric cars, £800 for the carrying of the closed pouches on the ordinary cars, £2,000 for car tickets, £5,600 for the wagon collections, and £2,800 for the railway mail service. As I figure it out we can make a saving of fully 25 per cent. of this amount and also establish our own plant. We would require about eight wagons for station work, six heavier wagons for the railway service, and about thirty light wagons for the collections. These wagons in the hands of our own men, who can soon become competent in the service, will add probably 25 per cent. to the efficiency of the service and make the office independent of accidents. The railroad people have had a good thing out of this service, even aside from the money they receive, for they have the assurance in times of strife of having their lines kept open by the United States mails. Why, I have heard railroad people say that it would be a good thing to have the mails go over their roads without charge to have the assurance that their lines would not be interfered with. I believe that Brooklyn will be the first office to adopt this system. In any event, the whole question will be inquired into very carefully."

The postmaster of Boston said: "I believe that the automobile would be of great benefit, and could be utilised to much advantage in the mounted carrier service." Postmaster Samuel G. Dorr, of Buffalo, states that he expects ere long to have automobiles in constant use for mail collection in that city. Already,

in Buffalo, mail is being carried in an electric trap from the post-office to Station D, a distance of four miles, in eighteen minutes. Thirty mail boxes in that distance are tapped, and the trip is made in thirty-three minutes. In this trip 150 pounds of mail are collected.

At Baltimore a test was made with a steam carriage, the inventor of which achieved a speed of thirty miles an hour. In Washington an electric wagon was used, and tests were made with various other motors. In Chicago several tests have been made in the collection districts, and the showing was so creditable that the Second Assistant Postmaster-General has called for bids for a permanent automobile service for the conveyance of mails and supplies between the general post-office and certain downtown stations. No contracts, however, have as yet been awarded.



FIG. 3.—A STEAM LOCOMOBILE CO.'S STEAM-CAR USED BY THE POSTAL AUTHORITIES AT BROOKLYN.

An objection was originally raised to the employment of automobiles for postal service between main offices and sub-stations which was based on the claim that the employment of the automobile would make it difficult, if not impossible, to sort mail *en route*. Automobile manufacturers have, however, demonstrated to the satisfaction of the post-office officials that they can construct auto-cars in which this work can be done quite as easily and expeditiously as on the mail cars now in service on the street railways in many of the larger cities.

Mention has been made above of the automobile postal cars employed by the French Government in the Soudan. These cars, let it be understood, are post coaches intended for passenger service rather than mail delivery waggon. The British Colonial Government, on the other hand, has taken steps to introduce automobile mail waggons in the true sense in some of the most distant Crown colonies, a steam waggon built by the Lancashire Steam Motor Co., of Leyland, being now used in the postal service in Ceylon. It is constructed to carry one ton of mail matter, and will average ten miles an hour on fair roads. This car was put through a long and severe series of tests before it was allowed to be despatched to its destination. Thus it may be seen that the rule of the white man over other less developed races does indeed confer upon them some of the latest and most admirable products of civilisation.—*The Automobile Magazine*.

A THREE-MILE motor race is included in the programme of the Birmingham Theatrical Charity Sports for March 7th. The events will be held on the Aston track.

WE understand that the Daimler Motor Company, Limited, are building one of the "Parisian" cars to the order of Mr. C. Johnson, the well-known Secretary of the Automobile Club.

## THE MORS MOTOR-CARRIAGE.—VII.

By "VELOX."

(Continued from page 763.)

## THE TRANSMISSION GEAR.

**D**EFERRING, for the moment, the provision of an effective key plan showing the correct method of leading and identifying the various electrical conductors, the transmission gear employed by the Société Mors next claims attention. As has been remarked in previous sections, the transmission of power is primarily by means of belts; by this means power is transmitted from the motor shaft to an intermediary shaft, and from thence by chains through sprocket pinions and wheels to the rear road wheels.

The crank shaft of the engine is prolonged outside the crank chamber and carries besides the fly-wheel of the engine a large and a small pulley, both keyed to the shaft. The high and low speed respectively is passed by means of belts to corresponding

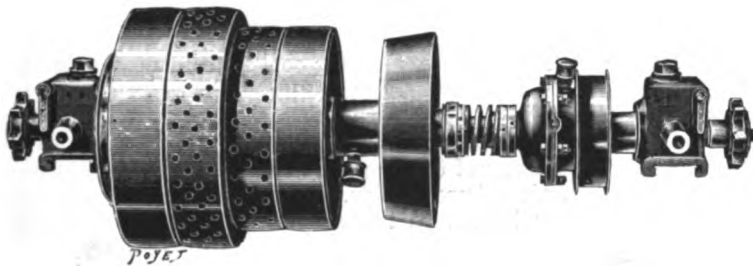


FIG. 20.

pulleys on the intermediary shaft, a reduction in speed being effected by means of the variation in size of these transmitting and receiving pulleys. The crank shaft and its transmitting pulleys are, therefore, quite simple in character, and it is not until the belt connecting it to the intermediary shaft is followed that any complications are met with. The intermediary shaft with its various parts and adjuncts appears at first view rather complex, but close investigation will certainly tend to dissipate any opinion of its excessive intricacy.

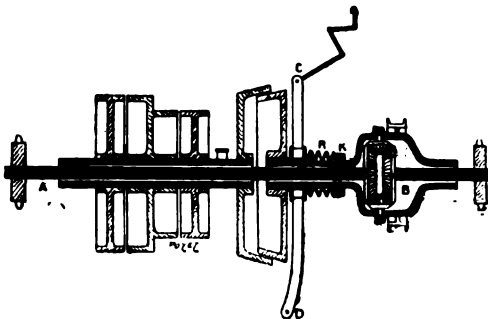


FIG. 21.

In order to assist in close investigation, a general view of the intermediary shaft and its parts is given in Fig. 20, whilst as a further aid to analysis of its integral parts a diagrammatic view of the whole of the appliance is given in Fig. 21, which shows the shaft, etc., in section. In examining Fig. 21 it will be noticed that at each extremity of the central shaft *AB* a chain sprocket is carried; it is by these sprockets that power is ultimately transmitted to the road wheels. It will also be seen that this central shaft *AB* is formed of two portions, each bearing a bevel wheel engaging with bevel pinions, and thus forming the differential gear. The two bevel pinions are mounted on axles carried in the enlarged portion of the broken outer shaft, or sleeve, covering the central shaft *AB*, and which is utilised to enclose the whole of the differential gear.

Attention must next be directed to the compound hollow shaft or sleeve with its attachments (Fig. 21). Taking first that portion having the enlarged part enclosing the differential gears, we find that this portion carries at its left-hand extremity the male portion of the friction clutch, which is employed to prevent or

permit any power transmitted to the other (left-hand) portion of the hollow shaft or sleeve being communicated to the internal shaft *AB*. The male portion of this cone is normally kept in contact with the female portion carried on the left-hand portion

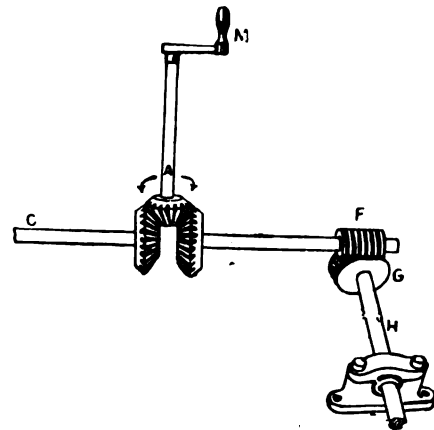


FIG. 22.

of the hollow shaft by means of the compressive powers of the spring *B*. The power of this spring can be adjusted by means of the screw collar *K*, the adjustment being carried out by means of a "tommy" of the ordinary type. This collar is kept in the required position by means of a lock-nut which can be more plainly seen in Fig. 20 than in Fig. 21. The male portion is moved from contact with the female portion of the friction clutch by means of the lever *C D*, which engages with a grooved collar attached to the male portion; this lever is mobile at *C*, moving on its axis at *D*, and the movement of the collar and cone overcomes the power of the spring which normally retains the cone in engagement. The only remaining appliance to be noticed on the right-hand portion of the hollow shaft or sleeve is the hand-brake drum which surrounds, and is fast to, the enlarged portion of the shaft which carries the differential pinions, and encloses the whole of the differential gear.

It now remains to deal with the left-hand portion of the hollow shaft or sleeve. On the right-hand end of this is carried the female portion of the friction clutch, as well as the two pairs of fast and loose pulleys forming the high and low speed belt drums. The pulley next to the left of the female portion of the friction clutch revolves freely on the hollow shaft, and forms the "loose pulley" of the low-speed gear. Next in order is a pulley of the same diameter as the last, but in this case it is affixed to the hollow shaft, and thus forms the "fast pulley" of the low-speed gear. Next in order is a pulley of larger diameter, which is in fact made solid with the last mentioned pulley; this is keyed to the hollow sleeve, and forms the "fast pulley" of the high-

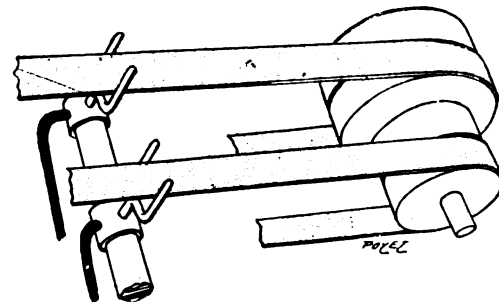


FIG. 23.

speed gear. Lastly, a fourth pulley will be noticed of the same diameter as that last described; this revolves freely on the hollow shaft and forms the "loose pulley" of the high-speed gear. It will be noticed that the faces of both of the two "fast pulleys" are pierced with holes (Fig. 20); this is done in order to give the belts a greater adhesion to the pulleys.

The method of attaching the shaft *AB* with its surrounding sleeve and various parts to the frame of the vehicle in ingenious,



and extremely satisfactory. Each side of the frame is provided with a pair of slings, and from these the bearing boxes shown at each end of Fig. 20 (adjoining the chain sprockets) are slung. These bearing boxes are in fact oil tanks, and the shaft is thus carried at each end in an oil bath. By this means extremely long distances can be negotiated without the necessity of constantly attending to the lubrication of this shaft and its bearings.

#### TENSION OF THE BELTS.

In all motor-cars in which the power of the engine is transmitted by belts it becomes necessary to provide means of adjusting the tension of the belts themselves. Belts are of a necessity composed of materials which are more or less affected by climatic influences, and are also liable to extension by continued tensions and the transmission of power. It is important, therefore, that efficient means be provided for easily taking up any slackness, or releasing the tension when necessary. The appliance employed in the Mors carriage is therefore illustrated in Fig. 22. Before describing this appliance and its action, however, it may be remarked that the tension of the low-speed belt should always be greater than that of the high-speed belt. It may also be remarked that either when the carriage is at a stand-still, or when it is actually travelling, the tension of the belts can be slackened or increased by sliding the hangers or slings carrying the intermediary shaft either backward or forward on the frame of the carriage. This adjustment is carried out by the appliance illustrated in Fig. 22.

A cranked handle *M* will be found at knee height on the left-hand side of the driver, almost under his left leg. This is fixed to a vertical shaft *A* bearing at its other end a bevel pinion engaging with two bevel wheels carried on the extremities of the two shafts *C* and *D*. To facilitate reference only the shaft *D* is shown complete in Fig. 22. The shafts *C* and *D* carry at their other extremities a worm or endless screw *F*, engaging with helicoidal gear wheels *G*, carried on the shaft *H*. When the crank *M* is moved from left to right, or from right to left, the movement is transmitted by the bevel-wheels to the shafts *C* and *D*, and from them by the worm *F* and the worm-wheel *G* to the shaft *H*. This latter shaft is provided with a screw thread at its end, and its bearing in fact becomes its "nut." As a rotary movement is given to the shaft *H* it follows that its bearing or "nut" is made to travel either in a forward or backward direction. As this bearing is made to slide on the side frame of the carriage, and carries moreover the hangers or slings carrying the intermediary shaft, it follows that as its movement is in a forward or backward direction so the belts are tightened or slackened. As this movement is transmitted by one pinion it follows that the bearing on both sides of the frame must move in perfect harmony and quite synchronously.

#### SPEED CHANGING DEVICE.

In Fig. 23 is illustrated the speed changing or belt shifting. It will be seen that the appliance consists of two forks, each separately mounted in collars capable of sliding on a cylindrical shaft. The movement of these forks from the right to the left or from left to right carries the respective belts from their fast to their loose pulleys and *vice versa*. The necessary movement is transmitted by levers from two independent hand levers placed on the steering pillar immediately under the handle bar, as mentioned in a previous section of these articles.

(To be continued.)

SOME trials with motor-omnibuses were carried out at Budapest recently before a committee of the Municipal authorities, but so far no licences for the running of these cars in the streets of the city have been granted.

WE hear that Mr. Moffat Ford has challenged the holder of the Crystal Palace Brassard Cup to a motor-tricycle race. We understand that Mr. Ford intends to ride a machine fitted with a motor of his own design and manufacture.

THE title of the Motor-Vehicle Company has been changed to the Motor-Power Company, Limited, in consequence of the former name being already in use by a small Birmingham company. The latter title has now been registered at Somerset House, Messrs. Harvey du Cros and S. F. Edge continuing in control of the business.

## THE JULIEN WATER-COOLER.

A SOMEWHAT novel form of *refroidisseur*, or water-cooler, has lately been devised by M. Julien and introduced by M. G. Benoit, of 119, Rue St. Maur, Paris. The apparatus (Fig. 1) consists of a wide, flat tube, coiled up in spiral form, through which the water to be cooled is circulated by a pump. The spiral tube is 3 mm. in diameter, while the surface area is about  $1\frac{1}{2}$  square metres. The walls of the tube are only half a

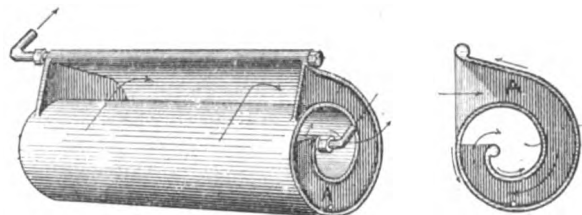


FIG. 1.

millimetre in thickness, so that the cool air which enters at the opening *A* acts on a very large surface. The cooling power of this apparatus permits, the maker claims, the capacity of the water reservoir to be materially reduced. The device can be placed at the front or at the rear of the frame of the car (Fig. 2), the mouth *A* facing the direction of progression. Cool air thus rushes through this aperture, and emerges through lateral holes, after having

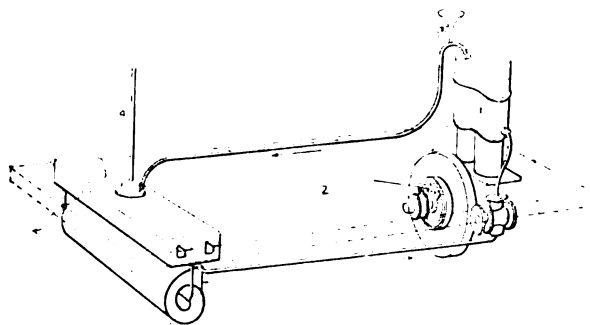


FIG. 2.

been in contact with the whole of the internal surface; the external face is equally acted upon by the air, the efficiency of the device being thus increased. Dust and dirt, it is claimed, do not adhere to the internal surface; provision is, however, made to wash out the apparatus, the water passing out through small holes in the lower part of the side pieces, by means of which the cooler is held in position. The weight of the device is given as 23 lbs.

THE Baker Motor-Vehicle Company has been organised at Cleveland, U.S.A., to build electric carriages.

It is said that Messrs. Lemaitre and Ravenex, members of the French Automobile Club, will take part in a portion of the 1,000-mile trial.

THE next House Dinner of the Automobile Club is to be held on Wednesday, March 14th, when Mr. H. Sturmev will read a paper on "The Automobile of To-day in Europe and America."

MR. FRANK BUTLER has just effected an insurance policy with the Horse, Carriage, and General Insurance Company, Limited, whereby by payment of a premium of £10 he has obtained a £500 third party free policy with £75 to cover damage to his motor-carriage.

THE Committee of the Automobile Club have decided to issue certificates to all paid drivers of motor-vehicles who may successfully drive vehicles throughout the 1,000-mile Trial. Probably no more valuable certificate of proficiency could be held by a paid driver, and we feel sure that the action of the committee of the Club in this matter will be highly appreciated by the drivers who are to conduct vehicles through the coming Trial.

## THE CANELLO-DURKOPP MOTOR-CARRIAGE.

REFERENCE has already been briefly made in these pages to the motor-vehicles of the Société des Automobiles Canello-Durkopp of Courbevoie, France, and Bielefeld, Germany. Through the courtesy of the builders we are now able to publish some further information and illustrations of these vehicles which, both in appearance and arrangement, resemble very closely the well-known Panhard-Levassor type of automobiles. Notwithstanding this general resemblance, however, the following description indicates that there are many special features in the new cars worthy of close attention. The motor, of 4, 6, or 8 h.p., as desired, is composed of two vertical cylinders, with

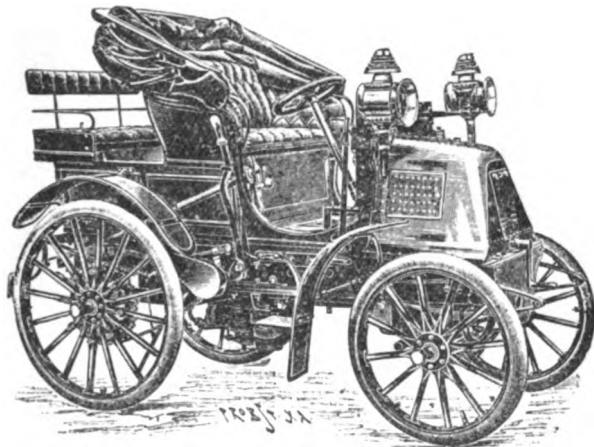


FIG. 1.—GENERAL VIEW OF CANELLO-DURKOPP PHAETON.

incandescent tube ignition. It is placed in the front part of the frame (Fig. 2), and is concealed from view by a sheet iron-bonnet, as in the Panhard cars. Water for cooling is circulated by a thermo-syphon when the power is low and by a pump driven by a friction on the fly-wheel or by a gear on the regulating shaft in the large-sized motors. The inlet valves are automatic, as usual, and the exhaust valves are raised by a cam shaft located in a case and controlled by reduction gears *J*. The sectional view of the motor (Fig. 3) shows that the connecting rods are balanced by a counterweight, *Z*, attached to the motor-shaft *I*, which on the left end has the starting gear 4, and on the right the fly wheel *F*, hollowed out to receive the male portion of the friction clutch, by which means the motor is disconnected from the transmission gear.

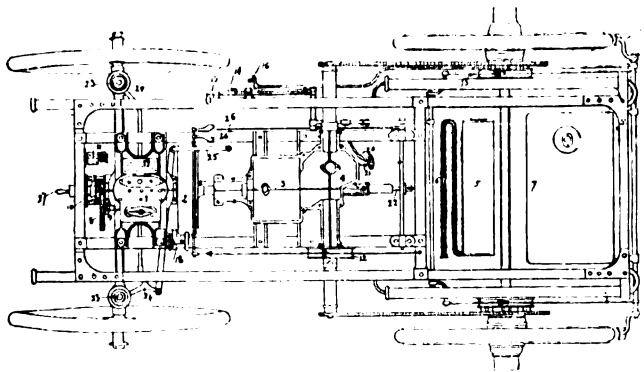


FIG. 2.—PLAN OF CAR.

The method of controlling the valves by cams and the governor is represented in Fig. 4. *M* is the motor-pinion engaging with the wheel *L*, attached to the cam shaft *A*. This shaft slides in the bearing *E E'*, which are fastened to the shaft by means of the keys *R*, allowing it to slide in these bearings, but forcing it when it turns to carry with it the bearings *P*, movable in the bearings *O*, the latter being fixed to special supports. The pinion *M* is of sufficient width that whatever the displacement of the shaft *A* it is always in gear with the wheel *L*. It will be seen that the shaft *A* carries the

cams *B* and *B'*, provided with projections *b* and *b'*, of eccentric form, which act upon the rollers *C* and *C'*, attached to the ends of rods *D* and *D'*, which control the exhaust valves. The position represented in Fig. 4, corresponds to the moment when the roller *C*, being in full contact with the projection *b*, the corresponding valve is wide open, the valve controlled by the rod *D'* being closed. A centrifugal ball governor turns with the shaft *A*. If the motor "races" the centrifugal force, overcoming the power of the springs *I'*, will throw out the balls *I*. A force will then be exerted upon the collar *K* tending to move the shaft *A* sufficiently backward to bring the projections *b b'* out of contact with the rollers *C C'*.

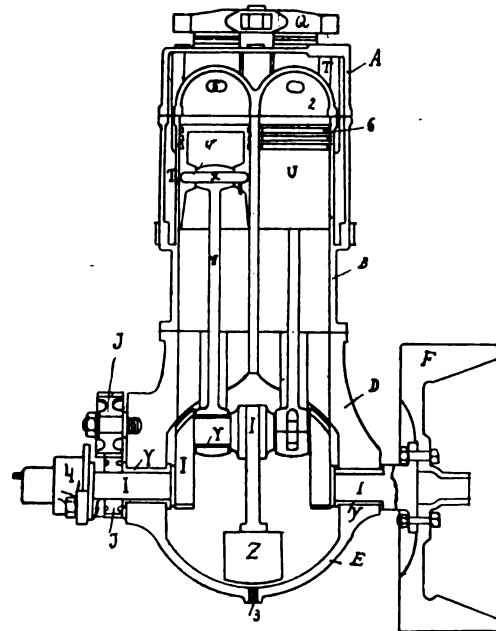


FIG. 3.—SECTIONAL VIEW OF MOTOR.

Consequently the rods *D* and *D'* are no longer raised at each revolution of the shaft *A*, and as the corresponding valves remain closed, the motor will slow down until the spring *I'*, acting upon the governor and upon the shaft *A*, brings the latter to its former position—i.e., brings the eccentric projections *b b'* back into play with the pulleys *C C'*. In order to exceed the fixed maximum speed in certain cases the operator is able by means of the rod *H* controlling the bell crank *G G*, which acts upon a fork in the grooved collar *F F'*, to force the shaft *A* into the normal position.

As has been already stated, the motor is located in front. It is so placed that the motor shaft and the fly wheel are in the longitudinal axis of the vehicle. The burners are located

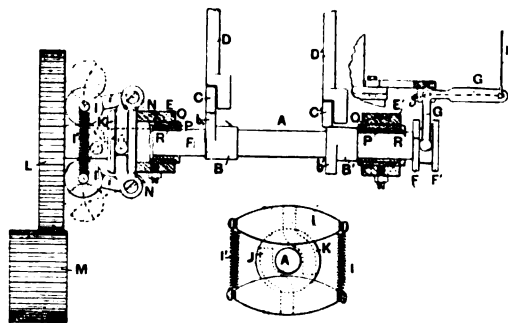


FIG. 4.—EXHAUST-VALVE CONTROL GEAR.

at 19; at 10 and 11 starting gear; at 8 and 9 the regulating gear; at 11 the carburettor. The motor drives a longitudinal shaft through the medium of a friction clutch 2, controlled by the lever 22. The case containing the speed-changing gears is located at 3, while 4 is the case enclosing the differential upon the countershaft which command the rear road wheels by pinions and chains. At 7 is the water tank, holding thirty litres; the petrol tank, having a capacity of twenty-two litres, is in front. 18 is the centrifugal pump for the circulation of the water, while 5 is the muffler, the radiating coil being located below at 6. Four speeds forward and reverse motion are provided. Particulars of the variable speed

gear and of the special steering connections employed in these vehicles will be given in a subsequent issue.

The Canello-Durkopp Company is making a number of different types of cars, Fig 1 showing a 6-h.p. four-seated phaeton. Four brakes are provided: a band brake (12) on the differential shaft, controlled by a foot-pedal (26); two hand brakes (13) on the rear axle, actuated by the handle (15), and tire brakes (17) applied by the screw 16.

In the Board of Trade returns the imports of motor-cycles are now being including with those of ordinary cycles.

THE works of the Maudelvic Motor-Carriage Company, Limited (in liquidation), Granton, N.B., are being advertised for sale as a going concern.

MESSRS. REY AND COMPANY is the style of a new firm which has just been formed in Paris (50 bis Avenue de la Grande Armée) to introduce a new carburettor known as the Roubeau.

THE winding up of the Société des Transports Automobiles de Chalon-sur-Saône and of the Société de Transports Automobiles dans la Haute-Saône et Extensions, both of Paris, is announced.

LA SOCIÉTÉ DES CYCLES ET AUTOMOBILES (système Schaudel) is the style of a new company which has just been formed in Bordeaux (50, Rue de Turenne) with a capital of £5,400.

In connection with the City and Guilds of London Institute, Leonard Street, City Road, E.C., a special course of six lectures on "Petroleum: Its Production and Treatment," is being delivered by Dr. Paul Dvorkovitz. The first lecture was given on Wednesday last.

WE have received from Messrs. Rentell and Co., Ltd., Ludgate Hill, E.C., a copy of the "The Practical Electrician's Pocket Book for 1900." Nicely bound and well printed on good paper, this little work will undoubtedly have a wide circulation. It deals with the various forms of motive power, methods of driving, systems of wiring, distribution of light, measurement of current, etc., three or four pages being devoted to a consideration of motor-cars.

AN American writer remarks that "the engineer who would construct a successful petroleum spirit motor-car machine must carry his researches and experiments far into the fields of chemistry, mechanics, and electricity. The problem of the electric or steam vehicle is simple in comparison. The game, however, is worth the candle. In the opinion of well-informed observers the growth of the impulse motor industry within the next decade will be almost phenomenal."

A DOUBLE chiming automobile-bell has just been put on the market by the Bevin Bros. Mfg. Company, East Hampton, Conn. The bell is especially designed for use on motor-vehicles, and can be attached to any part of the vehicle most conveniently reached by the foot of the operator. It is explained that only a slight depression, about  $\frac{3}{8}$  inch, serves to ring the bell, and for each pressure two loud and distinctly different notes are produced.

AMERICAN automobile builders are preparing to make a most extensive display of their vehicles at the forthcoming Paris Exhibition. One of our transatlantic contemporaries publishes the following list of firms which had secured space up to January 1st last:—American Motor Company, American Electric Vehicle Company, Cleveland Machine Screw Company, Columbia and Electric Vehicle Company, Duryea Manufacturing Company, Indiana Bicycle Company, "Locomobile" Company of America, Lozier Manufacturing Company, Overman Wheel Company, Riker Electrical Vehicle Company, Strathmore Automobile Company, and the United States Motor Vehicle Company.

At the last meeting of the Automobile Club of America the subject of good roads came up for discussion. Addresses were given by Gen. Roy Stone, of Washington; Mr. E. G. Harrison, of the office of Road Inquiry of the Department of Agriculture; Mr. Edward A. Bond, Chief Engineer of New York State; Mr. Henry I. Budd, Commissioner of Public Roads of New Jersey, and Mr. Thomas C. Mendenhall, of the Massachusetts Highway Commission. It was decided to urge upon the State Legislature the importance of making more liberal appropriations for improving the highways.

## A NEW FRENCH STEAM OMNIBUS.

LA Compagnie Nationale des Courriers Automobiles, of 22, Rue Rossini, Paris, have lately constructed a new steam omnibus, of which a general view is given herewith. The car is propelled by a 14-h.p. two-cylinder compound engine, steam for which is supplied by a Thirion tubular inexplorable boiler. The engines are so located under the floor of the car that each cylinder drives one of the rear road wheels through chain gearing. The vehicle has accommodation for fifteen persons,



including the driver, and can, in addition, carry 12 cwt. of luggage or merchandise. The water tank has a capacity of 300 litres, which, states *L'Avenir de l'Automobile*, to whom we are indebted for the illustration, is sufficient for a run of thirty kilomètres. Steering is controlled by a vertical hand wheel, while the driver has three brakes at his command. The wheels, which are of wood with iron tires, are 31½ in. in diameter in front, and 47 in. at the rear. The weight of the bus complete is given as 2 tons 15 cwt.

APPLICATION has been made to the Town Council of Waterford for permission to run a service of motor-cars from Waterford to Dunmore.

MESSRS. ADAMS AND CO., Lowestoft, have sent us a copy of their new price-list, which gives particulars of the Adams petrol motor, as also of a variety of motor-fittings and accessories, such as frames, chains, tires, axles, castings, etc.

WM. H. M. BURGESS, LIMITED, 9, Farringdon Road, London, E.C., write us as follows:—As many people are under the impression that all De Dion engines before No. 9,600 are of 1½ h.p. only, we have gone fully into this matter, and we are advised from Paris that Messrs. De Dion, Bouton and Company, on the introduction of the 2½-h.p. engine, called in those engines of 1½ h.p. bought from them and not sold, and converted them into 2½-h.p. engines, using, however, the same crank cases which were numbered before No. 9,600.

A NECESSARY adjunct to motoring, although oftentimes not held to be one of the pleasantest, is that of cleaning the car or machine, and any article or device intended to facilitate this work is sure to meet with a trial on the part of automobilists, especially motor-tricyclists. Messrs. Leeming Bros., of Bedford Mills, 44, George Street, Salford, Manchester, have this week sent us a small sample of a special cloth they are making for cleaning motor-cars, cycles, etc. The cloths are made of silk, and, although we ourselves have not yet given the cloths a trial, the makers claim them to be unrivalled for the purpose named.

## CONTINENTAL CUSTOMS DUTIES ON AUTOMOBILES.

**A**UTOMOBILISTS who intend making a trip in their cars to the Continent during the coming season will be interested in the following information, taken from the *Automobile Club Notes*, with regard to the Customs duties in several of the Continental countries:—

**FRANCE.**—Customs duties must be paid on arriving in France, but these will be refunded if the stay is temporary, on showing the document given on the introduction of the carriage into the country. The duties in France are, for motor vehicles of European origin—For vehicles weighing 125 kilogrammes or more, 50 francs per 100 kilogrammes, with a minimum of 50 francs. For vehicles weighing less than 125 kilogrammes, 120 francs per 100 kilogrammes, with a minimum of 120 francs. (Note.—50·8 kilogrammes equal 1 cwt., and 1 kilogramme equals 2·2 lbs.)

**NETHERLANDS.**—For a temporary stay, vehicles belonging to members of the Automobile Club of Great Britain are admitted free of duty or from giving any security for these duties, provided no fraudulent attempt be made, and on production of proof of their membership of the club.

**GERMANY.**—On guarantee being given that vehicles are only introduced for temporary travelling, and not for sale, they may be admitted free. If this be not allowed, a deposit must be made, which would be returned on leaving, probably either 8s. per 100 kilogrammes, or £7 10s. for the whole vehicle.

**DENMARK.**—No duties if introduced for temporary stay only.

**AUSTRIA.**—£7 10s. to be deposited, which will be returned on leaving.

**BELGIUM.**—Deposit of 12 per cent., *ad valorem*, must be made, which will be returned if the vehicle is taken out of the country within six months of introduction.

## THE MOTOR TRADES ASSOCIATION.

A COMMITTEE MEETING of the Motor Trades Association was held on the 19th inst. at the Viaduct Hotel, London, Mr. J. H. Gretton in the chair. Several new members were elected, and the question of carriage of motor-car spirit was debated at some length, Mr. Harris, manager of the Anglo-American Oil Company, attending and putting the whole situation very fully and clearly before the committee. As the makers of motor-car spirit very naturally decline to forward goods on the new terms, and as there is at the present moment no other means of forwarding petrol spirit into the country than by rail, it is obvious that this clause, if persisted in by the railway companies, would most seriously hamper the new industry of motor manufacturing, and be the cause of the greatest inconvenience and expense to present private owners of cars and the still larger numbers of people who are on the point of becoming owners of motor-vehicles. The Association has decided to forward a strong protest to the secretary of the Railway Clearing House and the goods manager of each railway company. It is also recommended that everybody owning a car or motor-vehicle of any description should write to the railway goods manager of the railway by which his supplies of motor-car spirit reach him protesting against the unreasonable terms of Clause 2 of the Consignment Note, and pointing out that it will mean most serious inconvenience and possible loss to one of their clients. Already one district in England, viz., the country surrounding Hull, is cut off from the supply of motor-car spirit owing to the local insistence on this Clause, and there is every probability that other districts will be in a like situation, unless energetic steps are taken and local pressure brought to bear.

## FURIOUS DRIVING CASES.

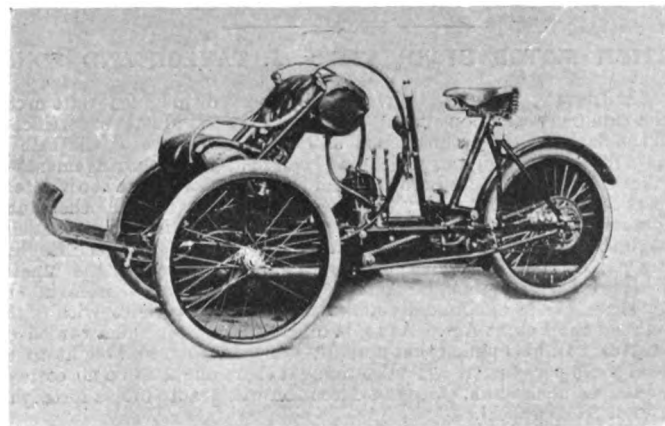
AT the Bournemouth Borough Police Court last week, Mr. William House, a motor-car driver, was summoned for furiously driving a motor-car on February 7th. P.C. Cox said that he saw defendant, who was driving a motor-car, pass a crossing on the top of Boscombe Hill, and run down to a letter box opposite Linden Hall. The distance was 220 yards, and it was covered in 25 seconds, or an average of 15 miles an hour. He timed the distance by a watch he was carrying. When defendant got to the bottom of the hill he stopped him, and asked him if he knew how fast he was travelling. He said "No," and witness then told him he had taken 25 seconds to come from the top to the bottom of the hill, or at the rate of 15 miles an hour. Defendant then said the car was only on third speed, and he could not help it. P.C. Frampton, who was with the last witness, corroborated. Defendant elected to give evidence on oath, and said he had driven the car 2,500 miles, and had never had a complaint, and had not been cautioned. The car was geared up to 12 miles an hour,

and that was the limit. On the day in question he was driving the car at a third speed—8 miles an hour. He stopped the car within a yard of the signal of the police. It was impossible to go over twelve miles an hour. Ambrose George Cottingham said he was a passenger on the car, and it was travelling from 10 to 12 miles an hour. Francis Joseph Bell, motor-car proprietor, of Seacote, Southport, said a third speed would be 8·88 miles per hour. With the engine connected with the gear it would be impossible to travel more. The chairman said the defendant would be fined 2s. and 4s. costs. The spot was a particularly dangerous place, and furious driving must be stopped. Superintendent Foster said the police has no desire to be vindictive, but he might say that a deputation had waited on the Town Council to ask them to put a stop to furious motor-car driving.

BEFORE the Stipendiary at Cardiff, on Tuesday, Mr. Charles Jenkins was summoned for furiously driving a motor-car in St. Mary Street on February 5th.—The police gauged its speed at fourteen miles an hour. Mr. Jenkins declared it was not possible to get more than eight miles an hour out of the vehicle. A fine of £5 was, however, inflicted.

## THE MANCHESTER CYCLE AND MOTOR SHOW.

THIS show, which has proved to be one of the most successful so far organised in the provinces, was duly opened on Friday last, the 16th inst., and will close to-morrow. The *locale* is the Royal Botanical Gardens, Old Trafford, and an interesting feature of the exhibition is the large number of motor-cars and cycles on view. Messrs. Marshall and Co., Belsize Works, Clayton, Manchester, exhibit two of their well-known motor-vehicles, one of the usual type and one a four-seated dog-cart painted brown. The Century Engineering and Motor Company Limited, London and Altrincham, show two of their tandem motor-tricycles, first brought to the notice of the public at the recent Stanley Show. An illustration of this vehicle is given herewith; for a description of the machine we would refer readers to page 608 of our issue of November 24th last. It may here be mentioned that the machine is fitted with a 2½ h.p. vertical air-cooled motor, and that it is provided with a two-speed gear. Messrs. Bennett and Carlisle, Exchange Arcade, Manchester, make a big display. In addition to a Renault voiturette they are showing a Perfecta motor quadricycle for two persons, a Phebus Aster quadricycle, and an Osmond motor-quadricycle, convertible to tricycle.



THE "CENTURY" TANDEM MOTOR-TRICYCLE.

Two Benz cars are to be seen on the stand of Messrs. Featherstone and Sons, of Gravel-lane, Salford, as also a Butler motor-tricycle and quadricycle. Mr. F. D. Nawell, 219, Stretford-road, Manchester, has on view a Benz car and a number of motor-tricycles. Mr. W. Turner, 291, Stretford Road, Manchester, exhibits the "Griffin" motor-car. It is built on Benz lines, the motor being provided with electrical ignition and a special self-mixing carburettor. Motor tricycles and quadricycles are also shown by the Rothwell Machine Company, Limited, Market Street, Bolton, the Eclipse Machine Company, Limited, Oldham, Messrs. T. Smith and Sons, of Saltley, Limited, Birmingham (Eadie), Messrs. H. Cooper and Co., 109, Bradshaw Gate, Bolton, Messrs. J. Newton and Co., 50, Blackfriars Street, Manchester (Enfield), Mr. Henry Hargreaves, 2, Clough Street, Bury (Progress), of the Bard Cycle Manufacturing Company, Limited, Birmingham. Mr. Hans Renold, Manchester, exhibits his "Silent" chain for heavy motor-vehicles, while several concerns show pneumatic and other tires for motor-vehicles. During the week a number of cars and tricycles have been kept busy in conveying visitors to the show about the grounds.

## A NEW MOTOR INVENTION.

A MECHANICAL invention which gives every promise of producing a change, if not a decided revolution, in ordinary power engines, was demonstrated last week at the College of Science in Barras Bridge, Newcastle, before a large and influential company of the leading engineers of the district. It is to the ingenuity of a Swedish gentleman, Mr.

Birger Ljungstrom, that the new engine owes its origin, and we have reason to believe that the mechanical principle involved is one which gives great satisfaction to engineering experts. To describe it briefly, the new machine puts as much power and speed into a few cylinders and tubes that could be enclosed between two ordinary soup plates as up to the present time it has taken a machine as large as a drawing-room couch to produce. To any practical mind such a discovery will present great advantages, the first, and, from a commercial point of view, the most essential of which is the very low cost of production. Then come the considerations of weight and space, both of which are brought down to an apparently irreducible minimum; as, for instance, the 16 h.p. machine demonstrated last week does not weigh 85 lbs., and measures only 13 by 14 by 20 inches. The principle upon which this new motor is worked is the rotary movement, doing away at once with the necessity of piston-rods, valves, cranks, or reversing gear. All the movable parts are enclosed in one outer case, and are oiled by a single side feed. Perfectly balanced, the machine works without vibration and with hardly appreciable noise. The steam economy has been proved to be exceedingly good; the wear and tear is practically unrecognisable, and a thorough examination of the whole of the mechanism can be made within half an hour. A renewal of any of the parts is also exceedingly simple and inexpensive. A most important feature of the machine is that it can be reversed instantaneously, and the same handle which is used in regulating the speed is the one which governs the reversing process. In keeping with the size of the machine, the consumption of oil for lubrication is infinitesimal. Other advantages are that the motor is very rapidly started from being perfectly cold; no foundation work is required; it is equally suitable for compressed air or steam, and in its application to torpedoes it will be found most valuable, since it can be worked at any pressure without the slightest risk of cutting bearings or other frictional parts. It is also a noteworthy fact that no fly-wheel is required. The motor shown to the company last week was explained by Professor Weighton, of the Durham College of Science, who is taking an enthusiastic interest in the development of this invention. Amongst the influential company present were Mr. W. Scott (of Messrs. Hawthorn, Leslie, and Co.), Mr. Doxford (of Messrs. Doxford and Sons, Sunderland), Mr. Hunter and Mr. Harvey (of the Newcastle and District Electric Company, Limited), Mr. R. M. Ferrier (of the Durham College of Science), Mr. Wigham Richardson (of Messrs. Wigham Richardson and Co.), Mr. Graham (representing Messrs. John Brown and Co., Limited, Sheffield), and Mr. J. W. Reid (of Palmers' Shipbuilding and Iron Company, Limited).—*The Newcastle Journal*.

#### BRITISH MOTOR SYNDICATE v. J. TAYLOR AND SONS.

MR. JUSTICE STIRLING delivered his reserved judgment last week upon a summons taken out in this action to vary the Master's certificate as to the damages the plaintiffs had sustained in respect of the sale of starters for impulse engines which had been held to be infringements of Lanchester's patent. His Lordship said the judgment related to nineteen starters sent from this country to an agent in Paris, and sold there, and the question raised was, first, whether the sending of infringing articles through the United Kingdom constituted an infringement of the English letters patent, and, if so, whether the damages awarded by the Master were excessive. He thought that the transporting of articles in the present case was to undoubtedly make use of these articles within the meaning of the Patent Act. As to damages, the Master had awarded £8 per starter. In his opinion that amount was excessive, and ought to be reduced to £5 per starter. He also thought there ought to be no costs of the summons before him. Stay of execution was granted for a fortnight, with view to an appeal.

#### THE MOTOR MANUFACTURING COMPANY, LIMITED.

THE report of the directors of the Motor Manufacturing Company, Limited, for a period of twenty-two months ended October 31st last, to be presented at a general meeting to be held in London on Monday next, states that the directors regret that owing to this being the first occasion of stock-taking and valuation of machinery, plant, materials, and work in progress, it has not been found possible to present it at an earlier date. During the first twelve months of the period covered, it was found difficult to carry on the business of the company upon an economical basis, owing to the inefficient equipment of the works at Coventry, in respect of automatic labour-saving machinery; and although a fair amount of business was done, the year's working resulted in a considerable loss. During the remaining ten months of the period, however, a very large amount of machinery of the best and most modern description was purchased and erected, and the works are now satisfactorily organised for a fair output. The sales made during the twelve months ending the 31st December last show an increase of 130 per cent. over those of the previous period. There was, at the beginning of the year 1898, a demand for certain types of motor-vehicles. But these, after only a few months, were superseded by other systems, and had consequently to be abandoned, and arrangements made for the production of those which had come into demand. It has been necessary to spend a considerable sum in improvements of the Panhard, the De Dion and the Iden systems, which have been taken up by the company, and in perfecting types of motor-vehicles to meet the wants and taste of the public. Daimler motors with all the latest improvement are also being made at the company's own works, and experience has shown that the

motors of this type there turned out are fully equal to any other make of Daimler motor at present produced. The company possess the fullest possible rights to manufacture under the Daimler patents, and the directors are of opinion that the money spent in the above-mentioned improvements may be regarded as a very valuable asset. Their license under the various patents has been enlarged on the one hand and stripped of several restrictive clauses on the other. A considerable business has been and is still being done by the company, and the prospects of an extensive demand for the types of cars now being manufactured are very encouraging. The company has sold large numbers of motors of the De Dion type to leading cycle companies and manufacturers, and there is every promise of a large and increasing business from this source. There is also a distinct demand for a small two-seated car, and the directors believe that the vehicle of this type now being turned out at the company's works is the best of its kind on the market. In addition, the company has produced a 12-h.p. public service motor-car, which, in the view of the directors, will successfully meet the large demand for such a vehicle which, until quite recently, had remained unsatisfied. The directors regret that in their endeavours to bring the business into an efficient condition as a manufacturing concern, a very large expenditure has been necessary. The balance-sheet shows a loss on the twenty-two months' trading of £18,161. The licences, patents, patent rights, etc., figure as assets for £210,980.

THE Winton Motor-Carriage Company, of Cleveland, O., have opened a depot at 120, Broadway, New York, where one of their carriages will be kept on exhibition. Another carriage will also be shown at 57, West Sixty-sixth Street, New York, where arrangements have been made for the storage and repair of Winton carriages. At the factory, Cleveland, O., preparations are being made to double the force of workmen, and turn out not less than one complete carriage a day. They report a call for a faster machine, and are consequently equipping their 1900 "special" car with 9 h.p. motors and 4-in. pneumatic tires. The body will be modelled after the racing machines of France. In response to a demand for more seating capacity they are also manufacturing a four-seated extension top family carriage, geared for a maximum speed of 15 miles an hour.

#### TO CORRESPONDENTS.

All communications intended for insertion in this Journal or relating to Editorial matters should be addressed to THE EDITORIAL DEPARTMENT, MOTOR-CAR JOURNAL, 39 and 40, Shoe Lane, London, E.C. Letters must in all cases be accompanied by the name and address of the writer, as no notice will be taken of anonymous communications.

The Editors cannot undertake to return MSS. or drawings, although every effort will be made to do so in the case of rejected communications. Where such are regarded as of value, correspondents are requested to retain copies.

The Editors do not hold themselves responsible for the opinions expressed by their correspondents, or for statements and facts which do not appear in the editorial columns.

The Editors and publishers beg also to state that they will accept no responsibility for unsolicited contributions, even if used, unless payment for same is directly specified in forwarding, and the terms arranged before publication.

To insure insertion communications and contributions must be in the Editors' hands by Wednesday forenoon of the week in which the same are intended to appear. Disappointment may be caused by non-compliance with this rule, and to avoid this earlier receipt, if possible, is necessary.

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# THE Motor-Car Journal.

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## COMMENTS.



**W**ONDERFUL as were the speeds attained in last year's races by the leading French *chauffeurs*, it is apparent that the maximum has not yet been reached, and that the coming season has many surprises in store. An indication of this is to be found in the "Circuit du Sud-Ouest" race, which was run off last Sunday, particulars of which, sent by our French correspondent, will be found on another page. The course was over a distance of 335 kilometres, and this was covered by M. René de Knyff in 4 h. 46 min. 57 sec., or at an average speed of no less than 43½ miles per hour. The third man home was a motor-tricyclist—Marcellin—whose average worked out at 37½ miles per hour. Such speeds almost take one's breath away, and if French *chauffeurs* will persist in these high rates one can only hope that they will take every care that their daring—for daring it can only be termed—will not be accompanied by any fatal results.

—will not be accompanied by any fatal results.

—will not be accompanied by any fatal results.

### Trade Exhibitions— and Others.

EXHIBITIONS which attract those interested in the particular industries with which they are concerned are recognised as useful and necessary; but those which appeal to the public generally and are intended to serve the purpose of amusement are, as was apparent from Monday's meeting of manufacturers at the Automobile Club, to be regarded from another point of view—especially when elaborate participation is likely to result in expense wholly disproportionate to the supposed advantages. The meeting to which we have referred was presided over by Mr. F. R. Simms, and was called for the purpose of considering whether support should be extended to the exhibition which it is proposed to hold at Glasgow next year. The Lord Provost of Glasgow attended, and briefly recalled the progress made in connection with the affair.

### The Glasgow Exhibition.

IN 1888 there was a similar exhibition at Glasgow, which attracted six million visitors. So signal was the success that the surplus was sufficient to form the nucleus of a fund for the establishment of a fine art gallery in the city. After a lapse of a sufficient number of years a larger exhibition is being promoted, in connection with which will be a track, on which a series of sports will be held, including automobile races. In the course of the discussion Mr. Mann thought it would be a good thing to encourage the exhibition of motor-cars at Glasgow as there was a large public there to be educated. The question was, would the exhibition authorities give them enough space? His own firm would probably want space for ten cars. On the other hand Mr. S. F. Edge urged caution. He reminded the meeting that it meant locking up cars for six months of the year and introducing them to many people who

had no intention of buying. At their own trade exhibition the attendance was mainly of people who intended to buy motor-vehicles. They should be careful lest they spent more on exhibitions than their returns warranted.

### A Committee Appointed.

AFTER a somewhat desultory conversation, in the course of which it was suggested that the needs of the case would be met by each manufacturer showing only one distinct type of motor, Mr. Harrington Moore proposed, and the meeting adopted, a resolution deciding to support the Glasgow exhibition in principle, and inviting the Automobile Club to lend its support and patronage to the same. At the same time a committee of manufacturers was appointed to go into the details and report to a further meeting. This committee will consist of Messrs. Edge, Mann, Austin, Shippey, Simpson, MacManus, Gretton, Friswell, Simms, Northey, Spurrier, Harper, and a representative of the Daimler Company. Among the points which will have to be considered is the important one as to whether facilities will be given for taking out machines during the course of the exhibition. Otherwise every manufacturer who sends his vehicles to Glasgow will have to contemplate their idleness and also the expense of the necessary staff to watch his interests during six months—and those the busy months—of 1901.

### Opposition to Motor-Cars at Waterford.

THE proposal to introduce a number of motor-cars for public service in Waterford, Ireland, is meeting with strenuous opposition at the hands of the local car-owners and drivers. So bitter do they feel on the subject that they last week held a meeting, and after a lengthy discussion it was decided to resist "this motor-car epidemic," and accordingly the following resolution was proposed and adopted:—"That we, the car-owners and car-drivers of the city of Waterford, respectfully call on the members of the Town Council to oppose the granting to any company of licence to run motor-cars, or other such vehicles, as public conveyances, as same would be detrimental to the interests of the car-owners, car-drivers, smiths, farriers, saddlers, shopkeepers, etc., of this city; and we would ask you, as the municipal authority, having the welfare of the citizens at heart, to oppose the granting of such licences, which would deprive the car-owners and car-drivers, as well as a large number of the working classes, of their means of livelihood."

### "Respectful" Car-drivers.

WHETHER this resolution must be ascribed to the usual notion as to the backwardness of education in Ireland, or is wholly based on selfish grounds, we will not presume to determine. But we always thought the Irish jarvey had too much good sense to be hurt at anything less than a brick or other missile thrown at his head. When the motor-car first appeared in Dublin the drivers were too astute to advertise its advance at an indignation meeting, and contented themselves with the exhibition of racy humour and topical allusions. It may be that the

Waterford drivers have less wit than those on the banks of the Liffey, and can only do great things in company. Hence the meeting and the accompanying resolution, about which there is one sign of hopefulness, viz., the "respectfully call." Such an attitude is a distinct novelty, and if it has produced nothing else the motor-car must be regarded as a civilising influence on cabbies, jarveys, and other drivers of public vehicles. But as to the detrimental effect of automobiles on shopkeepers, etc., why the proprietor of almost every hotel and inn in Great Britain can testify to the contrary.

#### The "Balmoral" Motor-Char-a-Banc.

IN our issue of 26th January last we published an illustration and description of the large 16-seated motor-char-a-banc, lately completed by the Motor Manufacturing Company, Limited. This huge car has since been brought to London by road, and on Wednesday a party of pressmen were invited to take a trial trip on the vehicle. Unfortunately, we were not able to accompany the party, but a short ride over a bumpy stone-sett road in the neighbourhood of our offices proved that the car was one of the most comfortable—as regards the absence of vibration and jolting—that we have ever ridden in. The char-a-banc, as stated in our former description, is built on the George Iden system, of which the motor and the method of suspension are prominent features. There were fourteen passengers on board the car as it left Holborn Viaduct about 12 p.m. on Wednesday, and notwithstanding the wet and heavy state of the roads, the party was, we hear, successfully conveyed as far as Cobham. The route followed was through Clapham, Wandsworth, Richmond Park, and Kingston, and we learn that all the hills were successfully mounted—most of them on third-speed. A little trouble was experienced on the return journey with the lamps, but the party expressed themselves as well pleased with the new car, both from the point of view of comfort and of the hill-climbing capabilities.

#### Horse Statistics of Paris.

THAT the great wail of woe sent up by livery stable proprietors and horse dealers at the commencement of the automobile movement was quite unjustified has received striking testimony by the statistics recently issued in the columns of *Le Temps*. These figures, dealing with the census which is annually prepared for military purposes, show that at the present moment Paris possesses upwards of five thousand more horses than twelve months ago, and this too in spite of the very great increase of automobiles employed. To-day there are 98,284 horses in Paris, which could be requisitioned in case of need, while a year



A TRACK RACE MEETING AT VIENNA.

ago there were but 93,652, thus showing a clear gain of 4,632. Of this increase, the Compagnie des Omnibus can claim 1,005, their figures having advanced from 15,833 to 16,838. I am not surprised, writes our Paris correspondent, at this increase, for at the present moment the only branch of automobilism likely to have a diminishing effect upon the number of horses employed is that of self-propelled tramcars. The very great majority of cars at present go into the hands of wealthy private gentlemen, who retain their horses all the same, while usually small vehicles

of the voiturette and cycle types are purchased by a class of people who cannot afford to keep a horse. Comparatively speaking, but few cars are employed by tradespeople, and the progress made by automobilism in this direction is so small as to show no appreciable results when compared with the increase of transport facilities required by reason of a town's increase of population and corresponding increase of commerce. In the case of the tramways, however, it is different, for there the horse is absolutely superseded, and in Paris the adoption of the self-propelled systems on tramway routes is making rapid headway. I consider the Paris self-propelled tramcars to be one of the features of the city, for, whether steam or electrically driven, they run with the greatest regularity and with an entire absence of those objectionable features which are so manifest in certain systems. If only the lines could be dispensed with! Yes, that is the cry, for however one may commend the tramcars themselves nothing favourable can be said about the lines, which frequently are a very serious danger to the other forms of traffic. As the mention of tram lines has, however, a particularly irritating effect upon automobilists and cyclists, possibly it will be wiser to leave the subject.

#### Railway Companies and Motor-Cars.

RAILWAY companies in the United States are universally regarded as wide-awake—not to say 'cute. Bearing that in mind, a leading article in the *Railway Age*, of New York, in which the directors of railroads are said to be opposed to motor-cars, reads rather strangely. Our contemporary complains that while the great cities of the United States are averse to the railroads running along the streets—even "running on a fixed and narrow path, with warning bell and steam puff, across streets guarded by gates and watchmen, and along their own right of way, fenced against trespassers"—the authorities allow the presence of "the fierce motors that may at any time run amok." In an attempt to scare the public we are told that in Chicago "men who have faced bullets dodge through the crush of vehicles in greater peril than that of war." Such rubbish is intolerable in a paper that is said to represent a great interest, and if the railway people are wise they will adopt automobiles instead of wasting their energies in denouncing them.

#### Small Cycle Makers and Automobiles.

IT is astonishing what a great interest small cycle makers—especially those in the metropolitan districts—are taking in the motor movement. Not a few of them are now owners of motor-tricycles, which they have been studying with the view of making themselves capable of undertaking repairs to such machines, while several have even gone further and have undertaken the construction of experimental motor-tricycles and light cars on their own account. Two cases of the kind have come under our notice this week, in which not only are they building their own frame and gear, but they have constructed every part of the motor in their own workshops. We shall keep in touch with the progress made with the cars in question, and hope to refer to them again in subsequent issues.

#### A New Werner Motor-Bicycle.

THE other day we had an opportunity of inspecting the latest type of Werner motor-bicycle, which, both in the general arrangement and in the motor, comprises several noteworthy improvements. The bicycle is now fitted with a motor capable of developing 1½ h.p. The two fly-wheels, which in the old type were carried outside the crank case, are now fitted inside, notwithstanding which the case only measures 3¼ in. in width. The valves are arranged at the side, one above the other, while the combustion chamber is fastened to the cylinder by two bolts, which being hinged at the bottom permit of the *culasse* being quickly detached when required. The motor, the speed of which can be varied from between 1,200 and 2,500 revolutions per

minute, only weighs 22lb. Another point worth of notice is that the compression tap is arranged with a horizontal in place of a vertical outlet, so that the gases are not blown up into the face of the rider. The control levers about the handle bar have been considerably simplified, and while not interfering with the ease of operation, the appearance of the front part of the machine has been much improved. The method of controlling the "mixture" is particularly neat; the air is taken through a hole at the left-hand end of the handle-bar, the amount being regulated by an adjustable ring. The starting and stopping switch is controlled by the right hand grip, but to prevent any waste of the current should this handle be moved when the bicycle is not in use, a switch with removable plug is, in addition, now introduced in the circuit. The sparking device is now enclosed by a light detachable cover, while it is so located that the danger of oil splashing on to it from the crankcase, and so interfering with the running, is greatly minimised, the timing gear being located well above the motor shaft. The power is transmitted by a strap to a light pulley as before, but the large pulley is now attached to the rim, instead of to the hub, of the front wheel as hitherto. The arrangement not only permits the pulley to be fitted nearer to the wheel than before, but considerably relieves the strain on the spokes. The induction coil now used is also of an improved type, occupying but a small space, and located within the frame. As we have said, the appearance of the machine has been greatly improved, and since the adoption of electric ignition in place of the lamp, we learn from the Motor Manufacturing Company, who are the sole agents for the Werner machines in this country, that a very satisfactory demand has sprung up for them. In its new form, although fitted with a more powerful motor, the weight of the complete machine has been reduced to 65lb.

#### Motor-Vehicle Services in Canada.

A NEW competitor—or rather an old one resurrected—has arisen to compete with the railways between Toronto and Hamilton, Ont. It is our ancient friend the horse and wagon, long ago thought to be dead and buried as a freight carrier along a highway paralleled by railways. Owing, however to the heavy charges of the railway companies—two firms, one in Toronto and the other in Hamilton—have just re-introduced horse-drawn wagons for the carriages of goods between the two cities. Hamilton is 40 miles from Toronto, and Chicago is 500 miles from the latter city, but the railway freight for the 500 miles is as low, or lower than that for the 40 miles. So far, only two horse-drawn wagons are on the service, and each carries about five tons of freight per trip. One day is occupied in making the journey, and the cost for every five tons is said to be about £3 less than if the goods were conveyed by the railways at the rates now ruling. There would seem to be here an excellent opportunity for our builders of heavy motor-wagons to bring their vehicles before the notice of Canadian traders. The recent trials at Liverpool amply demonstrated the advantage of heavy motor-wagons over horse-drawn vehicles, so that there should be no difficulty in inducing some firm in Canada to give the automobile a trial.

#### Different or Equal-sized Wheels for Motor-Vehicles.

AN interesting question is raised by a correspondent in one of our American contemporaries with regard to the size of wheels in motor-vehicles. "In looking over the various designs of automobiles," writes the correspondent referred to, "I notice it is the custom to make the front wheels smaller in diameter than the rear wheels. Is there any special reason for this difference in diameter, or has it been adopted because it is the custom in the construction of other vehicles? The writer has had considerable experience in running the new vehicles, but so far has failed to notice any advantage in the small front wheels. On the other hand, there would be quite an advantage in the line of repairs and renewal of tires if both front and rear wheels were of the same diameter. I am also inclined to think that with front wheels the same diameter as rear wheels the vehicles would cross ditches and other obstructions much easier

than when the small front wheels are used. I would like to see this matter discussed by some of the experts in automobile construction and by drivers." Perhaps some of our readers who have given attention to this matter may favour us with their views.

#### Modern Steam-Wagons.

AT a meeting of the Gloucester Engineering Society recently, a paper entitled "A Short Account of some Modern Steam-Wagons," was read by Mr. R. E. Platt. The paper was the joint production of Messrs. C. A. Burls, A.M.I.C.E., and Mr. R. E. Platt. In the course of his remarks, Mr. Platt said they were all well aware the subject attracted a great amount of attention between the years 1770 and 1860, and a degree of success was attained which was really remarkable,



TWO YOUNG ENTHUSIASTS.—THE CHILDREN OF DR. BRUCE PORTER, OF WINDSOR, ON A DAIMLER PARISIAN-CAR.

when one considered the disadvantages under which experimentation then laboured. Attention was, however, completely diverted by the great strides made about that time in railway development, which was then not unnaturally regarded as the final and complete solution of the problem of economical and speedy transport. It was safely predicted that the horse was doomed as a tractive agent; we heard the same cry repeated three years ago, on the passing of the Light Locomotive Act of 1896, though perhaps there was a better foundation for the prophecy in this than in the former case. But it was extremely unlikely that any one system of locomotion would ever prove so flexible as to be the best for all services. There was, however, an enormous field of usefulness for the heavy automobile. In the frequent case of journeys too long, or too heavy for horses to be profitably employed, and too short for the railroad to be used economically, the heavy motor-vehicle would in the near future be largely employed. Compared with the horse, the automobile, it might be remarked, did not get tired, travelled considerably faster, and could be fully loaded on homeward runs; further, in the not uncommon case of a slack period of business occurring the only loss while the motor was standing was the interest on invested capital, while the horse, whether working or idle, required food and constant attention. Mr. Platt afterwards described the power needed for the propulsion of automobiles and the estimated power required by a "steamobile," and he also gave some experimental results on tractive resistance on roads and the influence on tire width. He remarked that drivers must possess sufficient skill to make adjustments, execute small repairs, either temporarily, when on the road should this be necessary—or permanently, in the repairing shed at week ends. The author next proceeded to describe the general arrangements and details of mechanism and a number of steam vehicles, illustrated by large wall diagrams, drawing special attention to the Thornycroft three-ton wagon. The paper concluded with an expression of confidence in the future of the automobile movement, not only for purposes of pleasure and the carriage of light loads, but also, and especially, for the transport of large quantities of goods and materials over considerable distances with great economy and advantage.

## MOTORING IN THE SNOW. AN EXPERIENCE FROM BATH TO READING.



**M**EETING Mr. G. Foster Pedley, of the Daimler Motor Co., Ltd., the other day, the subject of motoring in the snow happened to come up in the course of conversation, as a result of which we were able to glean a few details of a long-to-be-remembered trip lately made by that gentleman in a Daimler car. The journey

extended from Bath to Reading, and we give it below in as nearly Mr. Pedley's own words as possible.

"We—self and friend—left Bath at 5 p.m. on Monday, the 12th ult., just two days after the great snowstorm, and although the roads were covered with snow—in many places to a depth of over 3in.—we had a good run to the old town of Devizes, the eighteen miles separating it from our starting point being covered in an hour and a quarter. After refreshing the inner man, my friend left me to return to Bath by train, and I afterwards learned from him that his return journey occupied him just three hours, as against the hour and a quarter of the outward trip.

"I had little idea of the experience in store for me, when, at 8 p.m., I pulled out of Devizes with the object of reaching London the same night. Heading towards Marlborough the snow became deeper and deeper as the high lands were reached. The few vehicles that had traversed the road during the day had formed a kind of track through the snow just wide enough for the car, but I had to proceed carefully, owing to the unpleasant tendency the wheels were showing to skid on the frozen snow. However, I managed at last to get the car going on top speed. My first exciting time was now at hand. When about half way to Marlborough the car almost came suddenly to a halt. Rapidly changing over to first-speed, wondering what was the cause of the slackening down, my surprise was increased by the vehicle stopping dead. A quick dismount soon answered my curiosity. I had run into a snow-drift! Alone with neither a house nor a soul in sight, my predicament is one not easily imagined. After a few moments' cogitation I commenced to dig out a rearward track for the car with my feet. This done, I managed to back the vehicle out of the drift and putting her on first-speed again attacked and finally managed to work my way through the drift, which proved to be from fifteen to eighteen feet long. Marlborough Hill, with its gradient of about one in eleven, was the next of my troubles; the fearful condition of the road, covered with frozen snow as it was, combined with the gradient, made progress exceedingly slow, and had it not been for the powerful motor available I should never have reached the top. This accomplished, however, I made for the Forest of Savernake, at the entrance of which I had to make a sudden stop, owing to it being necessary to arouse the gate-keeper by the repeated blowing of the horn.

"The trip through the Forest was one I shall long remember. All alone except for thousands of rabbits, and the road perfectly white in snow, the sensation was a peculiar one. Not having seen a light for some time, the sudden appearance of one in the road about half-way through the forest came as a surprise. A sound of the horn brought no response, so that I approached the light very carefully, and as it did not appear to move I had again to come to a stop to do a little amateur scouting, the result of which was the discovery of a traction engine with three furniture-vans stuck fast in the snow. There was not a sign of life to be found in or about the vehicles, which, after lamps had been placed both fore and aft, had apparently been temporarily abandoned. How to get by was the next question; the operation being only performed with great difficulty owing to the deep snow at the sides of the roads. My experiences in Savernake Forest were not yet at an end, for, owing to a skid one wheel got into deep snow, and the other almost into a ditch. Except for a quick application of the brakes I shudder to think of what might have occurred.

"Leaving Savernake, and having given up all hope of reaching London that night, I decided to make for Hungerford, which town, after several minor incidents, was reached about 11 p.m. Notwithstanding the late hour I found Mr. Osmond, the host of the Bear Hotel, most obliging, accommodation for both car and self being quickly made ready. Before attending to my own requirements I spent a few minutes on the car, breaking the water connections and emptying all the water, as I thought, from the cylinder jacket, water tank, radiating coil, etc.

"Intending to make an early start, I was up at 6 a.m. the next morning (Tuesday, the 13th ult.) and after getting the burners in operation proceeded to fill up with water. I say 'proceeded to' advisedly, for, to my consternation, I quickly found that the passages were choked. The services of a painter with a pressure lamp were requisitioned to thaw the pipes, the result of two hours' labour being the discovery that the radiating coil had burst! This necessitated the detaching of the coil altogether and hunting for someone in the locality to repair the same. The operation, although well carried out, was a lengthy one, and it was not until 3.30 p.m. that I was able to leave Hungerford. The accident to the coil was not, however, without its advantages. An inspection resulted in proving that the burst pipe was due to some water still remaining in the upper tier of the coil, showing the necessity of a vent to let out water from both tiers, and this is to be provided on future radiating coils on Daimler cars.

"From Hungerford to Newbury the car made a good run, and I had begun to congratulate myself on having got over the worst. I had spoken too soon! Shortly after leaving Newbury a gale sprang up, and what with the wind and sleet right in the face, I was half-blinded, and it was with the greatest difficulty that I managed to reach Reading. Matters were not improved by the fact that as the latter town was approached the state of the roads became worse and worse, and feeling incapable of then further battling with the elements, I decided to leave the car at Reading and proceeded home to town by train."

We think that all who read the foregoing will agree with us that Mr. Pedley has passed through an unique experience—one that he is not likely to forget for many a year to come.

"AUTODROME" is the latest word to be brought forward in America as a substitute for motor-car.

LA SOCIÉTÉ DES VOITURES ÉLECTRIQUES (système Krieger), of 80, Rue Taillout, Paris, is being dissolved.

THE death is announced of M. Charles Brouhot at the age of seventy-four years. The deceased was the head of the engineering firm of Messrs. Brouhot and Company, of Vierzon, France, which took up the construction of automobiles about two years ago, and one type of whose vehicles was illustrated in these columns a few weeks ago.

At a student meeting of the Institution of Civil Engineers on Friday, last week, a paper on "Bearing Springs" was read by Messrs. B. Humphrey and H. E. O'Brien, Mr. J. T. Thornycroft in the chair. In the course of the discussion the Hon. C. S. Rolls drew attention to the question of springs for light motor-vehicles, and pointed out that in France very few of the springs employed on such cars had succeeded in standing the strain experienced in motor racing. Mr. Thornycroft, in summing up, remarked that he was glad the question of springs for automobiles had been brought forward, as the question was a most important one.

CALLING at Messrs. Friswell's dépôt on Holborn Viaduct, E.C., the other day, we were shown the first British-built Renault voiturette. While retaining the air-cooled De Dion motor and the Renault transmission, the appearance and comfort of the car have been improved by making it both a little wider and longer than the original vehicle. Another modification in the new car is to be found in the control of the variable gear. In place of the handle which projects through the floor, this is now operated by a handle working in a quadrant fixed to the steering standard. On all hands we hear good accounts of the Renault voiturette and we shall not be surprised to see quite a number of these vehicles in use during the coming season.

# A New Benz Car.



GENERAL VIEW OF THE "EMPEROR" FOUR-SEATED CAR.

THE accompanying illustration shows the Emperor car—the latest production of Messrs. Benz and Co., of Mannheim, Germany, and which is now being introduced into this country by Messrs. Hewetson, Ltd., of Dean Street, London, W. As will be seen, the body is quite a new departure in Benz cars: there is seating accommodation for four persons, half of the front seat being hinged to give access to the rear seats. The car is fitted with a 5-h.p. single-cylinder motor with electric ignition and water jacket. The water circulation is maintained by a small pump; the petrol and water tanks are located in front, while a radiating coil is also provided. Three speeds forward and reverse motor are provided, the transmission being on the well-known Benz system. The body is well sprung on easy springs, while the road wheels are of wood with solid rubber tires.

A NEW light steam car is reported to be in course of construction at Namur, Belgium. No details have been as yet allowed to leak out.

WE understand that arrangements are being made for a motor-car and motor bicycle carnival to be held in Kendal on April 30th next. A committee has been formed in the town, with the mayor as patron, to attend to the necessary preliminaries.

ONE of the latest entries in the amateur section of the Automobile Club's 1,000-mile Trial is Mr. C. Cordingley, who will drive his new Iveagh phaeton. The car, which has been built by the Motor Manufacturing Company, Limited, will, for the Trial, be fitted with a light two-seated body of aluminium.

BEING out on the North Road, the other day, we happened to call on Messrs. Richardson and McLaren, of the Invicta Cycle and Motor Works, North Finchley, and found them busily engaged on the production of a motor-tricycle and a motor-voiturette to their own designs. The firm appears to have gone into the question thoroughly, and are constructing every part, even the motor, of the vehicles, in their own shops. The tricycle will be fitted with an improved form of De Dion motor, while the light car will have a vertical water-cooled engine giving about 3½-h.p. We are promised further particulars of the vehicles when completed. Messrs. Richardson and McLaren carry a stock, it may be added, of motor-car spirit, and are well laid out to undertake repairs to automobiles of all kinds.

## MOTOR-CARS ON THE CONTINENT.

(From Our Own Correspondent.)

### Races in the South.

IT appears that in order to decide upon their representatives in the "Coupe Provinciale" and the "Coupe des Motocycles du Sud-Est," the Motor Club of Lyons will run off a race on the 18th instant from their town to Bourgoin. Upon the results of this course there will be selected three carriage chauffeurs and three motor-cyclists, whose mission it will be to defend the club's colours in the races mentioned. Another event, which will be held in the South, is the race Bordeaux-Périgueux-Bordeaux. This important course will be decided in two stages on Sunday, the 3rd, and Monday, the 4th June. It will be run in connection with an automobile meeting at Périgueux, and advantage will be taken of the opportunity to decide the recently-created "Championship of the South West." The organisers are the Bordeaux Automobile Club, the Périgueux Bicycle Club, and the Automobile Club of the Dordogne. Invitations to attend the meet will be issued to all interested in the automobile movement, and the promoters confidently expect a large gathering of chauffeurs.

### At the A.C.F.

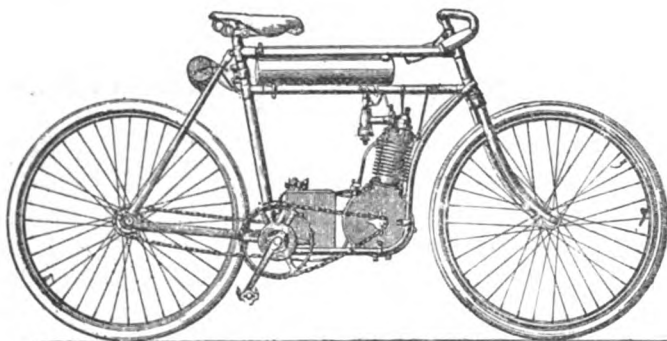
ON the 23rd ultimo, a very numerous attended meeting of the organising committee of the automobile exhibition and competitions was held at the club house, when the following officials were elected: President of honour, Baron de Zuylen de Nyevelt; president, M. Forestier, inspector-general of bridges and roads; vice-presidents, MM. Jeantaud, Rives and Count de Dion; secretary, Count de Chasseloup-Laubat. Various sub-committees were also elected to make the necessary arrangements for the following events:—Competition for touring cars in May; competition for cabs and delivery carts in June; competition for racing cars in July; competition for voiturettes in August; competition for light delivery carts in September, and competition for heavy weight vehicles in October. One very important matter was fully considered, and that was the question of transport from Paris to the exhibition at Vincennes. A number of constructors of large type vehicles have already been approached



in the matter, and it was reported that MM. de Dion, Scotté, Le Blant, and others were prepared to facilitate the conveyance of visitors to and from the show by the organisation of regular passenger services between certain stations on the Circular and Metropolitan Railways and Vincennes. This will be a very great boon, as undoubtedly the single line of trams now in operation between Paris and Vincennes will prove quite inadequate to cope with the enormous number of visitors which the automobile exhibition and races will attract to the latter place. I may add that it is extremely doubtful if the Vincennes section of the exhibition will open before the 15th May.

#### The Landru Motor-Bicycle.

LA SOCIÉTÉ DE CONSTRUCTIONS MÉCANIQUES, LE PROGRÈS INDUSTRIELLE, of 6, Rue des Carrières, Montmorency (Seine-et-Oise), have recently introduced the motor-bicycle shown herewith. The machine, which is known as the Landru, is provided with a small  $\frac{3}{4}$  h.p. petrol-motor, the diameter of the cylinder being 60mm. and the stroke 70mm. The ignition is electrical, the timing gear being controlled by a small hand wheel and screw, in place of the usual handle, in order to prevent any vibration, due to uneven roads, affecting the ignition. The power of the motor is transmitted by chain gearing to the rear wheel, a clutch being fitted in the bottom bracket, so that the rider only pedals when starting the motor, or when mounting stiff hills. It will be noticed that the frame of the bicycle is of special construction; the lower cross member of the frame consists of two tubes of a special curve, to which the motor is attached in the axis of the bicycle. This machine is about the cheapest



automobile that has yet been put on the market, its price being only 750fr. (£30). The company are also making a front-seat attachment, by means of which, and by removing the front wheel of the bicycle, the machine can be converted into a two-seated tandem triecyle.

#### Racing at Cannes.

UNDETERRED by the mistral, which was very much in evidence, a considerable number of spectators lined the Boulevard de la Croisette at Cannes on the afternoon of the 21st ultimo in order to witness the Réunion Cyclo-automobile, and they were rewarded by seeing some capital racing. A very varied programme had been prepared, and thanks to the really excellent organisation the meet passed off without a hitch of any description. Proceedings opened with a couple of bicycle races, and these were followed by an international *course* for motor-cycles. In the final of this event Allègre, of Toulon, was the first man home, covering the 3,000 mètres in 4min. 15sec. The second man was Antonio, his time being 5min. 12sec., and a special prize of 20fr. was awarded to Jouan, who made the third best time of the series. As during one half of the *course* the competitors were battling against the wind the times recorded were naturally somewhat slow. One of the competitors, Harris, gave rise to the only mishap of the day, as when close to the Place des Iles he ran into a barrier, and rather seriously damaged an individual standing behind it. After a costume competition for cyclists, a battle of flowers took place among the automobilists who, however, did not turn out in large numbers for this event. The cars of those who did, however, were beautifully decorated,

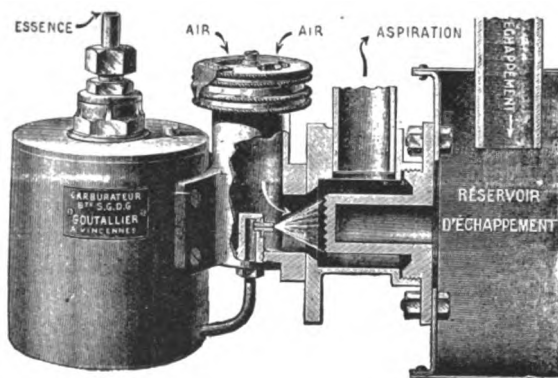
and mention should certainly be made of the automobiles driven by MM. Smith, Vanquelin, Lainé, Rouff, and Heurtard, to each of whom a commemorative banner was awarded. This réunion formed part of the carnival fêtes, which are quite one of the features of the Cannes season.

#### Motoring in Algeria.

QUITE a number of well-known French *chauffeurs* are at present in Algeria. A few days ago M. Archdeacon organised a run from Algiers to Blidah and back. Eight cars and twenty motor-cycles took part in the trip, which was a great success, and attracted much attention on the part of the natives.

#### THE GOUTALLIER CARBURETTOR.

THE latest carburettor for petrol motors to come under our notice is that of M. Goutallier, of Vincennes, France, and of which an illustration is given herewith. The latter is so clear that very little description is necessary. It will be seen, however, that the carburettor is bolted to the side of the exhaust silencer, and that the latter has attached to it a hollow piece projecting into the carburettor. At the left is seen the constant-level petrol tank, from which a charge of petrol is drawn by the suction stroke of the motor. To the right of the tank is the air inlet. The spirit emerges through a small nozzle, and is sprayed on to end of the projection from the silencer, the outer end of



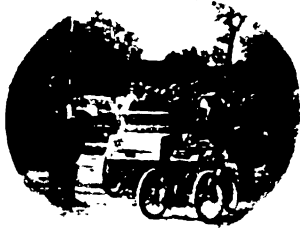
which is in the form of a grid. Here the spirit is vaporised and becomes mixed with the air, the carburetted air passing to the explosion chamber along a pipe in which one or more wire gauze discs are introduced. As will be seen the air inlet valve is provided with an adjustable cap, while the maker claims that his arrangement does away with a pipe passing through the carburettor from the exhaust, so facilitating the dismantling of the carburettor when necessary. This operation can be done by simply removing three nuts, all of the same size.

THE Committee on Runs and Tours of the Automobile Club of America is said to be making arrangements for an excursion from New York to Philadelphia.

AT the fifth ordinary meeting of the Aberdeen Mechanical Society last week, Mr. William Harper, of Harper's Motor Company, read a paper on "Progress in the Development of the Motor-Car." The lecturer commenced by explaining that it was not until three years ago that motor-cars were allowed to be used on our streets and roads. Motor-vehicles were now being largely used, and he mentioned that another satisfactory feature was the attention which municipal authorities were devoting to the new means of locomotion. In this direction, there could be no doubt that the enterprise shown by the Chiswick Vestry in the adoption of motor dust-carts had been of excellent service, the result having been a saving of £2 per day by the new means of locomotion. He regretted that the War Office had not yet experimented with motor-vehicles, although this had been done during the past year in France, Italy, Austria, and Germany. The lecturer also showed that, notwithstanding the largely-increased productive capacity, the demand was still far in excess of the supply.

## THE PAU WEEK.

(From Our French Correspondent.)



AS I mentioned last week the Pau meet of automobiles opened on the 21st ult., with a *course* reserved for tourists over a route from Pau to Peyrehorade and back, a distance of 140 kilomètres, or about 88 miles. Unfortunately for the comfort of competitors and spectators alike the weather was most unfavourable, as until three o'clock in the afternoon rain fell incessantly. Under these discouraging conditions the large attendance at the start speaks volumes for the enthusiasm of Pau's inhabitants and visitors, while at Orthez and other centres *en route* the greatest interest was also manifested in the passage of the racers. As was to be expected the members of the organising society, the Automobile Club Béarnais, were greatly in evidence both at the start and finish, and among those whose presence was noted were—Mr. W. K. Thorn, president, and Comte Nitot, vice-president of the A.C.B.; Sir Alfred Nugent, Comte O'Gorman, Comte de Saint-Hilaire, Colonel Durlly, Baron Seguiet, Comte de Franqueville, M. Doux, the prefect, and M. Faisans, the Mayor of Pau. Under the superintendence of MM. Couget and Dampéyron, the competitors were despatched upon their journey at half-minute intervals, the last of them getting clear of the Place Grammont, from which the start was effected, at 11h. 6min. 30sec. Among the starters there were two conspicuous absentees, these being M. René de Knyff and Comte Bozon de Périgord, the former not having arrived from Paris, while the latter had decided to reserve himself for the race on Sunday. In their absence the favourite was M. Pascault, and the public's confidence in him was not misplaced, or he drove his 15-h.p. car over the course in much the fastest time. Indeed, his performance was a revelation, as his actual net time was 2h. 41min. 44sec., giving the high average speed of 52 kilomètres (32½ miles) per hour. Pretty hot for a car competing in a touring category, I think. Among the four-seated cars, M. Clément's 12 h.p. Panhard gained an easy victory, defeating the nearest opponent by half an hour. The motor-cyclists had a very trying experience, the incessant rain causing numerous short circuits, while the heavy state of the roads did not add to their physical comfort. Neither of them, for only two of those who had inscribed their names had the hardiness to turn out, finished the course. The complete classification of the finish was as follows:—Prix de la Presse (two-seated cars weighing more than 400 kilos).—1, Pascault, in 2h. 41min. 44sec.; 2, Barrow, in 3h. 15min. 16sec.; 3, Secrestat, in 3h. 18min. 50sec. Prix des Cercles (four-seated cars weighing more than 400 kilos).—1, Clément, in 3h. 16min. 10sec.; 2, Comte Lashases, in 3h. 46min. 25sec. Prix de l'Automobile Club Béarnais (six or more seated cars).—1, Barbereau-Bergeon, in 5h. 4min. 50sec. Prix de l'Automobile Club de France (voiturettes of one or two seats weighing less than 400 kg.).—1, Tart, in 4h. 20min. 20sec.; 2, Schmidt, in 5h. 21min. 40sec.

In the evening all the *chauffeurs* adjourned to the Grand Theatre, which the Automobile Club Béarnais had taken entire, and witnessed a capital representation of "Lakmé." In marked contrast to the miserable weather of the previous day, Friday was gloriously fine, and a large gathering assembled to witness the start at two o'clock of the paper-chase, which took the place of the previously arranged fox hunt. The trail laid by Mr. W. K. Thorn, the club's president, was about 40 kilomètres in length, and was by way of Bizanos, the Ousse Valley, and the Tarbes road. Starting from the Palais d'Hiver the eighteen participating cars did not make any undue haste, for the round occupied about four hours. Among the participators were:—Mr. Thorn, accompanied by M. René de Knyff, Count Nitot, MM. Pascault, Huillier, Giraud, Klotz, Labrouche, Vicomte d'Elva, etc. The "A.C.B." gave a most enjoyable ball at night in the Salle du Palmarium of the Palais d'Hiver.

It had been intended to hold an exhibition of automobiles on Saturday morning, but at the request of many owners of cars this was postponed until Monday. The day's proceedings were therefore confined to a bicycle race of 60 kilomètres Pau-Soumoulou-Pau, in which the automobiles rendered valuable services to the competitors in the way of pacing. These first three days of automobile fêtes served to whet the appetite of enthusiasts, and by Sunday, the day of the big race known as the "Circuit du Sud-Ouest," excitement ran high. The *contrôle*, from which the start was effected, was situated on the Tarbes road, about three-quarters of a mile out of the town, and on the competing cars lining up for the start it was found that there were no absentees. The competitors were despatched at half minute intervals by M. Gouget as follows:—Et. Giraud, 9 a.m.; de Knyff, 9h. 30sec.; Hourgières, 9h. 1min.; Périgord, 9h. 1min. 30sec.; Loraine-Barrow, 9h. 2min.; Pascault, 9h. 2min. 30sec.; Charron, 9h. 3min.; Girardot, 9h. 3min. 30sec.; Valton, 9h. 4min. Seven minutes later the following ten motor-cyclists were sent off together:—Marcellin, Béconnais, Rigal, Baras, Osmont, Joyeux, Martin, Villemain, Delisle, and Labadie. At 9.20 a.m., the two amateur motor-cyclists, Montbel and Meyer, made their start on the journey of 335 kilomètres (209 miles). The first competitor to come to grief was Barras, who had taken a considerable lead from his opponent motor-cyclists, when a broken exhaust valve pulled him up after traversing but 2 kilomètres of the course. At Tarbes, 55 kilomètres from Pau, de Knyff held a 2 min. lead, while at Riscle, 35 kilomètres further on, he had increased this to an advantage of 4min. Here Charron lay second, 1min. ahead of Giraud, and it was at this point that Valton badly damaged his car in flying a railway level crossing, and was forced to retire. At Saint-Sever, 137 kilomètres from the start, de Knyff held a lead of 9min. of Giraud, with Périgord 4min. behind the latter. It was about here that Charron's 12 h.p., which was constructed with a specially low frame, bringing the underworks to very near the ground, came to grief. In passing a "caniveau" the vehicle made a tremendous bound, and was thrown against a tree. The engineer was thrown out, but neither he nor Charron, who retained his seat, suffered anything more serious than a few bruises. The car was badly wrecked, however.

The town of Dax was reached by de Knyff at 11h. 39min., he having thus taken 158min. 30sec. to cover the 182 kilomètres. His nearest opponent was Giraud, who passed at 12.1 midday, followed by Périgord two minutes later. M. de Knyff continued to augment his advance, but the struggle for second place was for some time very severe between Giraud and Périgord. The finishing point at Pau was placed at the Parc de la Basse Plante, on the Bayonne road, and at a few minutes past two o'clock the assembled crowd were astonished to see M. de Knyff coming down the road like a lightning flash; for although a very fast performance was expected from him it was not anticipated that he or any other competitor would cover the 335 kilomètres in the marvellous time of 4h. 46min. 57sec. net, or at an average speed of 70 kilomètres (43½ miles) per hour. A long wait then ensued, for M. de Périgord took 47min. more than the winner to complete the distance. The motor-cyclist Marcellin was the next to appear upon the scene, and his performance was also a truly remarkable one, giving an average speed of 60 kilomètres per hour. He rode a new type of motor, possessing two cylinders, and developing between 5 and 6 horse-power.

The official classification was:—

## CARS.

|                             | H. | M. | S.  |
|-----------------------------|----|----|-----|
| 1. René de Knyff ... ..     | 4  | 46 | 57  |
| 2. Comte de Périgord ... .. | 5  | 33 | 52½ |
| 3. Gilles Hourgières ... .. | 5  | 51 | 52  |
| 4. Pascault ... ..          | 6  | 2  | 41  |
| 5. Girardot ... ..          | 6  | 55 | 0½  |
| 6. Barrow ... ..            | 7  | 10 | 29½ |
| 7. Giraud ... ..            | 7  | 51 | 0   |

## CYCLES.

|                     |   |    |    |
|---------------------|---|----|----|
| 1. Marcellin ... .. | 5 | 47 | 14 |
| 2. Delisles ... ..  | 6 | 21 | 5  |
| 3. Osmont ... ..    | 6 | 52 | 2  |

After Sunday's excitement the programme for Monday appeared quite tame, but nevertheless it attracted a goodly gathering. The automobile exhibition in the morning was well patronised, while a capital gymkhana after *déjeuner* afforded excellent sport. In the evening Mr. W. K. Thorn entertained at dinner a large gathering of *chauffeurs*. Tuesday saw the finish of this delightful meet, the programme for the day comprising a "Fête des Fleurs" and a "Bal masqué." The Automobile Club, Béarnais, can be heartily congratulated on having organised one of the most delightful meets that *chauffeurs* have ever had the good fortune to attend, and next year's réunion will be eagerly looked forward to as one of the events of the automobile year.

## CORRESPONDENCE.

### IMPROVEMENTS IN DAIMLER CARS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—Some time since (see *Motor-Car Journal*, October 20, 1899) I sent you some particulars of the improved cooler and starting device I have fitted to my Daimler car. I had to ask you not to publish illustrations for a time owing to the applications for the foreign patents, but now enclose two photos showing



FRONT VIEW OF MR. ESTCOURT'S DAIMLER CAR FILLED WITH NEW WATER-CIRCULATING ARRANGEMENT.

the arrangement illustrated.\* I have come to the opinion that a pump is a troublesome, unnecessary complication. Every week one hears of the trouble caused by depending upon a pump. I can safely say I had more trouble, annoyance, and damage caused by the failure of the pump than all the other parts of the motor put together.

I may mention that I shall have another improvement shortly. This time it is a simple governor. It has but few parts, and as it works by holding open the exhaust valve, it will tend to cool the cylinders, as fresh air is drawn into the cylinders at each stroke while the governors are cutting out. Another advantage is that by a simple arrangement when starting the motor the exhaust valves can be held up until a "good swing" is on the motor, so facilitating the starting considerably.

1, Ellesmere Mansions,  
Canfield Gardens, Hampstead,  
February 26, 1900.

Yours truly  
E. ESTCOURT.

\* One of these is given herewith, and one on page 825.

## AIR-COOLED MOTORS.

TO THE EDITOR OF *The Motor-Car Journal*.

SIR,—I beg to give you below some horse power tests of an air-cooled motor run for:—(1.) one; (2.) five; (3.) ten minutes. Ten-minutes run tests taken at 1st, 5th, and 10th minutes, speed of motor between tests 1,700 to 1,800 revolutions. No load between tests.

|                | Revolutions. | Weight in pan. | Bal.  | B.H.P. |
|----------------|--------------|----------------|-------|--------|
| 1st min. ....  | 2,090        | 12lbs          | 5lbs  | 2.33   |
| 5th min. ....  | 1,900        | "              | 5lbs  | 2.11   |
| 10th min. .... | 1,765        | "              | 25lbs | 2.01   |

Ten minutes run tests taken at 1st, 5th and 10th minutes. 11½lbs in pan carried through whole run.

|                | Revolutions. | Weight in pan. | Bal. | B.H.P. |
|----------------|--------------|----------------|------|--------|
| 1st min. ....  | 2,095        | 11½lbs         | .25  | 2.28   |
| 5th min. ....  | 1,780        | "              | .75  | 1.85   |
| 10th min. .... | 1,710        | "              | 1.5  | 1.65   |

These tests were made in a shop with an ordinary temperature. A slight blast from a pipe was allowed to play on the cylinder, but this artificial cooling would not be equal to that of rapid movement of the motor through the outside atmosphere of, say, 65 deg. temperature at, say, twenty miles an hour. Anyway, apart from this the tests are interesting and instructive as showing the unsuitability of all kinds of air-cooled motors for driving small cars or voiturettes which are necessarily geared down so as to allow of the motor running at high speeds, and thus developing its maximum power. It behoves every maker and dealer in motor-vehicles of all descriptions to explain to the public that though they can buy a cheap car with an air-cooled motor this result can only be attained by using a small and therefore low-powered motor in a low-geared vehicle, and by running the motor at a very high speed, more especially when the lowest change gear is used as when climbing hills. Such cars may be all right up to a point in the hands of expert users, and in such weather as we have been experiencing through the past winter, but such a low-powered, low-geared with high-speed air-cooled motored car on a warm summer's day, and in the hands of the ordinary person, is certain to give trouble and be a cause of great dissatisfaction.—Yours faithfully,

Selly Oak, Birmingham, February 22. CHAS. SANGSTER.

THE Motor Power Company, Limited, has been registered, with a capital of £1,000, to manufacture, sell, let on hire, or otherwise deal in motors, cycles, etc. The first directors are Mr. H. Du Cros and Mr. S. F. Edge.

THE Smooth-geared Autocar Syndicate, Limited, is the title of a company which has been registered, with twenty members, each liable for £1, to acquire the rights in Provisional Patent No. 24,159 for Rough's friction gearing, and to carry on the business of engineers, cycle, motor, and auto-car accessory manufacturers, etc. Messrs. F. Rough and A. H. M. Burt are the permanent managers.

JOHN MANN, twenty-three, pleaded guilty at the Newcastle Police-court, on Monday, to being drunk in charge of a motor-car while in St. Nicholas' Square at 7.30 p.m. on February 24th, and also with furiously driving. A police officer said the man was in charge of a car plying for hire. He was drunk, and was going at the rate of seventeen to eighteen miles an hour. The car was almost run into a shop. Mr. Beattie said the man might have killed someone. He would be fined 10s. and costs on the first charge, and 20s. and costs for furiously driving.

THE Coventry Tube and Metal Company, Limited, has been registered, with a capital of £62,500, to adopt and carry into effect an agreement expressed to be made between the Cycle Manufacturers Tube Company, Limited, of the one part, in liquidation, for the acquisition of the business of the said company, and, generally, to carry on the businesses of manufacturers of metal tubing for all purposes, in particular for cycles and other vehicles, and all apparatus and implements, etc., used in connection with the same; also as manufacturers of and dealers in cycles of every description, carriages, motor-cars, and vehicles of all kinds.

## THE GENERAL ASPECTS OF BRITISH AUTOMOBILE MANUFACTURE.



AT the adjourned discussion on the Hon. J. Scott Montagu's paper reported in our issue of the 16th ult., Mr. Roger Wallace, Q.C., again presided, the attendance including Count Zborowski, Hon. J. Scott Montagu, M.P., Hon. C. S. Rolls, Hon. Cecil Duncombe, the Rev. A. Whetton, General England, Dr. Ackworth, Messrs. C. C. Lefebvre, H. H. George, J. Alldays, C. A. Smith, J. Pennell, C. R. Shipton Chas. Heyermanns, J. S. Critchley, Lyons Sampson, F. R. Simms, H. Heatley, R. Muirhead, Mark Mayhew, L.C.C., H. Sturme, H. J. Swindley, J. D. Roots, Sidney Tibbutt, Campbell Muir, A. Goodall, W. H. Kitto, and C. Johnson (secretary).

The Hon. C. S. Rolls resumed the discussion, referring to the action taken in 1896 by the British Motor Syndicate against him in connection with his Peugeot car. On the last occasion it was said that the backward state of the British automobile industry was due to the importation by private persons of foreign-made cars, but he (the speaker) believed the chief reason was due to the fact that there were few practical men on the boards of the companies. Had they had such men the course suggested as to making copies of the French cars would have been taken from the very first. It was hardly fair to expect private people to give the benefit of their experience, although, as a matter of fact, he had made appointments for works managers to inspect his own car. The importation of the best make of foreign cars might not be of immediate benefit to English manufacturers, but it would ultimately create a demand in England, and get rid of the prejudice which the public now felt against motor-cars. On the other hand the importation of inferior foreign cars would do a great deal of harm to the industry. It was very satisfactory to see the progress made by the Daimler Company in building cars, and to know that had Mr. Scott Montagu had better luck with his car at the start of the Paris-Ostend race, he might have been first. But unfortunately the repairs to his water-pipe were made by a French firm, and the brazing was apparently bad. When English makers were able to make cars equal to the best French vehicles he would be one of the first to change his custom.

Mr. Mann congratulated Mr. Montagu on the line he had taken, and said that, but for an accidental visit to the Automobile Club, where he heard much about motor patents, he might have altered his intention of embarking in the industry. The immense popularity of the automobiles in France was due to the fact that so many firms had taken up their manufacture, and there were an immense number of people engaged all over the country. He wondered if a speaker at the previous meeting knew that Panhard and Levassor repudiated the Daimler patents, and that there was an action between the holder of those patents and the firm going on at the present moment. He referred to the amendment moved by him at the formation of the Motor Trades Association with reference to persons interested in a certain group of patents being excluded from the executive, and asked whether manufacturers should not put aside jealousies so that in the near future all the big firms could combine on equal terms and share in the success to be obtained.

Mr. H. S. Holt said Mr. Montagu's paper was an indictment of directors, and he wished to speak as a director of the Daimler Company. He thought the system of directors upon manufacturing companies was a bad one, but so long as they had limited liability companies they would have to have some persons responsible. At the same time it would not be advisable to have a directorate wholly composed of experts. Directors should also be business men. Mr. Montagu had assumed that the report of the investigation committee of the Daimler Company was established testimony, but that conclusion he controverted, and reminded the meeting that the reply of the directors was endorsed by the shareholders by a majority of three to one. Dealing with various criticisms, Mr. Holt said Mr. Montagu probably knew more about company promotion than he (the speaker) did, and asked if the promoters did not

nominate the directors, who were the competent persons to do so? The payment of £40,000 for the patents was never intended as a sole right, but to obtain a licence in the same way as licences for other purposes are obtained. Nor was he disposed to regard £40,000 as a high price, seeing it secured the experience of the Cannstatt Company and their drawings, as well as the privilege of being the first in the field. The Daimler Company had never been a member of the Motor Trades Association and had no intention of joining. With reference to the suggestion that no dealings should be made with concerns with which Mr. Lawson was connected, Mr. Scott Montagu was hardly blameless, seeing that the De Dion-Bouton Syndicate held a licence from the British Motor Syndicate. He should like to be assured that Mr. Montagu was not interested in booming French cars in England. He did not believe that motor racing was likely to be a permanent institution, and thought that in ten years it would be as dead as the dodo. This year they might reach the limit of speed that could be attained on the roads with ordinary safety, and unless some system of handicapping was introduced the glorious uncertainty of the sport would be destroyed. So far as copying foreign cars was concerned, the Daimler Company had no need to go to France, for the new English motor-carriages were, in workmanship, as good as anything else made in Europe. Two years ago an eminent member of the Government had had a ride with him on a motor-car, and had pointed out several defects. He had asked him (the speaker) to write and tell him when those defects had been remedied, and he would then be ready to buy a carriage. Until now he had not felt justified in writing, but now in their latest car they had got to the position that he could recommend it.

The chairman explained that full latitude had been allowed the directors of companies to reply to the criticisms made in the paper, and he felt sure no ill-feeling would be aroused over the matter.

Mr. Sangster said he had visited many works in America, France, Germany, and England, and from his experience could say that the Daimler Company's works were honestly carried on, and the concern had a great future before it. The industry suffered from want of capital rather than over capitalisation. There were very few works turning out cars, and the output was therefore limited. In hard cash there was less than £450,000 invested in motor works, plant, and rolling stock. That was a very small sum, and they could hardly expect a great result from such an amount. In France the capital invested was twenty times as much. Many people had gone into Mr. Lawson's companies as a speculation, to get out again as soon as they could, with no idea of advancing the industry, and thus a great deal of harm had been done. There were many difficulties in the way of copying French cars so far as the measurements, etc., were concerned. Mr. Montagu had said something about tiller steering, but they should remember that tiller steering came from France. It was a mistake to say that patents were not valuable. There were many valuable patents in the motor industry. His (the speaker's) company belonged to the Motor Trades Association, and he could not see where Mr. Lawson was likely to get any advantage from it. It was a fairly representative body, and the statement of Mr. Montagu's that all the makers in membership had never turned out six cars between them was out-Lawsoning Lawson. The Motor-Car Club had been attacked. It was a very innocent little club, and the membership was of a different social class to that of the Automobile Club. There was an opening for such a club, and it was very undignified that the Automobile Club should take any notice of it. He did not ask purchasers to buy motor-cars simply because they were English, but was confident that British makers would be able to produce cars as good as the French; but more money would have to be put into the industry. Many of the firms could do better if they had more capital, and money should be put into existing companies in preference to new concerns which would have to establish works, etc.

Mr. H. Sturme was afraid Mr. Scott Montagu had taken a strongly partisan view. There had been a great deal of over-capitalisation, but it was not all in connection with Mr. Lawson's companies. The companies promoted by him were six in number,

and their nominal capital was two and a-half millions, but the paid-up capital was only £768,000. These six companies had 30 per cent. of paid-up capital, and they were making one-half of the motor-vehicles made in this country and very nearly all the cars. Twelve other motor companies not promoted by Mr. Lawson had a capital of one and a-half millions, of which £259,000 was paid up, or a ratio of cash capital to registered capital of 16½ per cent. With one exception none of these companies were making cars and most had been wound up. It had been said that companies that were over-capitalised could not pay a dividend, but when the company was not making a profit it did not matter whether the capital was in thousands or millions. He did not know anything about the internal arrangements of the Motor Trades Association, but it was just possible that the members of the trade, having been brought together, might take the thing over and run it themselves. With reference to the suggestion that English manufacturers should copy French models, the Daimler Company directors had done that, the only alteration being that they put a German engine on a French carriage, and so far as he knew they got better results than otherwise. He reminded Mr. Montagu that reversible tiller steering was used on the original cars, and it was not so very long ago that wheel steering began to be experimented with in France. Instead of merely copying the French the Daimler Company were the first to build a 12-h.p. car. Two years ago he was in Brussels accompanying the Belgian Automobile Club on their tour, and the Baron de Crawhez expressed delight when he (the speaker) mentioned the 12-h.p. car, and said it was far larger than anything he could get from Paris. The idea originated in their own works, independently of Panhard's, but the difficulty was with the carriage builders. The English cars were as reliable to-day as the French cars, and Mr. Rolls in his tours had found that even his Panhard car was not always perfect. Motors were a piece of delicate machinery running under adverse conditions, and hustled over all kinds of roads. He agreed that the boards of all motor companies should contain some practical motorists, but they should not have too many racing men, as they would not pay sufficient regard to the commercial needs. He knew six instances of firms which had started out on careful experiments, and in each case had sunk between £6,000 and £8,000 and had got nothing. If an inventor had gone to any of them with a completed car and asked them to give £5,000 for the patents and drawings, and for every assistance, they would have thought he was going to have them. The cost of experiment was very great—even if it obtained results. Mr. Sangster's Company, which turned out the best motor-tricycle, had spent over £8,000 before they got it to a practical point. There was certainly room for capital in the industry and for companies which had something practical and definite to make. He had just come back from Paris with the information that one well-known firm whose cars held records, and who had probably the largest trade in the world, were intending at a very early date to start works in this country upon very extensive lines.

Mr. R. E. Phillips endorsed what had been said as to there being room for all in the motor industry. Companies and manufacturers ought to pull together in a Motor Trades Defence Association, which should be formed primarily to look into the patent question and decide as to whether the patents as to which so many claims were made were good, and so protect not only the trade, but also the private owners.

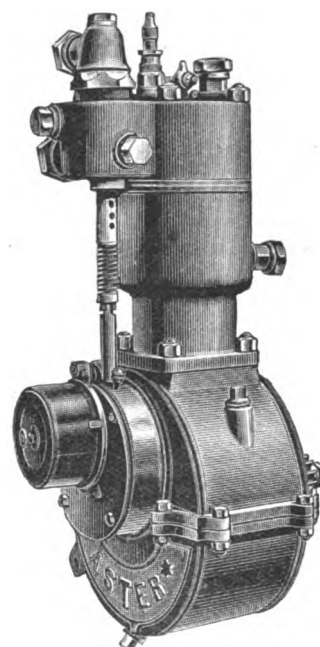
The Hon. J. Scott Montagu replied. He did not mean that every gentleman connected with a company should be an expert driver, but there should be one or two members of every board who should be in the habit of driving the company's cars. He had much to thank the Daimler Company for. They built his 5½ h.p. car, which still showed every sign of durability. He did not believe there was a more reliable car in the world than his new Daimler, and its machinery had given every satisfaction. If properly looked after, the Daimler cars would compare with any others in the world. With regard to the De Dion-Bouton Syndicate it was only fair to recognise that they must pay a licence fee to the holder of the patents in this country. He believed motor racing

would become a permanent sport, and if motors had to be classified, so had yachts and other things. It was a combination of factors that gave racing its interest and value, and they should aim at securing lighter and more powerful vehicles, to run more smoothly, with absolute control, at a higher speed. The general conclusions at which he had arrived had been upheld in the discussion, and he thanked those present for their hearing.

A vote of thanks having been tendered to the Hon. Scott Montagu at the previous meeting, that compliment was felicitously referred to by the chairman in concluding the proceedings.

## THE "ASTER" WATER-JACKETED MOTOR.

THE "Aster" air-cooled motor, with its radial discs of corrugated copper is already well known both in France and England. With the view of meeting the demand for an engine suitable for light voitures, the makers, Les Ateliers de Construction Mécaniques L'Aster, of 33, Cours Benoist, St. Denis (Seine), have lately brought out a 3-h.p. water-jacketed motor, of which an illustration is given herewith. As apart from



the water-jacket the motor is the same as the air-cooled one (illustrated in the *Motor-Car Journal* in April last year), no lengthy description is necessary. The new motor is being introduced into England by Mr. F. F. Wellington, of St. George's Square, Regent's Park, N.W.

C. B. is recommended to communicate with Mr. E. H. Clift of the Sinclair Motor-Car Works, Sinclair Road, Kensington, W.

THE Speedwell Electrical Motor-Car and Cycle Company, of Oxford Street, Reading, have sent us a sample of the "Emergency" stand they have just introduced for motor-tricycles. It is strongly made in varnished wood, measures sixteen inches when folded up, and weighs twelve ounces. It is easily carried in the straps that attach the tool-bag to the frame, and should prove exceedingly useful in localising the trouble in the case of anything going wrong with the machine on the road. The stand is already well spoken of by several well-known motor-tricyclists.

MR. C. T. CROWDEN, of the Motor Works, Leamington, has lately completed a four-seated petroleum-spirit motor-carriage, the seats being arranged *vis-a-vis* fashion. The car is provided with a single-cylinder motor fitted with water-cooling arrangement and electric ignition. The power of the engine is transmitted to the intermediary shaft by belts working on fast and loose pulleys, and from the intermediary to the rear axle by the usual sprocket wheels and chain. Steering is controlled by an inclined hand wheel, while there is a hand brake on the differential shaft and shoe brakes on both the rear wheel tires.



## THE ESTCOURT MOTOR - STARTING DEVICE.

ON another page we publish a letter from Mr. E. Estcourt, of Hampstead, regarding the new water-cooling device he has fitted on his Daimler car. Mr. Estcourt has also sent us some particulars of the novel method of starting the motor from the driver's seat, with which the same car is fitted. A general view of the device is given in Fig. 1, while a diagram is given in Fig. 2. The device, as will be seen, is very simple. A

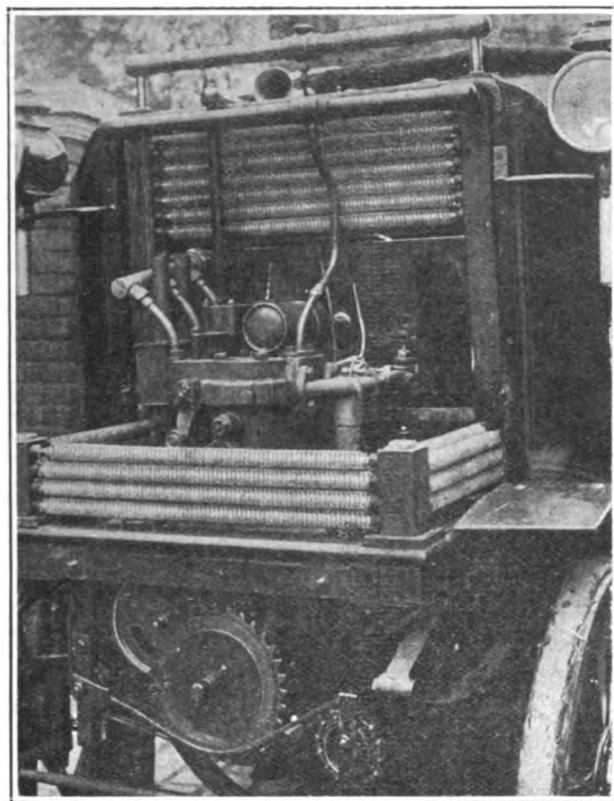


FIG. 1.—VIEW OF DAIMLER CAR, SHOWING THE ESTCOURT WATER-CIRCULATING ARRANGEMENT AND MOTOR-STARTING DEVICE.

wheel with serrated teeth, *B*, is keyed to the motor shaft, *A*. On a drum, *D*, within which is a coiled spring, is wound a few turns of chain, *C*, the free end of which is led to a handle, *E*; by pulling this latter the chain is extended, and made to engage with the toothed wheel *B*; this operation uncoils the spring. On freeing the handle the spring coils itself up, and in so doing winds up

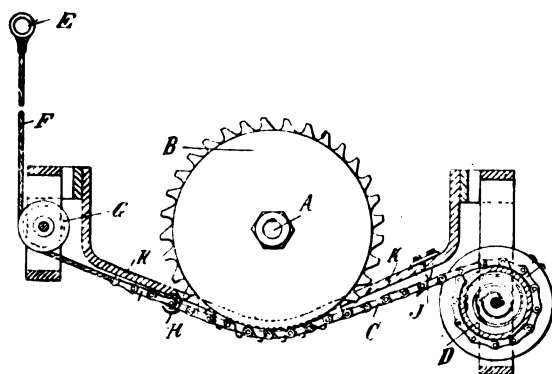


FIG. 2.—DIAGRAM OF ESTCOURT MOTOR-STARTING DEVICE.

the chain, which causes the wheel and the motor shaft to rotate.

The chain, *C*, is provided with a projection, *H*, in the form of an elongated link-connecting roller, which when the spring, *D*, is acting to wind up the chain, abuts against a fixed stop, *J*, thus preventing the drum from taking up any more of the chain. *K*

is a fixed slotted plate serving as a guide for the chain, and to this plate, *K*, the stop, *J*, is secured. Mr. Estcourt informs us that the device has fulfilled all his expectations, and that he now always starts his motor from the seat in preference to using the detachable handle.

## THE AUTOMOBILE CLUB.

### ANNUAL REPORT AND MEETING.

ON Monday afternoon Mr. Roger Wallace, Q.C., presided at the annual meeting of the Automobile Club of Great Britain and Ireland at the club-house, Whitehall Court, S.W., the attendance including Sir David Salomons, Bart.; Sir E. Jenkinson, K.C.B.; the Hon. J. Scott Montagu, M.P.; the Hon. C. S. Rolls, the Hon. Cecil Duncombe, Professor Vernon Boys, Messrs. Roger H. Fuller, Gilbert Elliott, A. Thompson, A. Ledger, Chas. Cordingley, H. E. S. Holt, Bryan Donkin, C. A. Smith, Stewart Mallard, W. H. Kitto, C. Heyermans, H. J. Swindley, J. Lyons Lampson, G. F. Beevor, Stanley Spooner, Knight Gregson, W. Worby Beaumont, H. Lefebure, J. H. Knight, E. Shrapnell Smith, J. H. Gretton, S. F. Edge, Hubert Egerton, etc.

The annual report presented to the meeting showed a membership of 586, being an increase during the year of 206. The guarantee fund now amounted to £1,521. Owing to the deaths of Sir Douglas Galton and Mr. J. T. Hopwood and five resignations from the committee of the club, vacancies had arisen to which the following gentlemen had been appointed:—Sir Edward Jenkinson, K.C.B., the Hon. J. Scott Montagu, M.P., Major Holden, R.A., Messrs. T. W. Staplee Firth, Charles Cordingley, Harry Sturme, and Stanley Spooner. After referring to the Richmond Show, the balance-sheet of which will shortly be submitted to the guarantors, the general work of the club was referred to, including the formation of a standing committee to deal with matters of urgency, publication of club notes and notices, and the formation of branches at Manchester and Leicester, and in Scotland and Yorkshire. Correspondence with the Local Government Board, the organisation of a Motor Vehicle Users' Defence Association, the compilation of racing rules, the series of house dinners, lectures, tours, runs and meets, etc., were all recalled, and the report closed with a programme for 1900, embracing the following points:—

1. The lodging of petitions in Parliament against Bills which might vexatiously restrict the use of motor vehicles.
2. Correspondence with the Local Government Board as to recommendations made by county and rural councils in respect of motor-vehicles.
3. The 1,000 mile trial and exhibitions.
4. Four trials of 100 miles.
5. Three days' trials of electrical vehicles.
6. Trials of the horse-power of motors and horse-power on road wheels of motor-vehicles.
7. Whitsuntide tour, an autumn tour, meets, and runs.
8. Meets at Hurlingham, Ranelagh, and Sheen House Clubs, specially for the training of nervous horses to encounter automobiles without fear.
9. Race meetings for motor-tricycles on the track.
10. A tour to Paris, and big race for British automobiles.
11. The appointment of hotels at which special provision is made for automobiles.
12. House dinners, lectures, papers, and discussions.
13. Special meet of motor-vehicles and annual dinner on November 14th.

The minutes of the last annual meeting having been read and confirmed, the chairman reminded the meeting that on the occasion of the last business meeting he had not anticipated that the receipts would cover expenses, but if certain expenses had not increased they would just have done so. As a matter of fact, the deficiency was £426, whereas the year before it had been £1,387. In a club of that kind it was impossible that the receipts would balance the expenditure in the early years. Therefore the result so far must be regarded as very satisfactory, especially as they had a good guarantee fund, which was originally started by Mr. Simms, who put down £1,000. One reason why the expenditure had so far exceeded receipts was that a large number of members joined at the end of last year whose subscriptions were only taken credit for this year. Had they been credited to last year's accounts there would not have been a deficiency. The finances of the club had turned the corner, and he had great pleasure in moving the adoption of the accounts as presented.

Mr. F. R. Simms seconded.

Sir David Salomons said the club had a debt of £1,800, which was fully covered by guarantees, and they also had assets consisting of furniture and any future profits and certain deposits. He thought the club should get out of debt as soon as possible, and he suggested the committee should consider the best course to adopt in that connection. In the French club the first expenses were covered by debentures, and if they could be raised by this club the profits could be used to make the club more attractive.

The balance sheet was then unanimously adopted.

The budget for the current year was presented by the chairman. From this it was clear that with the anticipated increase in membership the club would be able to make two ends meet in 1900.

Mr. J. H. Gretton suggested that the fact of membership of the club should entail a share being held in the proprietary company. That would be useful in view of the establishment of the club upon a basis which would give more responsibility in the future. The best club organisation he knew was where every member had to take a share or more which should be extinguished upon that person ceasing to be a member of the club. That arrangement worked out to the advantage of the club and did not present any great disadvantage to the member. He hoped the

committee would direct their attention to extending the advantages of the club.

Sir David Salomons said there might be a difficulty in getting the members to become liable for the money. The cheapest way of raising money would be by debentures, and even if they were to get a house costing £40,000 or £50,000, they would always have the members' subscriptions to fall back upon. He did not think the money could be raised by means of shares.

Messrs. A. Barr and Co. were re-elected auditors and accountants.

#### EXTRAORDINARY GENERAL MEETING.

Following the foregoing meeting was an extraordinary general meeting to adopt some additions to the Club rules.

The first addition gives the committee power to caution, suspend, or expel—by a two-thirds majority—any member being in their opinion guilty of reckless driving under circumstances which the Committee may consider prejudicial to the interests of automobilism.

With regard to membership the new rule prohibits the re-submission for election of any rejected candidate for membership within twelve months of the rejection; provides that rejected candidates shall not be eligible for introduction as visitors, and that all members must be re-elected, on the expiry of their first subscription.

In the discussion on this additional rule—which was ultimately unanimously adopted—Sir David Salomons thought it was rather hard on candidates. The committee should be able to inform themselves as to candidates and make inquiries personally from proposers. Mr. J. H. Grettton observed that it was a very good rule, which it was desirable to introduce into the regulations of a new club.

It was decided that the terms for affiliation of branches of the club should be as follows:—

1. "That the percentage of local subscription to be paid to the central body shall be not less than 2s. 6d. per member on condition that the local branch pays for the printing and postage to its members of the Automobile Club 'Notes and Notices.'"

2. "Members of branches may, subject to election, become members of the central body on payment to the latter of the usual subscription and entrance fee—less one guinea."

3. "Existing members of the central body residing in the district of a branch of the club, and who may join the branch, may remain members of the central body on payment of the usual subscription—less one guinea."

4. "Members of the Liverpool Self-Propelled Traffic Association who were on the register of the Liverpool body prior to July 10th, 1893, may become founder members of the Automobile Club of Great Britain and Ireland at a subscription of two guineas per annum without entrance fee, provided they avail themselves of this resolution on or before March 31st, 1900, and the list of founder members may be enlarged sufficiently to fulfil the purposes of this rule."

#### RULES FOR RACING AND TOURING.

The following resolution with regard to racing was then adopted:—

1. "That the rules for competitions of the Automobile Club of Great Britain and Ireland be and are hereby adopted, and shall come into force and be binding on all promoters of automobile competitions governed by these rules in the United Kingdom on and from Thursday, March 1st, 1900, provided always that all competitions to be held subsequent to that date which have been advertised prior to that date be exempt from these rules."

It was also decided that "members taking part in club runs or tours by doing so shall undertake that within certain areas they will keep behind the leading motor vehicle (unless a signal is given to pass), and will strictly avoid passing the motor-vehicle which may be in front of them, and running abreast within such areas. It is the duty of a member taking part in a club run or tour to see that he is fully informed as to the districts in which a speed of not exceeding eight miles an hour must be observed and the portions of the route in which the regulations above mentioned must be adhered to."

With regard to the rules and regulations for automobile competitions (summarised on page 828), the chairman (Mr. Roger Wallace) said foreign automobile clubs had taken automobile competitions under their own wing, but on the competitions committee the English club thought it best they should only nominate eight members, the others to be elected by registered automobilists, thus showing outsiders that the club was not so grasping as some seemed to think. He then promised the adoption of the rules, and the motion was carried unanimously, and the following gentlemen were elected as the club representatives on the committee:—The Hon. J. Scott Montagu, M.P., the Hon. C. S. Rolls, Sir David Salomons, Bart., Messrs. Campbell Muir, Robert E. Phillips, T. W. Staplee Firt, Robert Todd, and C. Johnson.

A vote of thanks to the chairman, proposed by Sir David Salomons, concluded the proceedings.

#### THE CARRIAGE OF MOTOR-CAR SPIRIT ON RAILWAYS.

THE following letter has been transmitted by the committee of the Automobile Club of Great Britain and Ireland to the general managers of the principal railway companies in the United Kingdom:—

"SIR,—The attention of this club has recently been called to Clause 2 of the new consignment note which appears on page 217 of the General Railway Classification of Goods by merchandise trains in the issue dated January 1st, 1900. This club, which has some 600 members, the majority of whom are either private motor-vehicle owners or connected with the construction of motor-vehicles, desire to bring before you the very

serious consequences which may arise from insistence on the operation of this clause. The transport of petroleum spirit by railway to motor owners is daily growing in magnitude. The committee of the club do not for a moment believe that the railway company in inserting this clause do so with the wish of strangling an industry which on the Continent has already assumed very considerable proportions. It is evident that the intention of the clause is to prevent petroleum spirit being transmitted by railway in receptacles which are unfitted for the safe transmission of the spirit. It is not quite clear from the clause whether its provisions are only to come into operation in the event of the petroleum spirit not being packed so as to comply with the regulations as to packing, which appear on page 189 of the General Railway Classifications book, nor is it clear what is the intention of the words 'no possibility of leakage,' since it is not specified whether the receptacles are to be so constructed to prevent the possibility of leakage under such extraordinary conditions as for instance a railway collision. The position of the automobilist appears to be as follows:—The makers of the petroleum-spirit refuse to take the responsibility required under clause 2 referred to, unless the buyer of the spirit will indemnify them against the risk. The automobilist, therefore, in ordering motor spirit to be sent to him by railway runs a very great risk; for instance, if a careless railway servant were to throw a box containing cans of petrol across a platform or room, and were thereby to cause a leakage, which could not possibly have occurred under proper treatment of the package, and if the leakage were followed by fire, the railway company might claim from the automobilist the making good of all damage and loss arising from the fire unless the automobilist could prove wilful negligence on the part of the railway servant, of whose conduct naturally he would have no knowledge or evidence whatever. The committee of this club, having for its purpose the general advancement of automobilism in this Kingdom, naturally desire that every possible precaution should be taken to prevent accident in connection with the transport of petroleum-spirit, which is largely used in connection with a certain class of automobile vehicles. They would be prepared, if desired, to appoint a committee composed of gentlemen who are not commercially connected with the petroleum trade, and scientific men who have a knowledge of the properties of petroleum-spirit to examine into the methods employed by the sellers in packing petroleum-spirit for transmission by railway and to report to the railway companies what, in the opinion of the committee, would be the safest method of packing, and the club would uphold the policy of the railway companies in insisting on a thoroughly safe and recognised form of packing being adopted, and on the sender of the spirit being, in the event of damage, subject to a fixed penalty for improper packing such as that which obtains under the explosive substances Clauses.

"The committee trust that your company may see its way not to insist on the provisions of Clause 2 referred to, pending a thorough enquiry into the matter. I have the honour to be, Sir,

Your obedient servant,

"C. JOHNSON, Secretary."

The Motor Trades Association have also addressed a letter to the secretary of the Railway Clearing House as follows:—

"DEAR SIR,—I am directed by the committee of the Motor Trades Association to communicate with you in reference to certain clauses which have been inserted in the consignment note and new regulations for 'Inflammable Liquids, Class A.' The association, as representatives of a number of motor-car manufacturers, merchants, and agents, feel it incumbent upon them to approach you in the matter. The association desire to point out that the motor-car industry in this country has developed very rapidly during the last two or three years, and large quantities of inflammable liquid are used in the industry, and that it is doing a very great and useful work throughout the country, and that its rapid development is assured, and there is no doubt that it will be one of the greatest industries in the country, and one which will as a natural consequence pay large sums to railway companies. My association observe in Clause 2 of the new consignment note (and which clause appears on page 217 of the General Railway Classification of Goods by merchandise trains in the issue dated January 1st, 1900) that a consignee is expected to enter into a contract with the railway companies in the following words:—

"That I will indemnify the company against all claims for injury to person or property arising directly or indirectly from the inflammable qualities of such goods from non-compliance with the before-mentioned regulations and conditions as to packing such goods, and will pay full compensation for all injury to their servants and damage to their property so arising unless it can be proved that the injury or damage is due to the wilful neglect of the company's servants."

"In the first place, my Association desire to know whether the interpretation of this clause is that the same can only come into operation for non-compliance with the requirements and conditions as to packing, and I shall be glad if you will please approve or disapprove this interpretation. Secondly, the regulations and conditions as to packing are set forth at page 189 of the book containing the General Railway Classification of Goods before mentioned, and on referring to them I find the following words in Table 7, Table of Charges for Inflammable Articles, Class A:—'In casks, iron drums, or iron casks, strongly made or securely closed so as to prevent all possibility of leakage.' The words 'all possibility of leakage' might be interpreted to cover a much wider area than is actually contemplated. It might mean that an inflammable article must be contained in such a case or packing as to prevent any leakage even in the event of such leakage being caused by the impact of a collision or other accident under extraordinary conditions. My Association would like to know if your

Company will define these words by stating that the Railway Companies require that the casks, iron drums, or iron cans are to be made strong enough for the conveyance of inflammable liquid under nominal or ordinary conditions, and if so, will they add to the wording above set out the limiting words under ordinary conditions of transit, or some such words of interpretation, as it is perfectly clear the present wording is so indefinite and wide as to raise such alarm in the minds of those who are called upon to enter into such contract as to render the carrying on of their business prohibitive. Thirdly: Clause 2 deprives a consignee of his rights at common law by inserting the words that 'he will indemnify the company, etc., unless it can be proved that the injury or damage is due to the wilful neglect of the Company's servants,' therefore in the event of an accident arising from or attributable to the slight negligence, ordinary negligence, or gross negligence of a Railway Company, the Company may nevertheless proceed against the consignee and he will have estopped himself from any defence whatever. The only defence he can set up being the wilful neglect of the Company's servants, and to constitute wilful neglect he would have to find practically evidence of criminality.

"My Association feel that such wording has crept in without due consideration, as they are advised it is contrary to the policy of English law and contrary to the interests of our commercial community, and no merchant or trader in his senses would enter into a one-sided contract by which he would undertake a liability, anywhere from a penny to £100,000 or upwards, according to the destruction wrought, for a condition of things brought about by the negligence, slight, ordinary, or gross, of the party to whom he would have to pay for the consequences. It is manifestly absurd and unjust that if an accident happened through the carriage of inflammable articles, where such accident was brought about by the negligence of the company, that the company should be rewarded for their own negligence by the consignee. 'Wilful' negligence amounts practically to 'criminality' and is and moreover would be conspicuous by its absence in any accident in traffic of inflammable liquids, and therefore, for the railway companies to expect their customers to sign an indemnity contract that they will pay the damages and the costs for an accident arising through the negligence of the company or the company's servants is contrary to the policy of ordinary commerce and would be a suicidal policy of any trader to sign such an indemnity. The indemnity clause as it stands is fatal to the transport of inflammable liquid by the railway companies, and renders it prohibitory to traders in this commodity to carrying on their business, and they will have to either discontinue this branch of commerce or arrange for road transport, and thereby deprive the railway companies not only of this traffic, but will create a desire in the minds of all users of motor-vehicles to adopt the means of transport at their command, other than railway transport, as a set off against what they all consider to be an unreasonable attitude on the part of the railway companies. My Association will be glad to know whether you are prepared to eliminate the whole of Clause 2 and resuscitate the old regulation, or what proposals you are prepared to make in regard to the matters referred to by me in this letter.

"The old regulations have, I understand, been in operation for 25 or 30 years, thousands of pounds have been earned by the Traffic Departments of railway companies for the transport of inflammable liquids, and my Association are informed that the old conditions have worked without creating any inconvenience.

"Yours faithfully,  
"G. H. SMITH, Hon. Secretary."

#### THE MOTOR MANUFACTURING COMPANY.

THE adjourned second ordinary general meeting of the Motor Manufacturing Company, Limited, was held on Monday at Winchester House, Old Broad Street. Mr. John H. Gretton (the chairman of the company), who presided, said that the shareholders no doubt would expect some explanation from him of the reason why the report and statement of accounts had been delayed. In the ordinary course of affairs the date to which the report and accounts should have been made up would have been June 30 last, and this would have been done, but when they applied to the officials of the company they were told that in order to do it properly it would be necessary to close the works for three weeks to take stock. At that time the company had received a large number of orders, and in many cases they were bound to deliver them at a certain date. It was also the summer time, when they were likely to do the most business. The directors, therefore, thought it would be contrary to the company's interests to stop the progress of the business in any way at such a time, and they came to the conclusion that they should fix the date of making the accounts at October 31st, believing that they would be able then to hold the meeting in December or at the beginning of January. The valuation of the stock and plant and of the vehicles in process of construction and already made took, however, a great deal longer time than had been anticipated by the officials, the consequence being that the stock-taking was not finished till January 31st. The balance-sheet had then to be made up, and as the accounts were dated February 16th, it would be seen that no time had been lost in getting them out and sending them to the shareholders. It would be seen that the board had done everything in their power to provide for depreciation where such was necessary, and they had written off depreciation in every direction. The profit and loss and general development of patents accounts embraced a period of twenty-two months; so that they must almost be divided by two if the shareholders wished to form an idea of what the yearly expenditure had been. He would like first to deal with the history of their administration from the time

when this company came into existence. This was a company formed by the shareholders themselves, who appointed a committee from among their own number to make arrangements with respect to the administration of affairs, and it was part of the mission of that committee to arrange for the board. He was bound to say that he could not quite congratulate the committee upon the way in which they went about their task. For example, a gentleman was elected as a member of the board who was chairman of a company whose business it was to make the same vehicles as those upon which this company relied to make a profit. He believed that that gentleman did his duty conscientiously and honestly; but it was as true to-day as it was of old that no man could serve two masters. One thing was practically certain, that the other company obtained a large order from this company, by which, no doubt, the latter lost a considerable amount of profit. Not only was that the case, but there were originally two other representatives of another company whose business was not absolutely different from that of their own company, and he could not help thinking that at the beginning it was not to the advantage of this concern that those two gentlemen should have been appointed upon the board. In process of time these gentlemen, who were perfectly honest and conscientious he believed, retired; but the position of affairs which existed up to that time had been a most difficult one. He himself was appointed to the position he now occupied some months after the company was formed, and all the arrangements made had been made prior to that time. Consequently, the only thing he could do—and he must say that he had been admirably supported by his colleagues—was to endeavour to change what they found had been a mistake. It took a long time to do this, and entailed a great deal of hard work. Mr. George Iden was appointed the works manager, and that gentleman had occupied a very prominent position in the locomotive works of the London, Brighton, and South Coast Railway. Mr. Iden knew how to make a motor-carriage, because he had invented a motor and had given considerable thought and attention to the matter.

The directors, therefore, saw what a valuable man they would have in Mr. Iden, and he might say that no one could have given greater devotion and more energy and ability to the business which he then found in a most inefficient condition. At that time they had very little of the machinery necessary to produce a motor-carriage on an economical basis. In order to do this it was necessary to have the most perfect automatic labour-saving machinery. Mr. Iden started to place the factory in a properly organised and efficient condition. He had to obtain the most perfect American automatic machinery, and it took a year before they could get all that was necessary. They obtained it at last, but considerable time had gone by, and during that time Mr. Iden had to do the best he could with the machinery at his disposal; but he could not turn out a vehicle at a price which would prevent the company losing money. During that period they were without the necessary machinery they had to put a great deal of work out, and to get a good many parts from other people. Therefore, until the beginning of last year the company was not able to produce the motor-vehicles upon a basis which would enable them to realise a profit and prevent a loss. At the time this company was started there was a demand for a certain kind of motor vehicle, and the board commenced to make these; but, curiously enough, shortly afterwards the demand ceased, and the public went in for another kind of vehicle. In the immediate past this question of demand for motor-vehicles was initiated in France, and it happened that this particular class of vehicle had had a very large success there; but, for some reason or other, the French taste had changed. He thought he had gone over the ground of what had happened during the first year, and the shareholders would have noticed in the report that during last year the sales had increased to a very remarkable extent, being 130 per cent. more than the sales of the previous twelve months. He would give them some statistics which, he believed, would be even more interesting than that—as to the output from the works. The profitable working of the business depended upon the output, and if they could bring the output up to an extent that was sufficient, and compare it with the prices at which they could sell, they could very easily ascertain whether they were likely to work at a profit or not. During the twelve months of 1898 the company turned out seventy-five motor-vehicles, and in addition thirty-one separate motors. During the ten months ended October 31, 1899, being the date to which the accounts were made up, they made 163 motor-vehicles and ninety-two separate motors; but in the three months and a half from November 1 until the middle of the current month they had made 120 motor-vehicles and 100 separate motors. These figures were extremely important, because they showed that little by little the company had arrived at a considerable output from their works, and as he was perfectly certain they had found the class of vehicles that the public would like, they were practically certain to sell them. He had no hesitation in saying that it was perfectly easy to sell all the output of the works, and even more if they could increase it, which he saw no reason to doubt. With that conviction in his mind, he had made a calculation, and he believed that at the price they could obtain they would show a very good profit indeed. There was no doubt that there had been a great increase in the favour with which motor-vehicles were held in this country, and it was also the opinion of all those who were closely watching the industry that during this year a remarkable progress would be observed in the demand for motor-vehicles. An important exhibition of them would be held at the Agricultural Hall, and, under the auspices of the Automobile Club, a thousand miles' tour through this country would take place. The motor-carriages the company were now making were what was called the English Panhard.

The Panhard was a vehicle which had obtained a great deal of favour in France, and the Panhard motor was the Daimler motor which

had been perfected in France; while this company claimed that they had perfected that which they had to manufacture. They were also making the Daimler motor, holding exactly the same rights as any other company making that motor, and they claimed that they were making it as efficiently as anyone else. The company were also making the De Dion motor, which, probably, was the best that had been invented. They made that motor for tricycles, and had also decided to make it with a water-jacket, so that it might have more power. They had used strong endeavours to induce cycle manufacturers in this country, whose business through competition had become unprofitable, to allow the company to make motors only, and for them to make the vehicles. The company had succeeded in persuading many manufacturers to get the motors from them, and they were pushing the idea as far as they possibly could. With this water-jacketed motor they would be able to make a light little vehicle which would be most serviceable in many ways, and to sell it at a not very high price. While they were pushing that idea and supplying the motors they were at the same time making the vehicles themselves, because they must try to do business in every direction; but they would be only too happy if they could persuade the large manufacturers in this country to employ them to make the motors, leaving the others to make the vehicles. In addition, the company were making the motors which Mr. Iden had invented, and for which the company had a monopoly. They had two carriages of this kind. One was called the Princess, which was a little two-seated carriage, the whole of the machinery being separate from the carriage, so as to do away with the vibration, and anyone who visited their premises at Holborn Viaduct would be surprised to see how easily it travelled along the road. During last year they had done a great deal of business in making vehicles for public service, but then they could only make them to carry nine people. They had found a demand for vehicles to carry a larger number of persons, and also to go up steep inclines; consequently they had constructed a vehicle which they called a 10-h.p. car; but Mr. Iden had just tested a carriage he had made, and had obtained 13 h.p. out of the motor. They had been building these as char-à-bancs, but they could build them also as wagonettes. They had also been able to build a public-service vehicle, which he had no hesitation in saying, for a petrol-driven car, was at the present moment almost alone in the market. He was certain there would be a demand for that particular kind of vehicle, because this public-service question was very important. At the company's works, on the first floor, they had a set of gear-cutting machines which were remarkable to see. These automatic labour-saving machines were started in the morning, and went on working and cutting the wheels without any attention to them. On the next floor they had lathes and drilling machines up to date, and they had also a plating plant. Further, they possessed a carriage-building department, a paint shop, and upholstering shop, while on the top floor they had an almost perfect plant of wood-sawing and turning machinery. One difficulty they had was that they had been compelled to put out their forgings and castings. The company had built a small foundry; but they could not do much work with it, and for a considerable time the engineering firms of this country had been so full of orders that it was difficult to get these forgings and castings done. Therefore there was no way out of it but to build their own foundry. Another inconvenience was that the smithy was not a part of the factory. In order to produce motor vehicles on a mechanical basis it was necessary to have the most perfect machinery that could be obtained; consequently, the company required more working capital. They should have the funds to enable them to wait a couple of months to get their stock together, and all that sort of thing. He was therefore going to propose to the shareholders that they should select from among their number a few of the most prominent men of business, and he would not suggest that it should be much larger than five in number; in fact, if they liked to make it less it would be well. He would like them to be called a committee of conference, to meet the board, which only numbered four at present. He had also learned from Mr. Hoffmann that he would be glad to give up his position to any prominent shareholder. The only object of the Board was to do all they could for the furtherance of the shareholders' interests. They had had to work a new industry with a great deal of difficulty. This industry had met with considerable prejudice on the part of people who somehow or other objected to a new form of locomotion. This, however, was not a new experience, but had always been the case—with the railway, with steamboats, and even with bicycles at the commencement. They would therefore be only too glad to have the assistance of prominent shareholders, and he hoped the meeting would follow out his recommendation, and select several gentlemen from their own number. He hoped he had laid before the meeting a retrospect of the company's affairs which could be understood; but he would not close his remarks without expressing how much they appreciated the devotion and desire to promote the interests of the company displayed by the staff generally, both in Coventry and London. The works manager had devoted a great deal more time than was usual for a man to devote to business, having worked night and day. The same could be said of all the company's staff in Coventry and London, including the secretary. The Chairman then concluded by moving the adoption of the report and accounts.

Mr. Richard Hoffmann seconded the resolution. Mr. Brown and Mr. Glass criticised the accounts. Dr. Drysdale complimented the Chairman on his very exhaustive speech. He believed that the motor industry, in spite of the opposition to it, would ultimately succeed. Mr. Hutchings said he had done all he could to introduce these motor-vehicles into the country for communication between country towns and villages,

and with considerable success. He would like to move as an amendment: "That a committee be appointed to investigate the accounts, to consider the best mode of raising capital, the approval of the accounts standing over pending the report of that committee, and that this meeting be adjourned to receive such report." Mr. Barton seconded Mr. Hutchings' amendment. The Chairman appealed to Mr. Hutchings to alter his proposal, and to allow the accounts to pass. The board had laid them honestly before the shareholders, and if they were not passed it would be considered as a distinct vote of censure. He might say with regard to the printing that it had been given on the lowest tender. The amendment was then withdrawn, and the original resolution agreed to.

The following gentlemen were then appointed members of the committee, namely, Messrs. Holt, Hutchings, Garnett, Barr, Glass, and Colonel Harris. The auditors (Messrs. Whitehill and Whitehill) were re-elected, and the meeting closed with a vote of thanks to the chairman. —*The Financial News.*

## ALLEGED MISREPRESENTATIONS IN A PROSPECTUS.

In the Queen's Bench Division on Tuesday, Mr. Justice Ridley and a special jury heard the action, London Electric Omnibus Company v. Neill, in which the company sued Mr. William Mayne Neill, a merchant, of 7, Mincing Lane, to recover £129 15s. for calls upon 240 shares, which he held in their undertaking. The defendant declined to pay the amount on the ground that he had been induced to subscribe for the shares in the company by misrepresentations contained in the prospectus issued on 19th May, 1896. He counter-claimed for the rescission of the contract, or, in the alternative, sought to recover under the Directors' Liability Act of 1890, from the company and directors, damages for misrepresentation. The individuals sued were Major Samuel Flood Page, formerly chairman of the company, Mr. Thomas Sutton Flack, Mr. Henry Fox, Mr. William Marshall, and Mr. Flaxman Haydon, his trustee in bankruptcy, Mr. J. B. W. Maunders, and Mr. Radcliffe Ward. The learned judge, in the course of the hearing, held that the defendant Neill could not obtain rescission of contract on account of delay in making the claim. In summing up, he asked the jury—(1) Was the defendant induced to buy these shares and to subscribe to the company by the alleged misrepresentation; (2) were the statements untrue; and (3) if untrue, had the directors reasonable grounds for believing the statements, and did they believe them when they were made? The jury found that Mr. Neill was not influenced by any alleged misleading statements in the prospectus and that the statements in the prospectus could not be regarded as untrue. Judgment was entered for the plaintiff company for the amount of the calls claimed, and for the company and the directors on the counter-claim.

## RULES AND REGULATIONS FOR AUTOMOBILE COMPETITIONS IN THE UNITED KINGDOM.

THE committee of the Automobile Club of Great Britain and Ireland have framed rules and regulations on the basis of those obtaining on the Continent which are to control all purely automobile contests in the United Kingdom. The committee in providing that on and from the 1st March next (1900), all purely automobile contests shall be carried out under its rules and regulations, and that any person taking part in any motor contest in the United Kingdom which is not held under its rules and regulations, shall forfeit his right to take part in any other contest, does so, not with a view to interfering with legitimate enterprise in the promotion of races and competitions, but in order that all motor competitions may be carried out under the same rules and for the securing of fairness in running and uniformity and correctness of records. Rule 99 provides that registered automobilists who are not members of the A.C.G.B.I. are to be represented on the Competitions Committee by four representatives elected by non-members of the club. The club has no control over races of motor-vehicles in which the mechanical propulsion is aided by muscular power, as its rules and regulations will only govern races which are purely tests of mechanical propulsion of vehicles without the aid of muscular effort.

Generally, automobilism is treated as being akin to yachting, inasmuch as muscular power is not a factor of success, but success is obtained by the combination of excellence in a machine and skill on the part of the driver. The committee are therefore of opinion that, as in yacht racing the sailing of the yacht may be undertaken either by the owner or a paid master, so in automobile racing an owner may race against a paid driver either for a money prize or for a trophy. The committee trust that in consideration of the fact that the rules have been prepared solely in the interest of the advancement of automobilism in this kingdom, and of the careful study which has been given to them by the Racing Rules Committee of this club, they may receive the hearty support of automobilists and promoters of automobile competitions in the maintenance of the club's rules and regulations, and whilst they cannot be taken as final they will serve for the proper regulation of the sport at the outset.

HERR ADAM OPEL, of the Motorwagen-fabrik, Russelsheim, Germany, has sent us a copy of his motor catalogue, which illustrates two types of the Opel cars—a two and a three-seated vehicle. The vehicles appear to be very much on the lines of the well-known Benz type, but are fitted with wooden wheels.









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